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*The Impact of Capital Structure
Determinants on Small and Medium
size Enterprise Leverage*

An Empirical Study of Iranian SMEs

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Abstract

Finding the suitable capital structure for small and medium size enterprises, SMEs, is vital. A suitable capital structure helps SMEs to stay alive in the competitive market and has a positive effect on the national economy. Wealth maximization is the first objective of the firms, and capital structure proposition shows how a firm plans to finance its projects to meet its first objective. The purpose of this thesis is to investigate the impact of the capital structure determinants on the SMEs borrowing behavior. SMEs in this research are defined as the small independent privately held firm with less than 250 employees.

In order to reach the purpose of this thesis, I have consulted the relevant theories of capital structure. By the support of the earlier studies, as well as the related theories, I have developed the testable hypotheses to examine the impact of capital structure determinants on the decomposed leverage level. To conduct this thesis, I have used the deductive approach, which is a similar approach suggested by the key reference of this study, Michaels et al (1999). Size, age, profitability, growth, operating risk, and asset structure are selected as the determinant of capital structure. With the unique set of data gathered from 201 SMEs in Iran over the period of 2006 to 2010, the statistic panel data regression is used to analyze the empirical data. To investigate the borrowing behavior of the SMEs comprehensively, the observed SMEs were picked up from different manufacturing industries in Iran.

The result of this research reveals that the impacts of capital structure determinants on SMEs leverage levels are different in terms of both magnitude and direction. The result indicates that profitability has a strong impact on SMEs borrowing decisions. Besides profitability, size and asset structure appear to have an impact on leverage level in compare with other determinants. This thesis finding shed lights on the necessity of using the maturity structure of debt (short-term debt and long-term debt) as dependent variables. Firms are more willing to finance their projects with short term debt, rather than long term debt. Long term debt is costly, and the probability of bankruptcy is higher with long term debt. Although long term debt is riskier for SMEs, but it shows the management confident in the firm's future since it obliges the firm's management to make legally binding future payments of interest. However, the empirical result of this study shows that all the determinants have an effect on the level of leverage in SMEs.

Key words: Capital structure, Small and medium size enterprises, internal and external financing.

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Chapter 1. Introduction

Small and medium size enterprises or SMEs are getting recognized due to their contribution to the national economy. The significant role of SMEs has evolved over a time. A shift has been occurred from the view point of SMEs as a contribution to society and political stability to more on an economic ground. The development and success of the SMEs may help smooth transition of the economy to market base one. However, SMEs have some characteristics, which confine them to enjoy the same access to capital market as the large firms do.

There are large numbers of papers with the focus of SMEs and its role in innovation, poverty, globalization and GDP growth. However, I found that there are a limited number of researches with the focus on SME and its capital structure. In January 2002, Central Bank of Iran assigned Tehran University Business School to carry out the Iran Survey of SME Finances for the first time in Iran. The research was the first representative survey of SMEs in Iran to provide analysis of the SMEs capital structure, and the ways of access to external finance.

Capital structure and its compositions are one of the most prominent topics in the corporate finance theories, which have reflected in Modigliani and Miller theorem (1958). The main proposition of Modigliani and Miller theorem, under certain assumptions, is that the market value of the firm is independent of its capital structure composition. Numerous financial economist introduced leverage relevance theories to explain the different composition of debt ratios across the firms, after Modigliani and Miller proposition in 1958. In some theories introduced by DeAngelo and Masulis (1980), the existence of bankruptcy cost and taxes make debt relevant. In other theories, debt is relevant due to the existence of information asymmetry (Myers, 1984; Ross, 1977). A third debt relevant theory is called agency theory, which is introduced by Jensen and Meckling (1976). Agency theory is about the conflict among managers and outside shareholders and bondholders.

Various capital structure researches have come to the conclusion that the combination of leverage related cost and tax advantage of the debt, results in an optimal capital structure. This optimal capital structure is below 100% debt since the tax advantage is traded against the probability of bankruptcy cost. However, the question arises here is if different gearing related cost and advantage are economical serious enough to affect an optimal capital structure. Various empirical studies have been conducted to answer this question. The empirical result indicates that the capital structure is related to the firm's characteristics. Such characteristics as firm size, profitability, growth rate, firm risk, and industry characteristics are recognized by many authors (e.g. Marsh, 1982; Bradley et al., 1984; Kester, 1986; Titman and Wessels, 1988). It is believed that each of the above characteristics play a different role in large firms and SMEs capital structure.

The key reference of this thesis is a research paper done by Michaels et al (1999). They research is focused on the SMEs characteristics, which influence the capital structure. Michaels et al (1999) pointed out, "*...that the capital structure of the firm is related to the*

monetary behaviour of the firm such as firm size, age, and profitability, and growth rate, industry feature level of risk, asset structure...”

This thesis uses two theoretical models in order to be able to explain how the SMEs capital structure determinants influence their borrowing behavior. The two theoretical models are the static trade-off theory and the pecking order theory, introduced by Myers (1984) and Myers and Majluf (1984) accordingly. This paper also uses a decomposed leverage level by dividing the total debt to the short-term and long-term debt. For this purpose, I use the Iranian nationwide panel data covering a period 2006-2010.

1.1 SMEs Definition

One definition of a small and medium-size enterprise (SMEs) is a business with less than 250 employees. In the UK, SME accounts for fifty eight percent of the private sector jobs and fifty two percent of the private sector revenue (Source: SME Statistics for the UK). Between years 1999 and 2003, employment in the private sector SMEs increased by 4.7 percent while large firms in the private sector experience a four percent decreased in employment. Numerous studies have indicated enterprise as an element to a higher rate of growth, productivity and innovation (Geroski and Pomeroy, 1990; Cosh, Hughes and Wood, 1999).

An extremely essential element for start-ups and growing businesses to achieve is the availability of capital (HMT/SBS, 2002). Capital market is imperfection like any other markets. There are always obstacles for smaller businesses to raise sufficient external finance to meet their needs (Bolton, 1971; Wilson, 1979; Graham, 2004). In the Iran, these obstacles have caused to substantial government interventions in both equity and debt markets. Government introduced two schemes; one is Small Firms Loan Guarantee and, the other is Regional Venture Capital Funds.

Table below divided enterprises into three different groups called micro, small and medium enterprises. The table has three columns, which shows the staff headcount, turn over and balance sheet total. By considering the number of employees, an enterprise will be called SME if it meets the turnover limits or the balance sheet limits (EC Enterprise and Industry website).

Enterprise category	Number of employees	Turnover	OR	Balance sheet total
Medium size	≤ 250	≤ € 50 million		≤ € 43 million
Small	≤50	≤ € 10 million		≤ € 10 million
Micro	≤10	≤ € 2 million		≤ € 2 million

Figur 1 Firms Categories (EU, 2011)

There are considerable similarities between SME and entrepreneurship, and many authors use these concepts interchangeably, although there are two different concepts. According to Carland et al. (1984), the owner of a small business is an individual who set up and manage the business for his personal goal. It is considered that the firm must be the first source of income and will consume the most of its owner’s time and resources. Entrepreneur is also an individual who set up and manage a business to maximize profit and growth. However, the

entrepreneur is characterized by innovative behavior, and in many cases they will employ strategic management in the business.

1.2 Importance of SMEs to Iran's Economy

According to A. Romano et al (2000) SMEs in each country has the utmost influence on economy development, through invention of employment, productivity and innovation. Porter (2006) stressed out that, in the recent two decades, the impotence of SMEs has increased enormously because governments have accepted the role of the SMEs role in the economy.

SMEs are a significant part of the Iran economy, and its contribution is vital to the future economic growth. SMEs activities help to reduce unemployment and create jobs. A dynamic and growing SME sector play a crucial role is raising productivity growth in the Iran economy by stimulating innovation, competition and encouraging the process called as “productive churn”. According to the ministry of labor and social affairs in Iran, in early 2010, there were nearly one million SMEs operating in Iran. SMEs accounts for more than half of the private sector employment and approximately half of all private sector revenue (Fraser, 2004)

Having access to external finance is one of the important issues for SMEs. SMEs need finance to fund their business investment, reach their growth potential and for facilitating new start-ups businesses. Hussain et al. (2006) believed, once the SMEs internal source of finance found to be insufficient to meet the business's objective, these companies were looking to an external source of finance. Lack of ability to raise finance can limit the cash flow and block the business survival. In Iran, government has started a plan from 2006 with the aim to ease up the process of raising external fund for SMEs. Donckels (2000) explains how essential it is for SMEs to use external finance in their capital structure. Donckels found in his researches that most of the SMEs fund their company by long term fund offered by banks and financial institutions.

External finance facilitates the economic churn. The important part of market mechanism within the economy for resource allocation is external finance. External finance resources enable new businesses to come up with innovative products or efficient production process. All these positive changes in the business will contribute in productivity improvement, and it helps enterprises to start using the underutilized resources within the economy.

1.3 Problem Discussion

Review on the relevant literatures regarding the capital structure issues, shows that the focus of the most capital structure studies is on the listed firms, and the small business's capital structure is highly overlooked. Various empirical researches on capital structure gathered data from the firms, which are classified as large businesses (Van der Wijst and Thurik, 1991; Chittenden et al., 1996a; Jordan et al., 1988). Researches on the SMEs capital structure clearly show that there is a massive difference between SMEs financing behavior and their large counterparts.

According to Agn (1992), small businesses are not engaged in the problems, as well as opportunities, of large firms. However, small firms face different complexities, such as the presence of estate tax, shorter expected life than large firms, intergenerational transfer problems, and prevalence of implicit contracts. Moreover, Pettit and Singer (1985) argued that standard problems like asymmetric information and agency cost is more severe in small firms than large firms. According to Cassar and Holmes (2003), lack of management skills, and the limited separation of business decisions from personal purpose is another problem in SMEs.

Only limited amount of researches have focused on SMEs and the factors that have an impact on the borrowing decisions of them. SMEs are notable because the financial policy and capital structure of these firms play a key role in a country economical and political condition. Studies on the failure of the SMEs reveal that financial leverage is a main cause of decline (Keasey and Watson, 1987; Storey et al., 1988; Lowe et al., 1991). SMEs borrowing decisions are different from large companies, due to the borrowing constraints they face. Therefore, the problem is to find out how capital structure determinants affect the borrowing behavior of the SMEs. It is useful to know whether all the determinants have a same level of significant on the firm's leverage or not.

1.4 Problem Formulation and Purpose

The above discussion leads to the following research question:

Research Question: What are the impacts of capital structure determinants on the borrowing behavior of the Iranian SMEs?

Numerous literatures have investigated about the determinants of capital structure, and their impact on the listed companies. Nevertheless, number of research with the focus on the SMEs capital structure and SMEs borrowing behavior are limited in general. In the case of Iran specifically, I believe that there is a gap in the literature regarding the influence of capital structure determinants on Iranian SMEs borrowing behavior. The purpose of this thesis is to test empirically the impact of capital structure determinants on the Iranian SMEs borrowing behavior. In fact, this thesis aims to test the static trade off theory and the pecking order theory on Iranian SMEs, and examine if the selected factors have an impact on the firm's capital structure.

This thesis adapted a theoretical model from a work of Michaelas et al. (1999), and tested the hypothesis in the context of 201 SMEs in Iran, over the period of 2006 to 2010. The framework of this study comprised of eight variables, two dependent variables and six independent variables. Six independent variables are size, age, growth, risk, asset structure, and profitability. The two dependent variables are short term debt and long term debt. Each factor has been selected in accordance with (Michaelas et al., 1999) theoretical model.

1.5 Thesis Outline

According to Ghauri and Gronhaug (2005), “*research design provides a plan or a framework for data collection and its analysis, which identifies the research methods and the priorities of the researcher*”.

This thesis starts with introduction chapter as chapter one. This chapter discusses the SMEs definition, significance of SMEs to the national economy as the background of the study. The introduction chapter also contains problem discussion, research’s purpose, and research question.

Chapter two dedicates to the presents the most relevant theories of capital structure. I have tried to select and explain theories, which are relevant for analyzing the research question.

The third chapter concentrates in shaping the hypotheses, according to the theories explained in the previous chapter. I have consulted many scholars’ researches and earlier studies and findings to provide a solid background for the hypotheses. In order to provide the logical sense of relationship between variables related to the thesis question, main part of the thesis dedicated to this chapter. This chapter aims to make a clear view about the variables and their relationship, which finally leads to the thesis proposed model.

The fourth chapter focuses on the methodology used in this thesis. The main research approaches chosen for analyzing of the highlighted topic have been explained. This chapter also includes arguments about research strategy, data collection, describing the econometric model, selection of dependent and independent variables, and data reliability and validity.

Chapter five gives precise details about the result of the regressions and the empirical findings. The analysis of the empirical findings and explanation about whether a hypothesis is accepted or rejected will come in this chapter.

Main conclusion, which is deriving from the analysis of the data and discussions and further suggestions, will point out in chapter seven.

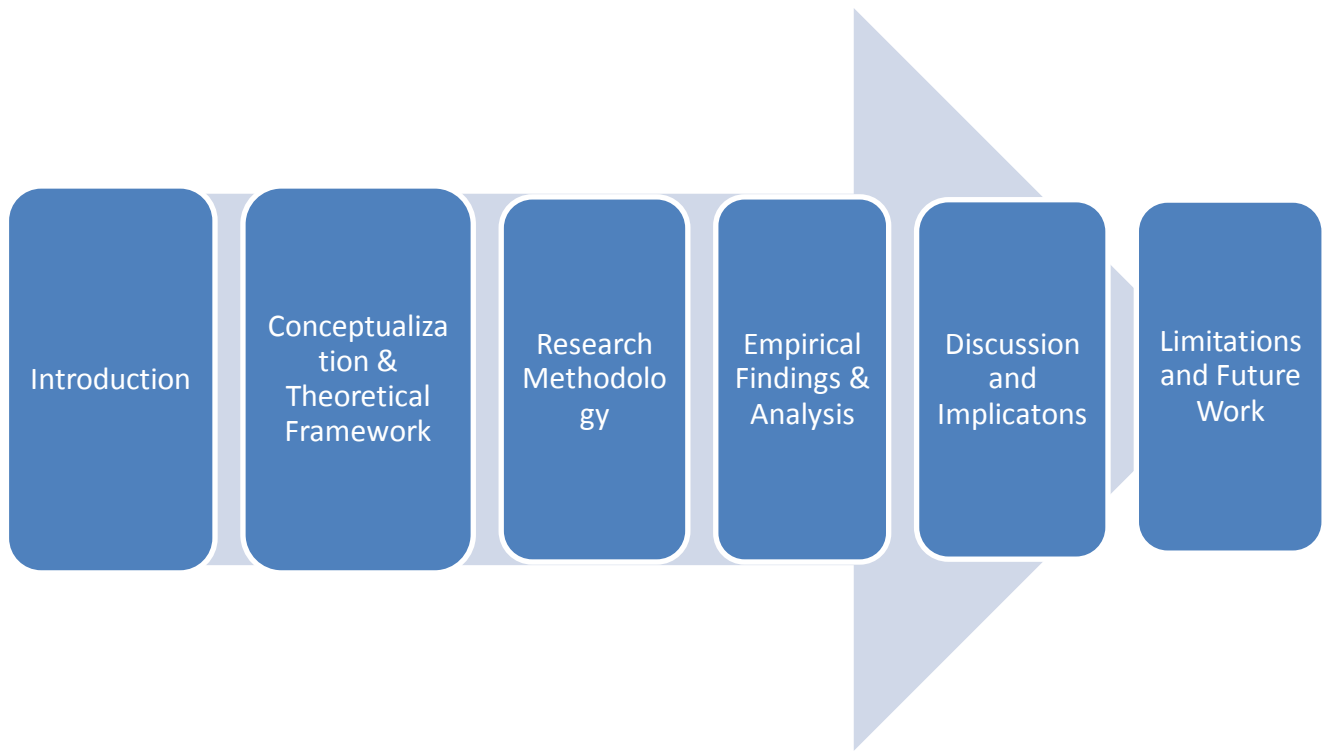


Figure 2 Thesis Outline

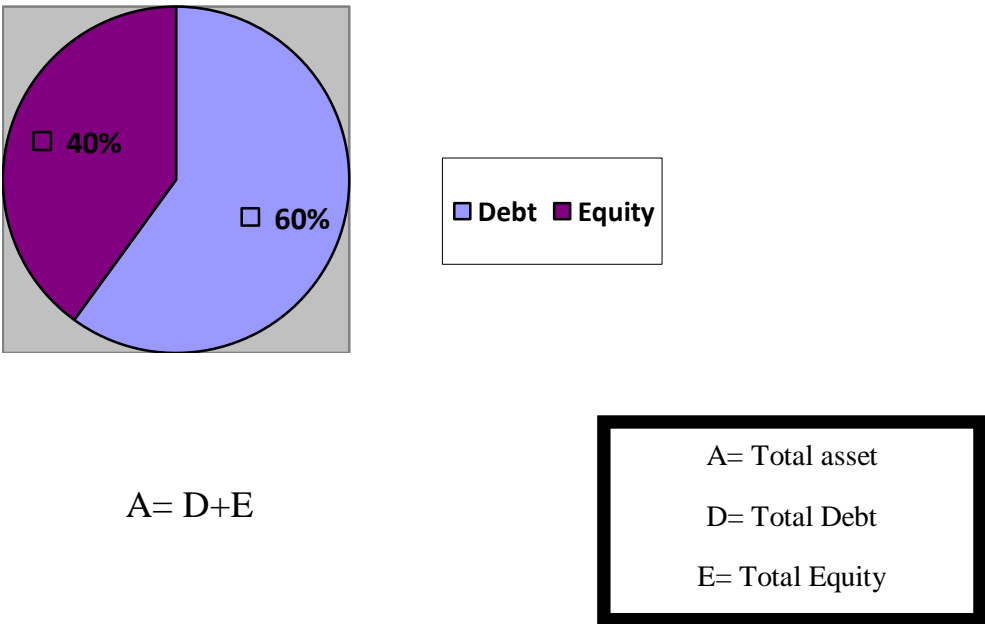
Chapter 2. Theory of Capital Structure

Since Modigliani and Miller theorem forty years ago, number of leverage relevance theories has been advanced by amendment of the perfect capital market assumptions of the original MM theorem. The theory of capital structure can be classified into three groups: tax based theories; agency cost theories; asymmetric information and signaling theories (Michaelas et al., 1999). This part aims to give a brief explanation about the capital structure, and then present the capital structure theories, which is related to this field of research.

The firm value can be seen as the discounted stream of expected cash flows generated by its assets. Investors finance the firm's assets, and they hold various sorts of claims on the firm's cash flows. Debt holders' claim on the firm's stream of cash flows is safe due to the contractual guarantees of a fixed schedule of payments. The claim of equity holders on the residual stream of cash flows is more risky, since there is no payment guarantee on equity. The combination of debt funds and equity funds (leverage) raise by the firm defines its capital structure. By considering various constraints within the firm, each firm tries to issue the particular combination of debt and equity to maximize its overall market value.

Capital structures explained how projects and plans are financed. The proportion of capital structure varies for each company. In fact, capital structure proportion determines how the profit should be divided between creditors and the company's owners. According to Ross, Westerfield and Jordan (2008), if all the assets divided into equity and debt, then the capital structure can be figured as a pie. The following figure is also helpful in explaining other concepts in capital structure like leverage and debt ratio.

Figur 3 Capital Structure



The ratio below shows the proportion of a firm's assets which are financed through debt. The ratio is called debt ratio, and if it becomes less than one then most of the firm's assets are financed by equity. If the debt ratio becomes greater than one, then most of the firm's assets are financed by debt. "Highly leveraged" term is given to the firms with the high debt/asset ratio.

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

A firm's financial leverage is calculated by dividing total debt by total equity. A high debt/equity ratio means that a firm is aggressive in financing its growth with debt. Highly levered firms are more vulnerable to downturns in their business cycles, due to their legally binding payments.

$$\text{Leverage} = \frac{\text{Total Debt}}{\text{Total Equity}}$$

Deciding about the proportion of capital structure is one of the major concerns for company's director, since it is a tradeoff between risks and costs (Ross et al. 2008). Issuing equity is expensive in compare to debt which is less expensive; however, debt generates higher risk than equity. Therefore, the principal issue in capital structure composition is to find the best proportion between debt and equity (Modigliani & Miller, 1958).

The best combination of equity and debt is the one that minimize the cost of capital, and in return maximize the value of the firms. This combination of debt and equity is called optimal capital structure. According to Modigliani and Miller (1963), enhancement in leverage would generate the interest tax shield, which increases the value for the company. However, an increase in debt level will increase the financial distress cost, and the result is a decrease in the value of the company. According to Bradley, Jarrell and Kim (1984), the optimal capital structure is the level of leverage, which gives the best balance between the tax benefit and distress cost.

2.1 Modigliani and Miller (MM)

The modern theory of capital structure primarily was developed by Modigliani and Miller (1958), with an article in *The American Economic Review*. According to Hillier et al. (2010), Modigliani and Miller theorem is: "...generally considered the beginning point of modern corporate finance..." Their irrelevance theorem argued that the firm's capital structure does not have any impact on its value. They believed that the firm value is determined based on the active side of the balance sheet. Value is generated by the earning power and risk of the underlying asset. In other words, obtaining capital from restrictive payout ratio, issuance of new equity or borrowing has the same impact on the firm's value.

The MM theorem introduced two propositions under five assumptions as following:

1. No taxes, no transaction costs, no costs of bankruptcy, no asymmetric information.
2. Homogeneous expectations.

3. All investors are price-takers.
4. The firm's investment program is fixed and known.
5. The firm's financing is fixed.

The first proposition is about the capital structure, and the second one concerns the cost of capital. The first proposition says that the value of levered firm is equal to the value of the unlevered firm. The second proposition goes hand in hand with the first proposition. The second proposition explains that the cost of equity is a linear function of the firm debt/equity ratio (Modigliani and Miller, 1958).

Modigliani and Miller (1958) developed their theorem further because there is no such an economy with the perfect capital market. In the economy with the transaction costs and taxes, capital structure composition is a significant matter. In most of the countries, taxes are deductible; hence the value of the levered firm exceeds the value of the un-levered firm. The effect of leverage generates the *tax shield* with the same value of the deductible interest of the debt. The conclusion is that if a firm wants to maximize its value then it should be financed by debt only. Therefore, the propositions were extended to contain tax shield, which affect the market capitalization and the expected return on equity.

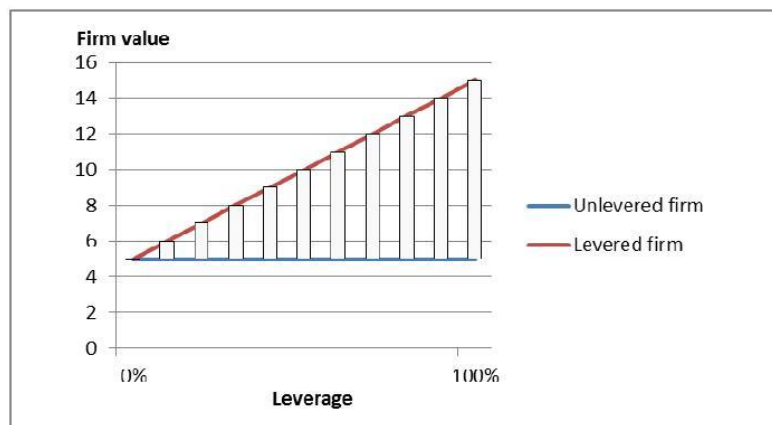


Figure 4 value of the levered and unlevered firm under MM theorem

Figure above show the value of the levered and unlevered firms. The theorem assumes a positive and linear relationship between gearing and corporate income taxation. This positive relationship is illustrated by the bars in figure 1, which indicates the interest shields of tax.

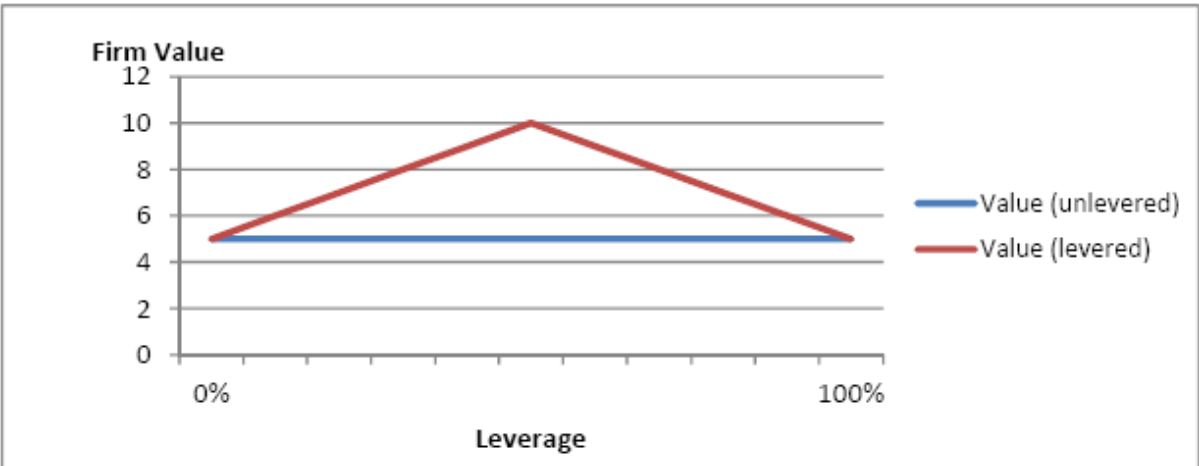
2.2 Static Trade-off Theory

Modigliani and Miller correct their initial work in 1963 after the realization of the large tax merit of debt. The tax adjusted MM theory results to an incredible conclusion that firms should use only debt to maximize their value. However, empirical evidence refuted this extreme conclusion.

The purpose of the trade off theory is to explain why firms are financed partly by debt and partly by equity. The optimal capital structure of a firm is often explained as a tradeoff between the cost and the merits of debt. The optimal capital structure occurs when the merit and cost of debt is equal. According to Jensen and Meckling (1976) cost in this theory

represented by the agency cost arising among creditors and owners and the cost of financial distress. Merit is measurable by the tax shield of debt (Myers, 1984). However, the optimal point differs from one firm to another due to the characteristics of each firm.

As mentioned above, the optimized capital structure exists when the marginal cost of debt is equal to the marginal benefit of debt. If an unlevered firm starts to adjust its capital structure to small level of leverage, this act will create a high benefit from interest tax shield without any huge increase in the distress cost. If the company increases its leverage more, the benefit would still be considerable but not as high as before. The cost of financial distress would also be high. If the rise in leverage increases, the cost of financial distress would exceed the tax shield benefit. As a result, the firm value line with regard to debt holds a hump shape curve (Hillier et al. 2010). The figure below shows the value of the firms under the trade off theory.



Figur 5 value of the levered and unlevered firm under the trade off theory

According to the trade off theory, at the point of optimal balance between the cost and the benefit of debt finance, a firm should stop increasing the D/E ratio. At the optimal D/E ratio the firm market value should be maximized and the cost of capital should be as low as possible. As mentioned before, the cost of debt is the cost of financial distress and bankruptcy. Therefore, the expected cost of financial distress in future is the cost if financial distress happens multiply its probability:

$$E(\text{Cost of Future Financial Distress}) = Pr(\text{Future financial Distress}) \cdot \text{Cost of Future Financial Distress} \tag{1}$$

Figure below shows how high level and low level of financial distress cost affects the firm’s value:

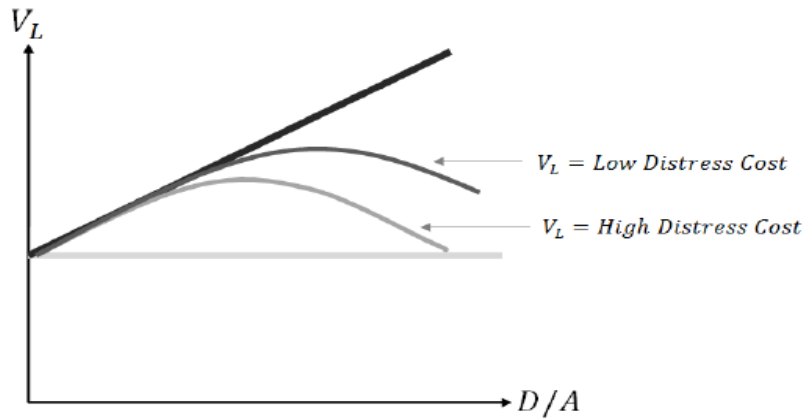


Figure 6 An amplification of the firm value line (Hillier et al. 2010)

The optimized capital structure point for each firm is related to the level of financial distress cost. The following figure shows two curves that represent the optimal capital structure. One curve is for the firm with the higher financial distress cost, and the other curve is for the firm with the lower distress cost. The financial distress cost increase when the risk of default increases and a firm would borrow less when it is in a risky condition (Myers, 1984).

Financial distress can happen at any time in future, but for simplicity it is assumed that if it happens it will be in year T. The present value of the financial distress cost is then:

$$PV(E(CFFD)) = E(CFFD) / (1 + r_{cfd})^T \rightarrow PV(\text{Financial Distress Cost}) \quad (2)$$

The likelihood of financial distress cannot be zero, even for the unlevered firm. Both types of firms can run out of cash under any circumstances. However, financial distress probability will increase with the level of debt, since debt payments are periodic fixed payment. A firm has to pay fix interest payments if the level of debt is constant, which will shorten the period until time T. therefore, the present value of the expected cost of financial distress will increase with the firm's debt burden.

The present value of the tax shield of debt can be written as:

$$\tau \cdot K_D \cdot D / K_D = \tau \cdot D \rightarrow PV(\text{Tax shield of debt}) \quad (3)$$

Where τ is corporate tax rate and K_D is required rate of return on debt.

The value of a levered firm can now be calculated as:

$$V^L = V^U + PV(\text{tax shield of debt}) - PV(\text{cost of financial distress}) \quad (4)$$

The value of unlevered firm is:

$$V^U = \text{Firm Total Value} - \text{Value of Equity Financing} \quad (5)$$

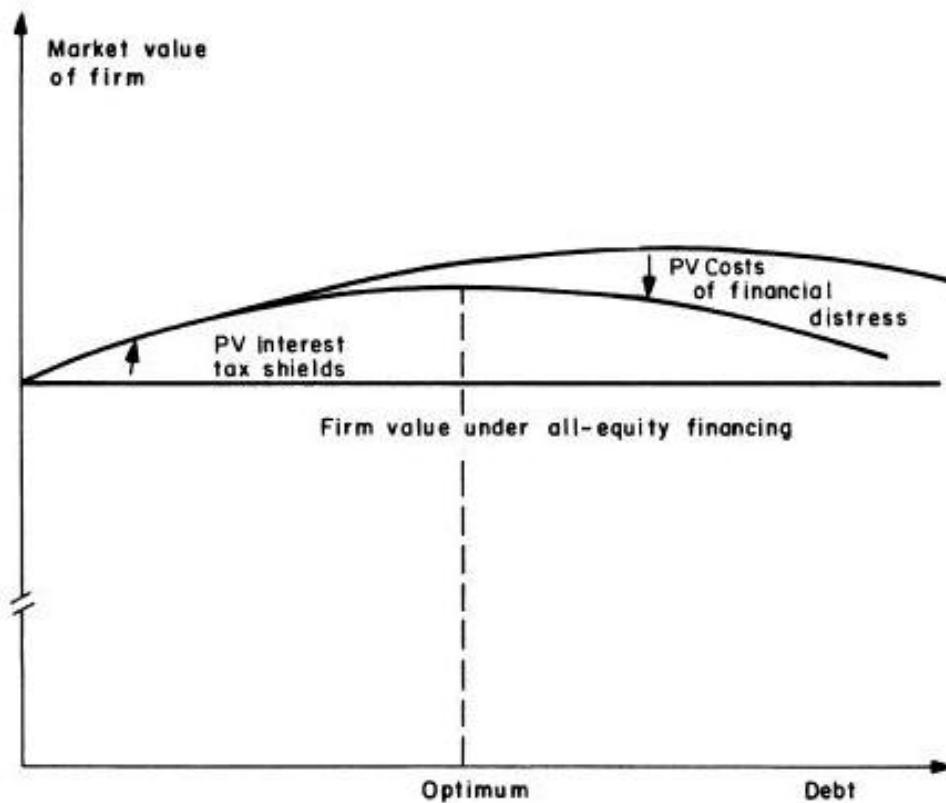


Figure 7 firm optimal capital structure

The financial distress cost differs among different industries, depends on the assets the firm own, the volatility of asset value and cash flow.

One of the advantages of this theory is about costs, which are ‘fiscally deductible’ from the company’s tax as a result of paying interests (Modigliani and Miller, 1963; DeAngelo and Masulis, 1980); the other advantage is lessening of the free cash flow problem (Jensen and Meckling 1976; Stulz, 1990). The disadvantage of debt contains the potential costs as a result of financial distress (Kraus and Litzenberger, 1973; Kim, 1978), and the agency costs occurring between the financial creditor and the company’s owner (Jensen and Meckling, 1976; Myers, 1977).

2.3 Pecking Order Theory

Myers and Majluf have developed the pecking order theory in 1984. The theory is applicable by financial managers in comparison to the trade-off theory. The pecking order theory underlying assumption is that there exists asymmetric information among the managers of the firm and outside stakeholders. It is assumed that managers who work on behalf of the company’s stakeholders have better information than the company’s stakeholder and other investors.

The pecking order theory is the order, which shows the preferences of financial managers in rising new capital. According to this theory, manager’s first choice is to use internal financing or retained earnings. Internal financing indicates that there is no need to issue debt or equity and the firm can inject its own money to finance a project. If the firm does not possess enough

internal resources, the second option will be external financing. The external financing is divided into issuing debt and equity, and there is a preference with the issuance of debt and equity. The first choice in external finance is issuing debt. Debt is a safer security and less risky than equity. The pecking order allows issuing equity when the capacity of debt is fully used (Myers and Majluf, 1984).

The consequence of issuing risky new securities as a source of external finance is under priced problem. This means that the new security might be priced under its real value. If there is too severe under pricing, the new investor will get more than the net present value (NPV) of the project, and the project will be rejected even with the positive NPV. Therefore, managers prefer to raise less risky sources of capital; for example use retained earnings before debt and debt before equity (Myers and Majluf, 1984)

According to Sunder and Myers (1994), One of the simplest forms of pecking order theory, by considering the below definitions is as following:

C_t = operating cash flows after interest and taxes
 DIV_t = dividend payments
 X_t = capital expenditures
 ΔW_t = net increase in working capital
 R_t = current portion of the long term debt at the start of the period
 D_t = long term debt out standing
 A_t = net book assets
 $D_t = D_t/A_t$ the book debt ratio

The funds flow deficit is:

$$DEF_t = DIV_t + X_t + \Delta W_t + R_t - C_t \quad (1)$$

All the components of the deficit are exogenous in the strict pecking order model, as long as safe debt can be issued. Therefore, there is no motivation to move down the pecking order model and issue equity.

The testable pecking order hypothesis is:

$$\Delta D_{it} = a + b_{PO} DEF_{it} + e_{it} \quad (2)$$

In the above equation, ΔD_{it} is the amount of issued debt or retired. In this theory $a=0$ and $b_{PO}=1$, and the pecking order coefficient is b_{PO} .

The second equation is not an accounting identity, since DEF_t does not contain equity issues. The simple pecking order argues that issuing or retiring equity is the last resort of finance.

The figure below shows how pecking order theory has been followed by the U.S Corporation among 1995 to 2008.

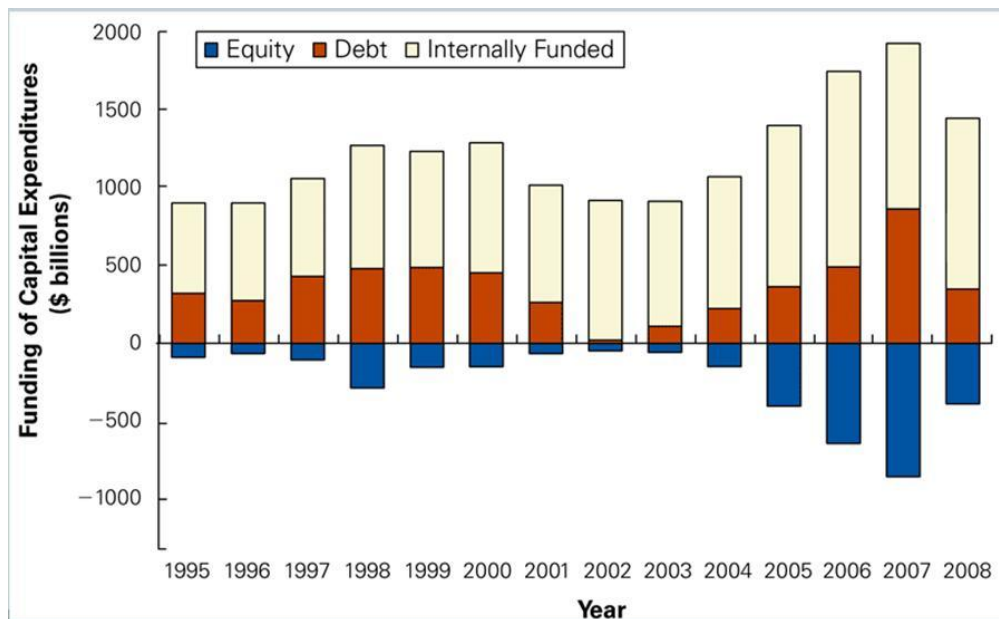


Figure 8 Source of Fund for U.S Corporation under Pecking Order Theory

2.4 Agency Cost

Agency theory is concerned with the diverging interest when the firm ownership and management are separated. The theory argues about the relationship between the agent (e.g. the manager), and the principal (e.g. the shareholders). The major assumption of this theory is that the separation of ownership and management creates conflicts among principals and agents. Emergence of the conflicts in the firm creates tension and result in high agency cost. It is assumed that the final objective of all stakeholders is to maximize their wealth. On the other side, agents may have other objective rather than maximizing principals' wealth. If the agents do not meet the principals' interests and objectives, then the conflict arise among them.

The main argument behind the agency theory is that the corporate managers act in their own interest. They are looking for job security, prerequisites, and in the worst cases getting hand on assets and cash flows. The ethics of the free cash flow theory has been built due to the agency cost approach. Managers have incentives to decrease the firm value unless the free cash flow distributes between stakeholders. Jensen (1986) argues "...*The problem is how to motivate managers to disgorge the cash rather than investing it below the cost of capital and/or wasting it on organization inefficiencies*". One solution to this problem is to apply more debt in capital structure to confine the managers. This strategy would force the firm to limit its spending or perks in order to avoid the default risk.

In regard to agency theory, Jensen and Meckling (1976) argued that there is less conflict between principals and agents in small and medium size enterprises. The reason is that in the SMEs owner and the manager is one person. According to Ang et al. (2000), family or small firms can be considered as zero agency cost since the level of conflict is low in these kinds of firms. The idea of zero agency cost is also supported by Anderson and Reeb (2003) and McConaughy (2000). They argued that the existing incentive structured in the small and medium size firms create fewer agency conflicts between different claimants. However, SMEs may experience agency cost, when the principals and agents are separated. In addition,

problems like entrenched ownership and asymmetric altruism within the SMEs may create difficulties (Gomez-Meija et al., 2001; Schulze et al., 2001). In fact, SMEs have agency cost problem when they decide to separate managers from stakeholders.

The agency cost problem is also tense in SMEs because they do not have to disclose their financial information and financial statement. Daskalakis and psillaki (2008) argued that the problem of agency cost will increase, when a firm has a high level of asymmetric information. Therefore, it is expected that small businesses experience a greater agency cost since the manager of the business gives the first priority to his own interest. On the other side, solutions for agency cost problem in SMEs are more expensive than in large listed companies. Monitoring process in SMEs is harder than listed firm. Moreover, rules and regulations force large companies to be transparent about their financial activities while SMEs are free from any financial disclosure.

It is tempting to conclude that SMEs have fewer conflicts; hence they are able to minimize the agency costs. However, contrasting views have suggested that SMES are experiencing conflicts which make them vulnerable. In fact, existence of conflicts may paralyze SMEs to make a decision and threaten the firm survival (Schulze et al., 2003). SMEs may raise more debt in order to control the self- interests of the agents, and to limit the negative consequences of altruism within the firm. According to Schulze et al. (2003) altruism results in the problem of free ride.

Schulze et al. (2003) argued that the phenomenon of altruism shows how the agency problem becomes more apparent in SMEs if they do not allocate the resources properly. Therefore, the level of the agency conflict becomes a decisive factor that affects the capital structure of the SMEs. The idea of higher level of agency cost in SMEs is also supported by Gomez-Mejia, Nunez-Nickel and Gutierrez (2001).

2.5 Asymmetric Information Cost

Various approaches explain the capital structure combination due to the existence of private information. In theories, it is assumed that the insider or the firm managers have information about the firm's return stream. One set of approaches explains that choice of the firm's capital structure is like a signal to outside stakeholders. This signal conveys information from insiders to outside investors. This set of research started by the work of Ross (1977) and Leland and Pyle (1977). The other set of approach is that capital structure is shaped to decrease the inefficiencies in the firm's investment decisions. Myers (1984) believed that inefficiencies in investment decisions happen due to the information asymmetry among insiders (managers) and outsiders (creditors and investors).

An asymmetric information phenomenon provides a highly destructive situation because the well informed group has the power to take advantage of situation (Harris and Raviv 1991). Problems associated with asymmetric information are as following:

1. Adverse selection, which is happened before transaction

2. Moral Hazard, which is happened after transaction

Barnea et al. (1980) argues that small companies are more likely to deal with asymmetric information. SMEs face the information asymmetry cost more often than listed companies. Having a higher level of asymmetric information cost in SMEs relates to the rules of publishing financial statements. Outsider investors prefer to have an audited financial statement. However, there is no obligation for having a published audited financial statement for SMEs. Some SMEs may provide financial statement, but its quality could not be the same as the large companies. Therefore, managers in SMEs have a right not to be transparent about their companies' financial facts, which increase the information asymmetry cost.

The significant conclusion from the asymmetric information theories is the pecking order hypothesis (Michaelas et al. 1999)

Chapter3. Determinants of Capital Structure and Hypothesis

In the previous chapter, I discussed the theories which are related in shaping the hypothesis between the firm's characteristics and its capital structure. The following chapter explains the firm's characteristics, which, according to literature, is believed to have an impact on the firm's capital structure decisions.

According to Michaelas et al (1999), the key reference of this thesis, the main determinants that have the effect on both short term and long term debt in the SMEs are size, age, profitability, growth and future growth opportunities, asset structure net debtors, stock turnover and operating risk. Moreover, they suggested that the industry where the SMEs operates in and time have an impact on maturity structure of debt in SMEs. Economic condition has also impact on the level of debt. For instance, the average short term debt ratio in small and medium size company happen to be increasing while the economy is in recession, and it will decrease when economic condition improved.

To be able to analyze the impact of the determinants on capital structure, according to the work of Michaelas et al. (1999), two independent variables were selected. The independent variables are short-term debt to total assets and long-term debt to total assets. The main reason for not choosing total debt to total asset ratio is the work of Van der Wijst and Thurik (1993) and Chittenden *et al.* (1996). They have shown in their papers that the impact of the explanatory variables on total debt is a net effect of the opposite effect on both long and short term debt. Therefore, it would not possible to analyze the impact of a determinant (dependent variables) on a decomposed leverage level. The determinants are presented in the following order: size, growth, profitability, age, risk, and asset structure.

The following table describes other similar empirical works by scholars. It is necessary to mention that the above authors used different dependent variables like short term debt, long term debt or total debt.

Hypothesis	Firm's characteristics	BJK	KS	TW	C	HZB	RZ	CHH*	FG	FF	SG*	S*	My Sign
H1/H2	Size		0	-	-	+	+	-	+	+	+	+	+
H3/H4	Growth		0	+	-	-	-	+		-	+	+	+
H5/H6	Profitability			-			-	-	-	-		-	-
H7/H8	Age							0			-		+/-
H9/H10	Risk	-	+	-	-	-							-
H11/H12	Asset structure		0	+	-		+	-	+			+	+

Figur 9 Previous Empirical Works

The following initials are used for the authors: BJK for Bradley, Jarrell and Kim (1984), KS for Kim and Sorensen(1986), TW for Titman and Wessels(1988), C for Chung(1993), HZB for Homaifar, Zietz and Benkato(1994), RZ for Rajan and Zingales (1994), CHH* for Chittenden, Hall and Hutchinson(1996), FG for Frank and Goyal(2003),FF for Fama and French (2002), SG* for Sogorb-Mira and López-Gracia (2003), and S* for Sogorb-Mira (2005)

3.1 Firm Size and Short Term and Long Term Debt

There exist different points of view about the relationship between the level of debt and the firm size. Modigliani and Miller (1958) suggested that there is no relationship between size and level of debt, keep in mind that this result is reliable with the market efficiency hypothesis. However, numbers of authors arguing that the negative or positive relationship among the two concepts is vast.

According to Heshmati (2001), listed companies have easier access to the equity market, in compare with the smaller companies, because of low fixed costs. Therefore, there should be a negative relationship between the firm size and the debt level. Fama and Jensen (1983) argued that transaction cost and asymmetric information problem are lesser in large firms in compare with small firms. Therefore, it is expected that large firms prefer to raise fund from equity rather than debt. Small firms often find costly to disperse asymmetric information. Financiers are not willing to offer small firms capital, or the price of the offered capital is too high for small firms (Ferri and Jones, 1979). Another reason, which makes small firms reluctant to use outside financing, is the market access limitations. In many cases, the minimum volume of capital is required in order to raise external fund (Cassar and Holmes, 2003). This idea is supported by empirical evidence that concludes small firms often forced to use internal source, and then short-term debt contracts due to the limited access to the long term financing (Osteryoung *et al.*, 1992; Chittenden *et al.*, 1996; Michaelas *et al.*, 1999).

Many authors have suggested a positive relationship between a firm leverage and its size (Fama and French, 2002). Warner (1977) and Ang *et al.* (1982) stressed out, that when the value of the firm increases; the ratio of direct bankruptcy costs to the firm value would decrease. The effect of these expected bankruptcy costs might be little on large firms' borrowing decisions, which empower them to take on more leverage (Rajan and Zingales, 1995). On the other side, smaller firms face a different reality in raising the long term debt. Asymmetric information is not the main reason, but the reason is the significant negative correlation between firm size and the probability of bankruptcy (Berryman, 1982; Hall *et al.*, 2004). One explanation could be that relatively large firms tend to be more diversified; therefore, they are less prone to insolvency (Titman and Wessels, 1988). Chittenden *et al.* (1996) believed in the large companies the cost of monitoring is much lower than small firms. They argued that moral hazard and adverse selection problems are decreased reasonably in large companies, subsequently using debt as an external funding is much better in listed companies than SMEs. Hence there is a positive relationship between the level of debt and the firm's size.

Clara Cardone-Riportella *et al* (2001) stressed out that there is a positive relationship between borrowing and size of the firm. Later on Daskalakis and Psollaki (2008) found three reasons to confirm the positive relationship between level of debt and the firm size. Firstly, they found that there is a strong relationship between the size of the firms and the risk of bankruptcy. This means a large company has a lower risk of default than small firms. Secondly, listed companies might be able to incur lower transaction costs associated with debt. Thirdly, they found out that due to transparency and accuracy in a large company the cost of information

asymmetry is lower than in SMEs.

In the static trade-off theory, the cost of financial distress represents the cost of debt, and finally the probability of bankruptcy. It is assumed that large firms are less likely to default because they are more diversified than smaller firms; therefore, large firms should have a greater debt capacity (Titman and Wessels, 1988).

To be able to test how a firm size influences the debt level, the following hypotheses are proposed:

H1: There is a positive relationship between size and Long-term Debt

H2: There is a positive relationship between size and Short-term Debt

3.2 Firm Growth and Short Term and Long Term Debt

According to Jensen and Meckling (1976) and Myers (1977), an argument is going on from the traditional tax bankruptcy cost towards regarding the agency cost as the main determinants of the firm gearing. Agency cost is significant because it arises from the conflict between shareholders and bondholders. The signal of the agency model is that conflicts make incentives for shareholders take action to benefit them. However, these actions are at the expense of bondholders, and it might not always maximize the firm value. On the other hand, debt holders, in order to protect themselves, use different types of protective covenants and monitoring devices. According to Myers (1977), conflict exists in many firms, but it becomes significant for assets that provide a firm with the growth opportunities in the future. The firm would be financed with less debt if the firm investment concentrated on such assets. Therefore, there should be a negative relationship between growth opportunities and level of debt. Myers (1997) stressed out that the agency problem would be decreased if the firms issued short term debt instead of long term debt. Therefore, short term debt ratios could be positively correlated to the growth rate if the firm applies short term financing for long term financing. Myers (1977) propositions are also suitable in the context of SMEs.

Hall et al. (2000) argued that there is a positive relationship between gearing and growth since it makes incentive for companies to borrowing extra fund to expand their investment. According to Jordan et al. (1998) the positive correlation between growth and capital structure is acceptable. Moreover, Michaelas et al. (1999) stressed out that there is a positive correlation between level of debt and future growth especially with short term debt. Therefore, the agency and bankruptcy cost may decrease if the firm has short term debt more than long term debt.

Myers and Majluf (1984) believed that there is a positive relationship between growth and the debt financing, due to the assumptions of pecking order theory, and existence of information asymmetric. They argued, that new issued securities might be under priced, which give the new investors a value more than the NPV. Therefore, the project will be rejected, even with the positive NPV. They conclude that managers prefer to use less risky source of finance, to fund their expansionary investment projects.

Based on these facts the following hypotheses are proposed:

H3: There is a positive relationship between Growth and Short-term Debt

H4: There is a positive relationship between Growth and Long-term Debt

3.3 Firm Profitability and Short Term and Long Term Debt

Pecking order theory is totally consistent with SMEs behaviour in terms of composition of their capital structure. SMEs are more willing to use their internal fund rather than looking for external funds. As Myers (1984) explained, firms with the ability to generate acceptable amount of profit and earnings are tend to use their own internal source of funds to finance their project. Therefore, it can be concluded that there is a negative relationship between the firm profitability and the level of leverage. This conclusion is compatible with pecking order theory and other relevant studies like Cassar and Holmes (2003).

However, there some established theories believed that a positive relationship exists between profitability and leverage. For instance, Prasad et al. (2001) argued that the market is not willing to finance companies with low level of profit. Tong and Green (2005) pointed out, that first of all there is a considerable negative relationship between profitability and gearing. Secondly, they understand that there is a positive relationship between past dividend and current debt level. Their findings are hugely consistent with pecking order theory. Finally, due to their findings, there is a weak negative correlation between past dividends and growth of investment.

Pettit and Singer (1985) argued that the agency cost and the problem of information asymmetry have influence on the availability and the cost of credit for SMEs. They believed that small firms have a higher level of information asymmetry than large firms, due to the quality of their financial statement. SMEs find the price of audited financial statement expensive, and they are reluctant to provide formal financial information to outsiders. As mentioned before, the main conclusion of asymmetric information theories is pecking order hypothesis (Myers, 1984). Therefore, firms finance their projects in a hierarchical manner. This preference, due to the existence of asymmetric information, shows the relative costs of different source of finance. Therefore, it is reasonable to conclude that the first choice of finance for profitable firms is retained earnings, then debt, and finally equity. According to Pettit and Singer (1985), pecking order hypothesis is relevant for SMEs, because the cost of external fund is higher for them rather than large firms.

Furthermore, according to Michaelas et al (1999), stock market volatility could widen the firm's ownership share. This flotation could result in loss of control by the original owner, or even lead to a takeover. In this situation, the SMEs rational response would be to avoid the use of external finance, and only rely on internal source of finance. Hence the next hypotheses are:

H5: There is a negative relationship between Profitability and Short-term Debt

H6: There is a negative relationship between Profitability and Long-term Debt

3.4 Firm Age and Short Term and Long Term Debt

Jani et al. (2005) argued that the life cycle of the firm influences the debt level. Dollinger (1995) stressed out that the developing firms are more likely to finance their project with retained earning rather than external fund. He argued that developing firms face difficulties in reassuring the creditors to provide them with funds; hence they are more willing to use their internal source. However, the case is otherwise for the mature companies; since they have proved their ability to staying alive and becoming mature in the competitive market.

In contrast, Van Der Wijst(1989) argued that older firms are using less debt to raise fund in compare with their younger counterparts. Dollinger (1995) stress out that the firms' condition can influence on the level of debt. For example, mature firms are more likely to use equity instead of debt, and the vice versa for developing and small firms. Young and small firms prefer to use internal sources like trade credit, family loans instead of external source.

As the number of years increase since a firm starts its operation, the amount of accumulated funds accordingly will increase. Therefore, older firms are less likely to use external funding since they can use their internal funds to finance their projects. On the other side, young firms may not have access to a sufficient amount of internal funds, and they are more likely to use external financing.

Petersen and Rajan (1994) show that as the firm spend more time with the bank, the availability of finance from the bank will increases. In fact, the established banking relationships increase the availability of external finance and reduce the cost of credit for companies. Therefore, when the age increase the amount of external finance will increase. However, Petersen and Rajan argued that long term debt decreases with age because the older firms tend to use the accumulated retained earnings. Therefore, there should be a negative relationship between age and long term debt.

Pecking order theory provides support in shaping the below hypothesis. Considering the above argument these hypotheses are suggested:

H7: There is a positive relationship between Age and Short-term Debt

H8: There is a negative relationship between Age and Long-term Debt

3.5 Firm Risk and Short Term and Long Term Debt

SMEs by nature are riskier than the larger companies. Cassar and Holmes (2003) mention in their work that the characteristics of SMEs like higher agency and bankruptcy cost encourage these firms to avoid the tax benefits of debt. When the firms become exposed to these sorts of costs they would get more motivation to decrease their level of debt financing, which might

cause bankruptcy in SMEs. Operational risk is one of the most serious risk that affect SMEs. Thus, the firms, which face higher level of operational risk, are more likely to have a lower level of debt finance.

The hypothetical literature claims that the relationship between level of the risk and gearing is negative. Deangelo and Masulis (1980) argued in their study that increasing the level of the debt will increase the chance of bankruptcy. Investors prefer to invest in the firms, which have less variability in their earning. According to DeAngelo and Masulis (1980) firms with higher risk have a lower level of debt in its capital structure. Leverage increases the firm's probability to default on its debt obligations. According to Myers (1984), risky firms should borrow less and *ceteris paribus*.

According to Cassar et al (2003) using debt will bring tax shield benefits, but bankruptcy and agency costs make enough incentives for firms not to use debt to raise funds. Various authors (Bradley et al., 1984; Kester, 1986 and Titman and Wessels, 1988) argued that an optimal level of gearing in a firm is a decreasing function of the volatility of earnings, due to the bankruptcy and agency cost. Volatility of earnings is a measure of the operating risk. Michaelas et al (1999) pointed out that the fluctuation of the firm's future income is the cornerstone for anticipating the firm's ability to meet the fixed charges. Therefore, a firm may anticipate that operating risk is negatively related to the amount of the debt in a firm capital structure.

Therefore, the following hypotheses are proposed:

H9: There is a negative relationship between operational risk and Short-term Debt

H10: There is a negative relationship between operational risk and Long-term Debt

3.6 Firm Asset Structure and Short Term and Long Term Debt

Asset structure of the firms is one of the factors that contribute in shaping the level of debt. According to Harris and Raviv (1988), the firm level of tangible and generic asset result in the higher liquidation value of the firm. As an example, Storey (1994) argued that, in many cases, banks prefer to lend money to those firms with more tangible asset to secure their funding. According to the previous studies such as in Cassar and Holmes (2003), one of the crucial determinants of capital structure of SMEs is the structure of the assets in these firms. If a firm has more tangible assets it would decrease the probability of default since the liquidation of the firm increases subsequently. Therefore, firms are less probable to be bankrupt after using the debt financing, which in turn decrease the debt financing cost and encourages the firms to increase the debt level.

Barnea et al. (1981) believed that there is a direct positive relationship between the agency problem and the level of asymmetric information. When the level of asymmetric information is high, the agent has the capacity and motivation to transfer wealth among the parties. The agent partial ownership let him use the firm's assets, and pay less than the sum of the

individual cost to the principals. Barnea et al. (1981) argued that the agency cost is higher in SMEs because the owner of a small firm has a tendency to follow his own interest prior to other stakeholders. In addition, agency problems solutions are expensive for SMEs, which increase the cost of transaction between SMEs and its stakeholders. Monitoring is even more difficult and expensive for the SMEs because small firms are not required to disclose much of the information. Therefore, providing audited financial information causes a significant cost for SMEs. Adverse selection and moral hazard problems are also more severe for SMEs than large firms, because of their closely held characteristics.

The solution to avoid all the above mentioned cost is to raise debt which is secured by the known value property. Stiglitz and Weiss (1981) stressed out that banks respond to moral hazard and adverse selection problems by asking for collateral. According to Binks et al. (1988) in many countries lenders seeking for collateral or lenders only offer secured loans. Therefore, firms, which have fixed assets with a strong collateral value, have an easier access to raise external finance. Accordingly, due to the availability of collateral, these firms have a higher level of debt rather than firms with lower value of collateral. The following hypotheses are shaped to analyze whether the above discussion holds true or not:

H11: There is a positive relationship between Asset structure and Short-term Debt

H12: There is a positive relationship between Asset structure and Long-term Debt

Table below explain the hypotheses, which this thesis aims to test it. Each hypothesis describes one capital structure determinants that is associated with trade off theory or pecking order theory.

<i>Proposed hypotheses</i>	<i>Theories</i>
There is a positive relationship between Asset structure and Short-term Debt	Trade Off Theory
There is a positive relationship between Asset structure and Long-term Debt	
There is a negative relationship between operational risk and Short-term Debt	
There is a negative relationship between operational risk and Long-term Debt	
There is a positive relationship between size and Long-term Debt	
There is a positive relationship between size and Short-term Debt	
There is a positive relationship between Age and Short-term Debt	Pecking Order Theory
There is a negative relationship between Age and Long-term Debt	
There is a negative relationship between Profitability and Short-term Debt	
There is a negative relationship between Profitability and Short-term Debt	
There is a positive relationship between Growth and Short-term Debt	
There is a positive relationship between Growth and Long-term Debt	

Figur 10 Description of Tested Hypotheses

Chapter4. Methodology

4.1 Methodology; Qualitative and Quantitative

Research method briefly tells how and on what grounds this thesis reach conclusions. In social science method can be divided into two categories: qualitative research method and quantitative research method. Qualitative research collections of findings enable new unique non-quantifiable insights about opinions, behaviors, events, social environment and relationships (Ghuri and Grønhaug, 2005). On the other side, researcher in the quantitative method, collects data and findings from statistical methods and other quantification procedures (Ghuri and Grønhaug, 2005). Quantitative method enables studies to explain phenomena by collecting numerical data. Researcher applies mathematical based methods to analyze the data (Aliaga and Gunderson, 2003). Creswell (1997) defined a quantitative research as:

“...an inquiry into social or human problems, based on testing a theory contains variables, measured with numbers and analyzed with statistical procedures in order to determine whether the predictive generalizations of the theory hold true...”

The purpose of empirical or quantitative research is to develop hypothesis, theories and apply the statistical measures to assess the phenomena. Quantitative methods are deductive, and the hypotheses are shaped by the data and information. Conclusions in deductive research draw from logic reasoning. Hypothesis will check empirically, and it might be accepted or rejected. Deductive research usually aligns with quantitative research (Ghuri and Grønhaug, 2005).

The other common method in social and behavioral science is qualitative research method, which typically uses words. This method is suitable for studying organizations, individuals and groups (Strauss and Corbin, 1990). Qualitative method tries to understand the phenomena in the context of economics, politics and sociology. A very common example of qualitative research is a case study, which typically focuses to understand only one case. In fact, focusing on a few subject or individual is the main disadvantages of this method. Qualitative researcher applies different approaches to gather data like ground theory practice, storytelling, group discussion, observation and interviews. Inductive research is most of the time associated with the qualitative research. According to (Bryman and Bell, 2003), in inductive approach conclusions deduce from empirical observation. In this research, observations provide background for the findings, and the outcome of research is theory. Figure below is showing the difference between qualitative and quantitative methods:

Qualitative Method	Quantitative method
Importance is given to understanding i.e. theory is developed	Importance is given to testing and verification i.e.

	Theory testing is done.
Typical researches questions involve are what, why?	Typical research questions involve how many?
Dependant on the context	Context free.
Uses a rational and integration based approach	Uses a logical and critical approach
Observations and measurements are made using natural settings.	Usually a controlled environment is followed
Researcher is part of the process	Researcher is separate
Orientation is exploring	Mainly focus is on hypothesis based testing
Process oriented approach is used	Result oriented approach is used

Figure 11 Comparison between Quantitative and Qualitative Method

4.2 Research Methodology in the Present Study

The purpose of this paper is to determine the relationship between independent variable(s) and dependent variable. Hence, the quantitative research method is the well suited method for this study. This study aims to develop hypothesis and theoretical framework, which can only be examined by quantitative measures. The other reason for selecting this method is the support of numerous literatures on the relevant studies, where they employ quantitative methods to investigate their research problems and verify their hypothesis.

4.3 Sampling and Data Collection

- SMEs Description

Definitions of SMEs vary among the literature. Some scholars use the number of employees in the firm as an indicator to distinguish small firm from large firms. Michaelas et al. (1999) describe SMEs as a firm with employees less than 200 in his research. On the other hand, Jordan et al. (1998), choose the level of the firm's turnover as an indicator for selecting SMEs. In their research, they defined SMEs as a firm with earnings less than 15 million dollars per year. Other scholars also apply they own indicators to defined SMEs in their research; hence there is no general consensus about the definition of SMEs. However, this study uses the SMEs definition, which is recommended by Iran Chamber of commerce in 2003. Therefore, SMEs are the firms with the turnover less than 10 million dollars a year, and employees less than 250.

- Data Collection Process

According to (Ghuri and Grønhaug, 2005), “*research design provides a plan or a framework for data collection and its analysis, which contains the research method and the priorities of the researcher*”.

The main data source of this paper is the Iran chamber of commerce database. The access to the database is not alike for everyone, and it depends on the scope of the research. According to this restriction, the accessible database for this research was limited to 4,000 Iranian SMEs over the five years of 2006 to 2010. The collected data are from the balance sheet, profit loss

accounts. Specifically I have chosen firms with the turn over less than 10 million USD in sales, and less than 250 employees. From the total sample, I have excluded the subsidiary companies from their parents companies because the aim of this thesis is to examine the independent firms. Considering the subsidiary firms would only create noise and potential measurement errors, since the whole investigating is about external financing. Moreover, I have excluded firms in the financial sector, and firms with inconsistent or extreme figures to avoid further noise and measurement errors. To be able to exclude the negative equity firms, I used the measurement as all debt-to-asset ratios should be to be larger than 0 and less than 1. Besides, I excluded firms that their fiscal year is varying from the calendar year; in order to create a data set with the same point in time to control the time fixed effects. Firms who did not publish data for more than 2 years were also excluded. The definitive number of firms after all the mentioned adjustments is 201 firms resulting in 8,040 observations.

2006 was the last year in the data base that I could find comprehensive data for my thesis. The good point about the selected time boundary is that it includes 2008. The recent global recession occurred in 2008 in which firms tried different financial policies to prevent bankruptcy. Including this year in the sample, makes this research capable of investigating the influence of the financial crisis on the Iran SMEs capital structure. The total number of observation in the period of five years is around 8,040, although the actual number of observation might become less than 8,040 in the process of regression.

In the Iran, manufacturing industries are homogeneous and normally reflect the same behavior toward financing. In the present study, all firms are selected from the most of the manufacturing industries because they are practicing in the quite similar economic condition. Therefore, it is easier to generalize their financing behavior attribute to all the industry.

4.4 Selection of the Variables

Variables in this study are selected according to the work of Michaelas et al. (1999) and Hall et al. (2004). The independent variables are growth, asset structure, age, size, operational risk and profitability. These independent variables are approved by the relevant literatures as the suitable indicators for both SMEs and large firm's capital structure. Some studies suggest tax factor as an indicator for listed companies' capital structure studies. However, in the case of SMEs due to their characteristics tax indicator would not be suitable and is excluded from independent variables in this study.

To define the dependent variables, the maturity structure of debt is considered. In order to put emphasize on the effect of each independent variables on short term and long term debt separately. As it was suggested in previous studies, SMEs are normally having different idea about the short term and long term financing. SMEs are not willing to use long term financing since it would increase the chance of bankruptcy. However, short term financing is not always at hand, and it depends on the market condition. Each explanatory variables impact short term and long term debt in different ways, hence these categories should be analyzed separately.

4.4.1 Independent Variables

The book value of observation in this paper was chosen as a value in order to estimate the variables. The formats of the selected variables are normal for the entire SMEs capital structure indicator except for the size. I used the logarithmic format for the size variable to avoid the problem of outliers in the regression process. Michaelas et al. (1999) argued that the value of the size variable fluctuates drastically, which causes a problem in regression analysis. According to Sogorb (2005), using the logarithm form of the size variable not only controls the outliers in the analysis, but also would prevent the problem of Heteroskedasticity. The Heteroskedasticity problem reduces the validity and reliability of the regression analysis.

- **SIZE** = Total assets (pounds sterling). (Titman and Wessels, 1988)
- **OPERATING RISK** = Operating risk is defined as the coefficient of variation in profitability over the whole period (Titman and Wessels, 1988).
- **ASSET STRUCTURE** = Ratio of tangible asset (both fix and current assets), to total assets (Chittenden et al., 1996 and Michaelas et al., 1999).
- **GROWTH** = Percentage increase of sales turnover (Hall et al., 2004).
- **AGE** = 2010 less the year of incorporation. (Hall et al., 2004)
- **PROFITABILITY** = Ratio of pre-tax profits to sales turnover. (Titman and Wessels, 1988)

In this study, I selected variables according to the relevant literatures. Variables are in the form of proxies, and they will be estimated based on the available information in the database. For example, Fixed Asset, Total Asset, Turn Over and Retained Earnings are directly derived from the Iran chamber of commerce data base. By implementing the particular relevant ratios, illustrated in the below table, supposed variables are obtained for the regression analysis. In addition, Age is the only non-financial variable at this stage which was calculated by deducting the year of incorporation from last year of observation, 2010.

hypothesis	Determinants	Proxy	Denomination
H1/H2	Size	Variance In Net Income	Size
H3/H4	Growth	Tangible Assets/Total Assets	Growth
H5/H6	Profitability	Log Total Assets	Profit
H7/H8	Age	Age	Age
H9/H10	Risk	Growth In Revenues	Growth
H11/H12	Asset Structure	EBITDA/Turnover	Tangibility

Figur 12 Explanatory Variables Proxy

4.4.2 Dependent Variables

As mentioned before, the purpose of this paper is to investigate the effects of determinants of capital structure on Iran SMEs borrowing behavior. In order to reach this purpose, the capital structure indicators will be regressed against the debt level of SMEs as dependent variable. Moreover, according to Michaelas et al. (1999), the financing attitude of SMEs usually varies against of the long-run and short-run finance. For example, SMEs asset structure is more volatile in compared with their larger counterparts. However, SMEs normally prefer to use short-term financing over long-term financing as it is less likely for them to go bankrupt.

Sample data in this thesis also confirms that most of the SMEs only apply the short-term debt as external financing. Number of SMEs using long term debt in the sample is few. Therefore, the first priorities of SMEs are short-term debt unless it is an exceptional condition. Considering this characteristic of the SMEs, and making the results reliable and descriptive, the maturity structure of debt (short-term debt and long-term debt) will be applied in this thesis. Hence the two dependent variables are as following, and the regression analysis would be carried out separately for each of them.

- **SHORT TERM DEBT RATIO** = Short term debt to total assets
- **LONG TERM DEBT RATIO** = Long term debt to total assets

Short term debt comprises the firm's total debt repayable in one year or less, such as current liabilities, bank overdrafts and bank loans. Long term debt is the firm's total debt which is repayable beyond one year. This includes long term liabilities and long term bank loans, such as leasing obligation, directors' loans and hire purchase. The dependent variables in this study can easily be calculated by dividing the short-term and long-term debt by total assets. All the components of the short-term and long-term debt along with total assets are collected from the Iran chamber of commerce database.

4.5 Panel Data Analysis

Buse and Hess (1983) applied time series method to conduct their empirical research on capital structure. However, other scholars mostly use cross section data in later years (Bradley *et al.*, 1984; Kim and Sorensen, 1986; Titman and Wessels, 1988; Rajan and Zingales, 1995). In the recent years, the panel data analyzed have been selected by many authors in capital structure studies (Michaels *et al.*, 1999; Sogorb-Mira and López-Gracia, 2003; Frank and Goyal, 2003). Panel data method brings more advantage over time series and cross sectional methods, and it is beneficial in economic researches. Panel data method is a combination of time series and cross sectional. In fact, panel data is multi dimensional data, which includes observation on multiple phenomena over various time periods for the same firm. Since this method has a vast amount of data points, the degree of freedom increases and collinearity in the independent variables decreases (Hsiao, 1985).

The advantage of combining cross section and time series data is that it enables the researcher to control the individual effects and time effects. These two effects can be unobservable and correlated with the independent variables in the model (Hausman and Taylor, 1981). In the present paper, panel data method helps me to control the firm's heterogeneity and reduce the collinearity between the independent variables. The general regression model of panel data is written as following:

$$y_{it} = \alpha + \beta' X_{it} + u_{it}$$

Where X_{it} , $i=1...N$ and $t=1 \dots T$

In this thesis, X_{it} is 201 firms with six matrixes including all the explanatory variables. β is the coefficients which is used as determinants of capital structure, and U_{it} is an error term. In

this model, i stands for the cross section of the data ranging from 1 to 201, and t indicates the time-series dimension of the data ranging from 1 to 5 (2006-2010).

4.6 Proposed Regression Model

In this paper, six indicators of firms' capital structure, Size, Age, Growth, Asset Structure, Profitability and Operational Risk will be regressed against two dependent variables of the study, short-term debt and long-term debt ratios, through the panel data analysis method. The regression model as below shows the variables arrangement:

$$Y_i = \alpha_i + \beta_{1i}(\text{Size})_i + \beta_{2i}(\text{Age})_i + \beta_{3i}(\text{Asset Structure})_i + \beta_{4i}(\text{Profitability})_i + \beta_{5i}(\text{Operational Risk})_i + \beta_{6i}(\text{Growth})_i + \varepsilon$$

$i = 1, i = 2$

- $Y_1 = \text{Short-term Debt Ratio}$ $Y_2 = \text{Long-term Debt Ratio}$

The six explanatory variables regressed against the two dependent variables. The analysis will conduct by considering the effect of each explanatory variable on the two dependent variables. The obtained result would be considered in term of magnitude of the coefficients and signs in order to check the compatibility of the result with the previous studies. The next chapter aims to provide the detailed descriptive about the regression analysis.

Chapter 5. Empirical Findings and Analysis

As it was mentioned in the previous chapters, SMEs decisions towards the choice of long term and short term debt is different, due to their borrowing attitudes. Therefore, the result of this empirical research will be represented in the different debt categories. The analysis will be carried out to find out the difference between the impact of SMEs capital structure on short term and long term debt. Coefficient (β) and p -value are used in order to interpret the results of the regression model. Two regression models are design, one with short term debt as dependent variable and the other one with long term debt as dependent variable. Accordingly, two separate tables describe the statistical findings of the data. It is necessary to mention that as this thesis use the sample of almost 201 firms over five years. The most appropriate method of analysis for this research is panel data random effect analysis, which will be carried out by using SPSS software.

5.1 Descriptive Data

This section describes the characteristics of my data. The table contains Mean, Median, Standard Deviation and Max and Min for each variable to give a simple summary of how variables are distributed.

Variables	Mean	Median	SD	Max	Min
Y1	0.251	0.288	0.133	0.499	-0.989
Y2	0.029	0.014	0.044	0.985	0
Risk	0.003	0	0.03	0.982	0
Asset Structure	0.318	0.272	0.243	0.999	0
Size	9.963	9.954	1.026	12.504	4.852
Age	2.87	2.892	0.641	4.737	0.739
Growth	0.139	0.077	0.4	9.243	-0.961
Profitability	0.085	0.07	0.095	0.9	-1.903

Figure 13 Descriptive Statistic for Variables

5.2 Regression Results Description for Short-term and Long-term Debt

This section aims to analysis the result of the regression model. Each hypothesis will be analyzed based on the result of the regressions, and they could be rejected or accepted. Random effect is used in this analysis and it is necessary to explain why random effect has been chosen for this study.

One common issue in the panel data analysis is whether the individual effects are fixed effects or random effects. Hsiao (1986) argued that, a random effect can be selected if the researcher thinks of the variables included in the study as a sample drawn from a larger population of variables that could have been selected.

The main difference between fixed and random effects is in the kind of information derived from the analysis of the effects. In the fixed effects, researcher is interested in making explicit comparisons of one level against another. If the primary interest is in the effects of other variables across the levels of a factor (e.g. the effect of capital structure determinants on gearing, across samples from 201 firms), then the method should be random effect. In this study selecting 201 firms from a larger population of firms within the country; it is reasonable to select random effect.

In the first table short term Debt Ratio, is considered as dependent variable. On the other side, Risk, Growth, Asset Structure, Profitability, Age and Size are the explanatory variables, which are being regressed against the dependent variable. The results of the regression for short term debt are as following:

Dependent Variable: Y1
 Method: Panel EGLS (Random effect)
 Date: 10/19/2012 Time: 14:18
 Sample (adjusted): 2006 2010
 Period included: 5
 Cross-sections included: 201
 Total panel (unbalanced) observation: 7694

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SIZEN	-0.14187	0.04505	-3.14916	0.0017
AGE	0.01069	0.00382	2.79842	0.0190
ASN	0.09537	0.04172	2.28593	0.0355
PROFIT	- 0.71670	0.09400	7.62446	0.0000
RISK	-0.06710	0.02645	-2.53682	0.0452
GROWTH	-0.11741	0.04368	-2.68795	0.0433
C	0.03662	0.01596	2.29510	0.0351
Y1(-1)	0.93021	0.02012	46.2252	0.0000
R-squared	0.712324			
Adjusted R-squared	0.710292			

Figure 14 Short term Debt Financing Regression Result

Dependent Variable: Y2
Method: Panel EGLS(Random effect)
Date: 10/19/2012 Time: 14:25
Sample (adjusted): 2006 2010
Periods included: 5
Cross-sections included: 201
Total panel (unbalanced) observations:7694

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SIZEN	0.07483	0.00225	3.32134	0.0009
AGE	-0.00049	0.00019	-2.61644	0.0473
ASN	0.01379	0.00216	6.37505	0.0000
PROFIT	0.14575	0.04210	-3.46199	0.0180
RISK	-0.04191	0.01313	-3.19239	0.0242
GROWTH	-0.06100	0.02165	-2.81791	0.0372
C	0.02081	0.00746	2.78681	0.0054
Y2(-1)	0.64926	0.02590	25.06293	0.0000
R-squared	0.477064			
Adjusted R-squared	0.473371			

Figure 15 Long term Debt Financing Regression Results

According to the regression results tables, all the explanatory variables are significant at any so-called significant level (%1, %5, and % 10). The level of significance and sign of the coefficients shows the level and direction of independent variables on dependent variable.

5.2 H1/H2 Size and Leverage

The first and second hypotheses are “*There is a positive relationship between size and Long term/short term debt*”. A positive correlation between size and gearing is supported by Van der Wijst and Thurik (1993) and Chittenden et al. (1996). However, the analysis of the empirical finding shows that the impact of size on short term and long term debt ratios are opposite. Data analysis in table 1 revealed the standardize $\beta = -0.014187$ and $p\text{-value} < .01$. Therefore, the first hypothesis is rejected within this study. This result can be explained as one unit increase in the firm size (asset structure) will decrease 0.014 usage of short term debt in capital structure. Table 2 shows that size is positively related to long term debt. With the standardized $\beta = 0.07483$ and $p\text{-value} < .01$. The second hypothesis is accepted, and the primary data analysis indicates that one unit increase in firm size leads to 0.07 increase on the use of long term debt in capital structure.

One reason for the existence of a negative relationship among the size and the short term debt could be the transaction cost. Small size SMEs have higher transaction cost when they issue long term debt; hence they rely on short term finance. In another word, when the size decrease raising fund with short term debt increase, and when the size increased, level of short term debt decrease. The transaction cost can also explain the positive relationship between size and long term debt. Low transaction cost in large SMEs encourages them to use long term debt.

The different sign of coefficient can be interpret as large SMEs are less prone to bankruptcy than small SMEs because of diversification. Moreover, a firm can increase its size (total asset), when retained earnings in a firm increase. Access to a sufficient level of retained

earnings may obviate the need for raising funds with short term debt. That could be another reason for negative correlation between size and short term debt. Moreover, large SMEs can raise fund with long term debt easier than small SMEs because they have stronger assets to secure the long term debt (Michaels et al., 1999).

5.2H3/H4 Growth and Leverage

The two next hypotheses H3 and H4 proposed a “*positive relationship between growth and long term and short term debt*”. Various authors such as (Chittenden et al., 1996.; Jordan et al., 1998 and Michaels et al., 1999) reported a positive relationship between two concepts. However, the empirical result of this study shows a negative relationship between growth and short term and long term debt. The negative relationship among the growth and firm’s leverage is consistent with findings of Myers, 1984; Williamson, 1988; and Harris and Raviv, 1991.

The hypothesis of a positive relationship between growth and short term debt is rejected with the standardized $\beta = -0.1174$ and $\rho\text{-value} < .05$. The hypothesis of a positive relationship between growth and long term debt is rejected with the standardized $\beta = -0.0610$ and $\rho\text{-value} < .05$. According to Myers (1977), the negative correlation is due to the agency problem. As mentioned before, agency cost is higher in small firms than large ones. In fact, conflicts may arise between managers and owners in the firm when the growth opportunities increased. These agency problems may have a negative impact on both short term and long term debt. Titman & Wessels (1988) argued that growth opportunity does not generate current income, and they have an intangible nature. When a bankruptcy is likely to occur in a firm, the value of growth opportunity will decrease. Therefore, firms with higher growth opportunities are more exposed to bankruptcy cost. Existence of bankruptcy cost has a negative influence on borrowing behavior of firms. Findings of Myers (1977) and Titman and Wessels (1988) are supported by the finding of Wald (1999), who finds a negative relationship between growth opportunity and firms gearing.

5.3H5/H6 Profitability and Leverage

The H5 and H6 argued “*there is a negative relationship between profitability and short term and long term debt*”. These two hypotheses are accepted within this empirical research. The analysis of empirical data shows the standardized $\beta = -0.7167$ and $\rho\text{-value} < .000$, which supports the H5. H6 is also supported by the standardized $\beta = -0.1457$ and $\rho < .01$.

The negative correlation between profitability and gearing provide evidence for pecking order theory. Authors such as Michaelas et al., 1999; Myers, 1984; Cassar and Holmes, 2003; and Voulgaris et al. (2004) mentioned SMEs are strictly following the Pecking Order theory. The results can be interpreted that small business’s owner prefer to use internal source rather than external sources. Managers tend to use retained earnings as much as possible, and when additional finance is needed they raise debt. Therefore, if small firms use internally generated

funds as a first source, then those firms, which use external finance, are the ones with lower level of profit. According to the results, it can be concluded that a firm with a high level of profit will accordingly have access to a higher level of retained earnings hence they will borrow less. A negative relationship between profitability and leverage in SMEs is also confirmed by Van der Wijst and Thurik (1993), Chittenden et al. (1996a) and Jordan et al. (1998).

5.4H7/H8 Age and Leverage

Hypotheses seven and eight proposed “*there is a positive/negative correlation between age and short term/long term debt*”. The analysis of empirical data revealed that age has an opposite effect on long term and short term debt. The result does support the H7, with the positive standardize $\beta = 0.0106$ and $\rho < .05$. Moreover, data analysis shows that the age effect on long term debt is negative, with the standardized $\beta = -0.0004$ and $\rho < .05$. The age coefficient in the long term analysis is insignificant, and it is close to zero. Although, hypothesis eight is accepted within this study, but the result can be interpreted as there is no age impact on long term debt.

According to pecking order theory, older firms have enough time to collect internally generated funds; hence they do not in a great need of external finance. The insignificant age coefficient also proved the idea that the older firms are not in a great need of external finance. The insignificant β certifies that older firms are more likely to use internal funds rather than both long term and short term funds. The effect of Age on short term debt is extremely small, although positive and bigger than long term debt. A comparison between the two coefficients gives a conclusion that SMEs are more willing to raise short term debt rather than long term debt. When the correlation between Age and short term debt is remarkably small, then no correlation between age and long term debt is reasonable. The small impact of age on Short term debt again confirmed the pecking order theory compatibility with SMEs financing.

Another explanation can be found in the firm's capital structure. According to the descriptive statistics older firms should have relatively more long term debt. However, older firms have a chance to accumulate internally generated funds. Over time, the need for renewing maturing long term debt would decrease. A long term debt with one year maturity becomes short term debt in the firm's balance sheet. This fact could be a reason why there is a positive correlation between short term debt and age, and also a negative correlation between age and long term debt.

5.5H9/H10 Operational Risk and Leverage

The next two hypotheses are “*there is a negative relationship between operational risk and short term and long term debt*”. The analyses of empirical data support both hypotheses with a negative coefficient. The H9 is supported with the standardized $\beta = -0.0671$ and the ρ -value $< .05$, hence the operational risk negatively affects the short term debt. Empirical data also provides support for H10 with the standardized $\beta = -0.0419$ and ρ -value $< .05$.

The negative relationship between the level of the risk and debt can be explained as firms normally raise lower level of debt when they are facing the risk. For example, at the time of crisis or financial distress, firms are financially weak. The probability of bankruptcy will increase if the firms raise more debt. The risk coefficient sign tells that the level of leverage in SMEs would decrease by (short term= -0.06 and long term= -0.4) units if the firms' operational risk increased by one unit.

The negative coefficient for both groups of leverage is in line with the proposed hypotheses and static trade of theory. My results show that small firms with higher operating risk tend to use less short term and long term debt. These results are consistent with the earlier works of other scholars such as Hall et al. (2004) and Jordan et al. (1998). McConell and Pettit (1984) and Pettit and Singer (1985) argued that bankruptcy costs could be distinguished in SMEs, and would, therefore, expect a negative correlation between risk and gearing. Nevertheless, Bradley et al. (1984) pointed out, that SMEs experiencing a higher level of financial distress. He argued that SMEs have fewer tangible assets and less retained earnings to stand against the economic shocks. Therefore, a negative relationship can exist between risk and gearing due to the costs of financial distresses.

5.6 H11/H12 Asset Structure and Leverage

Analysis of empirical data provides support for H11/H12. The last two hypotheses suggest "*there is a positive relationship between asset structure and short term/long term debt*". The H11 is supported by the standardized $\beta = 0.0953$ and $p < .05$. The H12 is also supported by the standardized $\beta = 0.0137$ and $p < .01$. Various literatures confirm that the asset structure usually has a positive correlation with the level of debt in the firms. Logically, being bankrupt is less likely for firms with strong asset structure. Firms with higher level of asset structure are willing to raise fund from external sources. These firms can secure their debt by their asset structure.

One explanation for a positive relationship between asset structure and gearing is due the information asymmetries and agency problems. As mentioned before, agency problem and asymmetric information is more severe in small and medium size firms rather than large firms. Creditors are reluctant to lend funds to SMEs, mainly because of the asset substitution danger, and the existence of information asymmetric and agency cost in the SMEs. In order to persuade creditors to provide debt finance, SMEs offer collateral to secure the bank loans. According to Michaels et al (1999), more debt will be available at a lower cost if SMEs secure their debt finance with fixed asset or inventory with a known value. In fact, information asymmetry and agency cost will decrease when the firms secure its debt with fixed asset or high level of inventory. As a result, firms with a high proportion of strong asset structure are able to raise greater higher level of debt finance

The relevant studies also confirm that stronger asset structure brings more leverage for the firms; hence there should be a positive relationship between these two variables in SMEs. Cassar and Holmes (2003) argued that having more tangible assets increase the liquidity in firms and make them less probable to go bankrupt. Therefore, firms with strong asset structure are the ones who tend to raise higher level of leverage in their financing process.

Conclusion

The objective of this paper is to contribute to the limited research of the impact of capital structure determinants on the borrowing behavior of SMEs in Iran. This paper has applied the panel data regression for the sample of 201 SMEs in Iran. This thesis examined empirically the implications of the theory of capital structure in the SMEs. The result of the empirical analyses provides evidence on the magnitude, direction and significance of the regression coefficients of the six capital structure determinants, over the time. My findings are not conclusive, but they support the static trade off theory and pecking order theory.

The findings suggest that the capital structure determinants introduced by the theory of finance are relevant for the Iran small business sector. The general conclusion of this paper suggests that agency cost and asymmetric information cost have an influence on the level of short term and long term debt in SMEs. SMEs experience a higher level of agency cost and asymmetric information cost during their lives. The existence of these costs provides the SMEs with lower ratios of collateralized assets. SMEs with the weak asset structure are sensitive to economic turmoil and will be consider risky by financial institutions. Therefore, SMEs should rely on lower levels of external funds.

My results show evidence that profit, defined as the ratio of pre-tax profits to sales turnover, is the most powerful determinant of borrowing decisions in both long term and short term debt. Profitability affects both groups of debt in the same way, but the magnitude is substantially higher for short term debt than long term debt. This huge difference in magnitude might be a result that SMEs raise relatively more short term debt than long term debt. Pecking order theory supports the use of short term debt, but lack of collateralized assets and the scope of a business could be the reasons for applying more short term debt. With the same logic, SMEs use internally generated funds rather than short term debt to finance projects once profitable. The next influential determinant after profit is size. My results reveal that there is a negative correlation between short term leverage and size. The size coefficient for long term leverage is positive but significantly lower than short term leverage. This suggests that SMEs experience several constraints, such as transaction costs, information asymmetries and bankruptcy risk. These constraints prevent SMEs from rising external fund regardless of the size. Along profitability and size, asset structure seems to be another factor which influences SMEs borrowing behavior. The positive correlation indicates that leverage will be available for SMEs if they provide collateral to secure the bank loan. In other words, lenders are worried to lend because of asset substitution danger. Securing the loan with fixed assets or known value inventory is associated with both debt groups, since it reduces the agency and information asymmetry costs. On the other hand, risk and growth opportunity seem to influence the decomposed leverage for SMEs negatively to a greater extent. Therefore, risk and growth opportunities appear to be more valuable for creditors while evaluating SMEs. Age is the determinant which does not seem to affect the long term debt level, and it has a very small positive effect on short term debt on Iranian SMEs. This unexpected positive correlation between age and short term debt can be explained by the

leverage maturity. When a long term loan becomes mature within a year, if it is not renewed, it turns into a short term loan in the balance sheet as the firm grows older.

Limitations and Improvement

The same as the other empirical studies regarding the SMEs, this thesis also faces some noteworthy limitations. Limitation in generalizing the result of this study includes: firstly, SMEs are not obliged to disclose their financial information. Those SMEs who disclose their financial statement may decide to publish partially and incomplete. Lack of transparency and incomplete data leads to an unbalanced dataset, which limit the sample size of this study to only 201 SMEs. The availability of data for SMEs is mainly limited by two factors of: number of firms and history of financial data. Data availability has been named as one of the most crucial limitation of SMEs research. Secondly, this paper focused on six most used capital structure indicators as independent variables. In order to increase the accuracy of the regression model, more capital structure indicators that can be added to the model. Thirdly, all the selected firms in this study are small private limited firms, which are survived from the bankruptcy; although the risk of bankruptcy always exists. Reviewing on capital structure literatures clearly shows that high gearing may result in bankruptcy. Therefore, the study's sample is likely to exclude the highly gearing SMEs. Further studies can be done with the aim of adding more depending indicators, and also including highly gearing firms into the sample.

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