Some Determinants of Corporate Financing Decisions: Evidence from the Listed Companies in Tehran Stock Exchange

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Abstract

The aim of this empirical study is to explore the trade-off model and pecking order model of capital structure. The investigation is performed using panel data procedures for a sample of 76 firms listed in Tehran Stock Exchange during 2007-2010.The study employs OLS regression model in examining the capital structure of firms in Iran. The study employs variables reflecting differing theoretical arguments on capital structure. The results suggest that trade-off model and pecking order model are not mutually exclusive. Both trade-off model and pecking order model play an important role in determining the total debt level of firms. However, empirical results of long-term debt level consistent only with pecking order model but not trade-off model. This may because financial institutions in Iran do not concern seriously on the risk of insolvency. Firms with higher risk can access long- term debt financing as easy as firms with less risk. The findings of the study clearly demonstrate the importance of capital structure decisions for financial sources.

Keywords: Capital Structure; Financing Decisions; Pecking Order Theory; Trade-off Theory; Agency Cost Theory.

1. Introduction

Over the past 40 years, much of the capital structure research has advanced theoretical models to explain the capital structure pattern and also to provide empirical evidence concerning whether the theoretical models have explanatory power when applied to the real business world. The focus of both academic research and practical financial analysis has been on those large corporations with publicly traded debt and equity securities that dominate economic life throughout the developed world (Chen, 2003).

The finance literature has traditionally offered two theories of capital structure. In the trade-off theory, firmspick target leverage by weighing the benefits and costs of an additional dollar of debt. The benefits of debt include the tax deductibility of interest and the reduction of the free cash flow problem (Jensen, 1986). The costs of debt include the expected financial distress costs and the costs arising from the agency conflict between shareholders and bondholders. At target leverage, the benefit of the marginal dollar of debt exactly equals the cost.

In the pecking order theory of Myers (1984), the costs of issuing new securities dominate other considerations. These costs arise because management possesses private information about the value of risky securities and uses this information when making issuing decisions. Because of these costs, firms use internal capital to finance new projects. When internal capital is insufficient,firms issue safe and then risky debt. Equity is issued as alast resort (Ovtchinnikov, 2010).

Despite significant research in this area, our understanding of capital structure decisions is far from complete. Neither theory is capable of explaining all regularities in capital structure decisions. Previous research has found leverage to be related to profitability,market-to-book, firm size, asset tangibility, and industry leverage in a manner consistent with either one or the other theory. It is not clear whether target leverage exists and, assuming that it does, there is disagreement about how quickly firms adjust to the target. Interestingly,firms are not inactive in their refinancing decisions but the decisions that they make appear to contradict either the tradeoff or the pecking order theory. Firms appear to fail to take full advantage of the tax deductibility of debt. Firms also appear to fail to counteract the effects of stock prices on leverage, so changes in market leverage are significantly related to stock prices, and past market-to-book ratios predict current leverage.Empiricaltests are further complicated by the fact that capital structure appears highly persistent in the time-series, which makes identification of factors relevant for capital structure decisions more challenging (Lemmon, Roberts,and Zender, 2008)

This paper shed some light on the determinants of the capital structure using 76 firms listed in Stock Exchange from 2007-2010. We include variables based on different capital structure theories. Also, we examine how the variables affect on debt with different maturity i.e. short term, long term and total debt level of firms. The conclusions of this paper are expected to shed some light on the possibility that firms choose their capital structures based on several but not one capital structure theories. Also, this paper helps to understand better whether the determinants of short term and long term debt are different. This paper is organized as follows: The next section gives a literature review on the determinants and effects on the capital structure of firms. Then, methodology: data description and justification of the choice of the variables used in the analysis are discussed in section three. The fourth and fifth section

presents the results of the empirical analysis and discusses the conclusion which can be derived from the results. Finally, we cite the Implications for future studies in the last section.

2. Literature Reviews on Capital Structure

Modigliani and Miller (1958) in capital structure provided a substantial boost in the development of the theoretical framework within which various theories were about to emerge in the future. Modigliani and Miller (1958) concluded to the broadly known theory of "capital structure irrelevance" where financial leverage does not affect the firm's market value. However, their theory was based on very restrictive assumptions that do not hold in the real world. These assumptions include perfect capital markets, homogenous expectations, no taxes, and no transaction costs. The presence of bankruptcy costs and favorable tax treatment of interest payments lead to the notion of an "optimal" capital structure which maximizes the value of the firm, or, respectively, minimizes its total cost of capital (Brigham and Ehrhardt, 2005). Modigliani and Miller (1963) reviewed their earlier position by incorporating tax benefits as determinants of the capital structure of firms. The key feature of taxation is that interest is a tax-deductible expense. A firm that pays taxes receives a partially offsetting interest "tax-shield" in the form of lower taxes paid. Along with corporate taxation, researchers were also interested in analyzing the case of personal taxes imposed on individuals (Mouamer, 2011). Miller (1977), based on the tax legislation of theUSA, discerns three tax rates that determine the total value of the firm. These are:

(1) The corporate tax rate.

(2) The tax rate imposed on the income of the dividends.

(3) The tax rate imposed on the income of interest inflows

According to Miller (1977), the value of the firm depends on the relative level of each tax rate, compared with the other two. Bankruptcy costs are the cost directly incurred when the perceived probability that the firm will default on financing is greater than zero. The bankruptcy probability increases with debt level since it increases the fear that the company might not be able to generate profits to pay back the interest and the loans (Titman, 1984). The use of debt in capital structure of the firm also leads to agency costs. Agency costs arise as a result of the relationships between shareholders and managers and those between debt-holders and shareholders (Jensen and Meckling, 1976). The need to balance benefits and costs of debt financing emerged as a theory known as the static trade-off theory by Myers (1984). It values the company as the value of the firm if unlevered plus the present value of the tax shield minus the present value of bankruptcy and agency costs.

The pecking order hypothesis suggests that firms are willing to sell equity when the market overvalues it (Myers, 1984; Chittenden et al., 1996). This is based on the assumption that managers act in favor of the interest of existing shareholders. As a consequence, they refuse to issue undervalued shares unless the value transfer from "old" to new shareholders is more than offset by the net present value (NPV) of the growth opportunity. This leads to the conclusion that new shares will only be issued at a higher price than that imposed by the real market value of the firm. Therefore, investors interpret the issuance of equity by a firm as signal of overpricing. If external financing is unavoidable, the firm will opt for secured debt as opposed to risky debt and firms will only issue common stocks as a last resort (Abor, 2005). Myers and Majluf (1984) maintain that

firms would prefer internal sources to costly external finance. Thus, according to the pecking order hypothesis, firms that are profitable and, therefore, generate high earnings are expected to use less debt capital than those that do not generate high earnings.

Bagherzadeh, (2003), Attempts to extend knowledge of corporate capital structure and its determinants in a less-developed economy namely, Iranian capital market. It utilizes accounting information for a sample of 158 listed Iranian non financial firms for the period 1998 through 2002. The primary objective of his study was to establish whether corporate capital structure in Iranian listed companies is related to factors similar to those appearing to influence the capital structure of U.S. and other developed countries' firms. Results obtained although inconsistent with central predictions of pecking order theory and asymmetric information hypothesis of financing choices but suggest that the optimal capital structure choice may be explained by three key factors such as tangibility, firm size and profitability. However, although results provide varying degrees of support for the static trade-off theory of capital structure choice, but anecdotal evidence suggest that Iranian listed companies practice pecking order behavior in reality.

Ahmadpour and Salimi (2007) investigate the existence of inter-industry differences in the capital structure of Iranian firms and to investigate impact of size (assets/sale) on capital structure. First,they attempt to test the differences in capital structure across industry groups using the leverage ratio of debt to assets. The first null hypothesis to be tested is that firms in different industries have the same financial structures. The results of the cross-sectional tests were obtained by performing a nonparametric Kruskal-Wallis test. The nonparametric tests results in the rejection of the null hypothesis. In second hypothesis they pool together the firms, with no regard to the industry class and investigate whether the size of the firms correlates with capital structure. Then the spearman rank correlation coefficient is calculated. It is interesting to note that the spearman rank correlation coefficient is not significant over all the years. This implies that there is no relationship between size and capital structure.

Khajavi and Hosseini (2010), investigate the presence or absence of relationship between governmental and political patronage of company and its capital structure. Results indicate significant positive correlation between capital structure and political patronage, firm size, investment and growth opportunities. In other words, capital structure is under the effect of political patronage in Iran's environment. Also there is a negative relationship between capital structure and tangible assets and return of assets. Obtained results emphasize that there is a lack of sufficient attention to the efficiency of capital resources, and inappropriate increase in volume of liabilities with no regard to its efficiency and capacity of borrowing in firms under political patronage in Iran.

Keshtkar et al. (2012), examine the importance of capital structure and the impact of management's financial decisions on the firm's value, their study tests the most well-known theories of capital structure, static trade-off theory and pecking order theory under different debt maturities for a sample of 70 firms listed in the Tehran Stock Exchange during 2001-2010. Based on literature of capital structure they define some of the variables such as size, profitability, growth opportunities and dividend payout as the most effective variables over capital structure, then their relationship tested by using multiple regression techniques. Findings indicate that during the study period, profitability is

negatively associated with capital structure, which can be described by pecking order Theory, So the findings of study shows that the capital structure in Iran are not consistent with the findings of Static Trade-off Theory and there is not significant correlation between other factors and capital structure.

Nadem et al (2012), investigate the determinant factors of capital structure of companies listed on Tehran Stock Exchange. Based on pecking order theory (Static and Dynamic Version) and using data of companies listed on Tehran Stock Exchange during 2002-2010, they investigated the effect of return on investment, tangible fixed assets, net working assets, firm size and profitability index on debt ratio. The results show that in static version of pecking order, all variables have significant relationship with capital structure. But, in dynamic version of pecking order, fixed assets have positive relationship and net working assets have negative relationship with capital structure.

3. Capital Structure Models

3.1. Trade-off Model: Bankruptcy Costs

The MM model, based on perfect market conditions, was relaxed initially by one condition: tax. Debt has benefits in increasing the value of a firm due to the tax deductibility of debt interest. Modigliani and Miller (1963) introduced the corporate income tax effect into their model and demonstrated that, in the event of tax, the capital structure has a positive impact on the value of a firm after taking into account the interest costs being tax-deducted. In a further refinement, Miller (1977) incorporated the personal income tax rate into this equation and found that the corporate tax benefit of debt could be reduced or offset by this tax rate. In another study, DeAngelo and Masulis (1980) considered the impact of non-debt tax shields such as depreciation, investment tax credits and depletion allowance and argued that the corporate tax benefit of debt could be increased or expanded as a result of these non-debt tax shields. These three pieces of study focus on the examination of tax benefits of debt.

Most scholars agree that debt has benefits and, more importantly, also agree that tax benefits are not inexhaustible. Otherwise, it would be beneficial to finance company operations 100% by debt (Swanson, et al., 2003, p. 158). However, debt has costs as well. The inclusion of bankruptcy costs in a study of capital structure by Baron (1974, p. 178) produced the bankruptcy theory of capital structure. Bankruptcy theory argues that the more debt is issued, the greater the risk to equity (higher cost of equity), but also the greater the likelihood of bankruptcy and the higher the costs of bankruptcy (Baxter, 1967).

3.2. Agency Costs Model

The agency cost model was first introduced by Jensen and Meckling (1976). According to the agency cost model, there is conflict between firm's owners and managers.

Agency theory is concerned with agency relationships. Two parties have an agency relationship when they cooperate and engage in an association wherein one party (the principal) delegates decisions and/or work to another (an agent) to act on its behalf(Zu and Kaynak, 2012).

The important assumptions underlying agency theory are that:

- Potential goal conflicts exist between principals and agents;
- Each party acts in its own self-interest;
- Information asymmetry frequently exists between principals and agents;
- Agents are more risk averse than the principal; and

- Efficiency is the effectiveness criterion (Eisenhardt, 1989; Ekanayake, 2004;Rungtusanatham et al, 2007;Zu and Kaynak, 2012).

Two potential problems stemming from these assumptions may arise in agency relationships: an agency problem and a risk-sharing problem. An agency problemappearswhen agents' goals differ from the principals' and it is difficult or expensive to verify whether agents have appropriately performed the delegated work (i.e. moral hazard).

This problem also arises when it is difficult or expensive to verify that agents have the expertise to perform the delegated work (i.e. adverse selection) that they claim to have. A risk-sharing problem arises when principals and agents have different attitudes towards risk that cause disagreements about actions to be taken (Eisenhardt, 1989;Jensen and Meckling, 1976; Ross, 1973; Rungtusanatham et al., 2007, Zu and Kaynak, 2012). In order to resolve agency and risk-sharing problems in principal-agent relationships, agency theory prescribes two formal (and ideal) types of management mechanisms to govern these (Zu and Kaynak, 2012). One is outcome-based management mechanism. With this mechanism both principals and agents can observe outcomes, and the principals reward agents based on measured performance outcomes(Ekanayake, 2004). The outcome-based management mechanism emphasizes results regardless of how the agents achieve them (Choi and Liker, 1995). The other management mechanism is behavior-based. When this mechanism is taken, principals can use behavior controls to monitor agents' behaviors and efforts which otherwise are unknown to the principals. The behavior-based management mechanism emphasizes tasks and activities in agents' processes that lead to the outcomes of the agents(Zu and Kaynak, 2012). Accordingly, a critical issue in agency theory is determining which management mechanism, outcome-based or behavior-based, is more efficient in managing agency relationships "under varying levels of outcome uncertainty, risk aversion, information and other variables". When making this decision, managers must consider the trade-off between:

- The costs of acquiring the information necessary for monitoring the agent behavior; and
- The costs of measuring outcomes and transferring risk to agents (Zu and Kaynak, 2012).

The optimal capital structure under agency cost model is the balance between the benefits of debt and the cost of debt. Firms will choose their own Capital Structure which Minimize its total agency cost.

3.3. Pecking Order Model

The pecking order model (Myers, 1984) and Myers and Majluf (1984) and its intensions (Lucas & McDonald, 1990) are based on the idea of asymmetric information between firm's managers and investors. Managers know more about the firm's true value than outside investors. To maximize the wealth of existing shareholders, managers avoid issuing undervalued new share to finance new projects. Thus, issuing new equity is interpreted as a negative signal, in the sense that the equity is being overvalued. This negative signal results in the decline of stock price. The relation between the issue of new shares and the decline of stock price is confirmed in several studies (Asquith & Mullins, 1986).According to pecking order model, managers tend to finance a new project initial by undistributed Earnings which is no existence of information asymmetry and will not be undervalued. Then, they will try on debt capital if extra funds are

still needed. Issuing new share is treat as the final source of funds. Following the idea of pecking order model, firms with higher profitability generate more earning. Therefore, firms with higher profitability depend more on internal funds while less depend on debt capital. Several researches have tested the effects of profitability on debt level. Kester (1986),Friend and Lang (1988) and Shyam-Sunder and Myers (1999) concluded that there is a significant negative relation between profitability and debt level. Wald (1999) found a significant negative relation between profitability and debt level for firms in several countries.

4. Methodology and Measurement of Variables

4.1. Society and the Statistical Sample

Statistical population of the research contains of four industries(Pharmaceutical, Cement, Machinery & equipment and electrical equipment) Listed in Tehran stock exchange, from 2007 to 2010 satisfying the following conditions:

1) They have been listed in Tehran stock exchange before fiscal year of 2007 and not taken out of the quotation boards until the end of fiscal year of 2010.
2) Their fiscal year should be leading to the end of the year.
3) They should not be investment or mediating companies.
4) The book value of the companies should not be negative

Considering the above mentioned conditions, 76 companies fulfilled all the above-mentioned conditions. After obtaining requisite data and gauging the parameters of the research by EXCEL software the results and findings are put into SPSS software.

4.2. Independent Variables and Research Hypotheses

4.2.1. Growth Opportunities

Theoretical studies generally suggest growth opportunities are negatively related with leverage. On the one hand, as Jung, Kim and Stulz (1996) show, if management pursues growth objectives, management and shareholder interests tend to coincide for firms with strong investment opportunities. But for firms lacking investment opportunities, debt serves to limit the agency costs of managerial discretion as suggested by Jensen (1986) and Stulz (1990). The findings of Berger, Ofek, and Yermack (1997) also confirm the disciplinary role of debt. On the other hand, debt also has its own agency cost. Myers(1977) argues that high-growth firms may hold more real options for future investment than low-growth firms. If high-growth firms need extra equity financing to exercise such options in the future, a firm with outstanding debt may forgo this opportunity because such an investment effectively transfers wealth from stockholders to debt holders. So firms with high-growth opportunity may not issue debt in the first place and leverage is expected to be negatively related with growth opportunities. Berens and Cuny (1995) also argue that growth implies significant equity financing and low leverage.

Empirical studies such as Booth et al. (2001), Kim and Sorensen (1986), Rajan and Zingales (1995), Smith and Watts (1992), and Wald (1999) predominately support theoretical prediction, the only exception is Kester (1986). There are different proxies for growth opportunities. Wald (1999) uses a 5-year average of sales growth. Titman and Wessels (1988) use capital investment scaled by total assets as well as research and development scaled by sales to proxy growth opportunities. In this paper, we use price-to-earnings ratio (P/E) as a proxy of growth opportunities. Price-

to-earnings ratio is calculated by dividing the market price per share by the annual earnings per share. Based on the market timing theoretical arguments, we formulate the following hypothesis:

H_1. The Price-to-earnings ratio is negatively related to level of debt.

4.2.2. Firms' Size

Many studies suggest there is a positive relation between leverage and size. Marsh(1982) finds that large firms more often choose long-term debt, while small firms choose short-term debt. Large firms may be able to take advantage of economies of scale in issuing long-term debt, and may even have bargaining power over creditors. So the cost of issuing debt and equity is negatively related to firm size. On the other hand, size may also be a proxy for the information that outside investors have. Fama and Jensen (1983) argue that larger firms tend to provide more information to lenders than smaller ones. Rajan and Zingales (1995) argue that larger firms tend to disclose more information to outside investors than smaller ones. Overall, larger firms with less asymmetric information problems should tend to have more equity than debt and thus have lower leverage. However, larger firms are often more diversified and have more stable cash flow; the probability of bankruptcy for large firms is smaller compared with smaller ones, ceterisparibus. Both arguments suggest size should be positively related with leverage. Also,many theoretical studies including Harris and Raviv (1990), Narayanan (1988), Noe(1988), Poitevin (1989), and Stulz (1990), suggest that leverage increases with the value ofthe company.

Empirical studies, such as Booth et al. (2001), Marsh (1982), Rajan and Zingales(1995), and Wald (1999), generally find that leverage is positively correlated with company size. While both Rajan and Zingales (1995) and Wald (1999) find that larger firms in Germany tend to have less debt, Wald (1999) finds that, in Germany, a small number of professional managers control a sizable percentage of big industrial firms' stocks (such as Siemens and Daimler-Benz) and can force management to act in the stockholders' interests. Based on this fact, he argues that such centralized company controls responsible for the negative coefficient on size in the case of Germany.

According to trade-off theory, it is expected that greater company size contribute to them turning more to debt. We use the logarithm of market capitalization (SIZE) as a proxy of size of a firm. Based on trade-off theory forecast, we formulate the following hypothesis:

H_2. Company size is positively related to level of debt.

4.2.3. Profitability

Profitability represents the power of making profit by firms. According to the trade-off model, profitable firms have high tax burden and low bankruptcy risk. Therefore, profitable firms are more likely to employ a higher leverage than those less profitable (Ooi, 1999). Empirical evidences can be found in studies ((Bowen, Daley, & Huber, 1982), (Dammon&Senbet, 1988) and (Givolyet al, 1992)) which support trade-off model. Contrary to trade-off model, according to pecking order model, profitable firms tend to have lower debt level (Myers, 1984). Barton and Hill (1989), agrees that firms with higher profitability have lower debt level because they can generate much internal funds than firms less profitable. Empirical studies (Al-Sakran, 2001), (Chittenden, Hall, & Hutchinson, 1996), (Coleman & Cole, 2000) and (Griner& Gordon, 1995)) suggest pecking order model is more appropriate in explaining the relation

between firm's profitability and debt level. Most empirical studies show that leverage is negatively related to profitability. Friend and Lang (1988), and Titman and Wessels (1988)obtain such findings from US firms. Kester (1986) finds that leverage is negatively related to profitability in both the US and Japan. More recent studies using international data also confirm this finding, Rajan and Zingales (1995), and Wald (1999) for developed countries, Booth et al. (2001) and Wiwattanakantang (1999) for developing countries. Long and Maltiz (1985) find leverage to be positively related to profitability, but the relationship isnot statistically significant. Wald (1999) even claims that profitability has the largest single effect on debt/asset ratios. We use the return on total asset (ROA) as a proxy of profitability in this paper. Return on total assets is calculated by dividing a firm's annual earnings by its total assets. Return on total assets Indicate how efficient management is at using its assets to make profit. Other possibility measures of profitability are the ratio of earnings before tax, interest payments, and depreciation to the book value of assets (EBITDA) or the ratio of operating cash flow to total assets. EBITDA measures firm's profitability ignoring the effect of different taxation system while the ratio of operating cash flow to total assets measures firms' internal cash generating ability.

According to what is forecast by pecking order theory, the most profitable companies with greater capacity to self-finance resort less to external equity, compared to less profitable companies, and so we formulate the following hypothesis:

H_3. Profitability is negatively related to level of debt.

4.2.5. Agency Cost

Agency cost of debt arises from the conflict of interest between shareholders and creditors. When shareholders of a listed company decide to raise capital for an investment project from debt financing, the creditors supply funds to the company with the expectation of obtaining a return. The shareholders of the company are agents, in relation to the creditors who are the principals. The principals (creditors) are supposed to achieve the expected return and their agents (shareholders) are supposed to deliver these returns. Shareholders know that the benefit of debt financing goes entirely to shareholders if the business goes well, but the cost of achieving a maximum return is high and is fully borne by creditors if a business goes bad. Also, shareholders know that debt-financing can be a mechanism to discipline managers. Shareholders may wish to undertake more debt by taking on riskier projects; however, managers dislike taking more debt and tend to take on less risky projects.

According to Jesen (1986), firms can reduce their agency costs by employing a higher level of debt or dividends. A high level of debt or dividends reduces the free cash flow available for managers to over-investment. Thus, agency costs for over - investment is reduced. In long term, firm's return on investment is increased over time. Lang and Lichtenberger (1989) show the effect of dividend policy on agency cost. We use dividend payout ratio (DIV) as proxy of agency cost. High dividend payout ratio can lower free cash flow effectively. Therefore, agency costs for firms having a high dividend payout ratio are lower than firms having a low dividend payout ratio. Firms with low agency cost tend to depend less on debt financing. Based on agency cost theory forecast, we formulate the following hypothesis:

H_4. Dividend payout is negatively related to level of debt.

Now we summarize the some determinants of capital structure, definitions, predicted signs and the results of previous empirical studies in

Table 1.Summary of some determinants of capital structure, theoretical predicted signs and the results of previous empirical studies

Proxy (Abbreviation)	Definitions	Theoretical predicted signs	Major empirical studies' results
Profitability	The ratio of operating cash flow to total assets	+/-	-
Size	logarithm of market capitalization	+/-	+
Growth Opportunities	Dividing the market price per share by the annual earnings per share	-	-
dividend payout	dividend payout ratio (DIV)	-	-

Notes: "+" means that leverage increases with the factor, "-" means that leverage decreases with the factor, and "+/-" means that both positive and negative relationships between leverage and the factor are possible theoretically if in "Theoretical Predicted Signs" column, or have been found empirically if in 'Major Empirical Studies' Results" column.

5. Models and Empirical Results

OLS is used to investigate the some determinants of corporate financing decisions in this paper. Three different regression equations are formulated as follow:

$$LEV_{i,t}= \beta_0 + \beta_1 P/E_{i,t}+ \beta_2 SIZE_{i,t} + \beta_3 ROA_{i,t}+ \beta_4 DIV_{i,t} + Constant \quad (1)$$

$$SHORT_{i,t}= \beta_0 + \beta_1 P/E_{i,t}+ \beta_2 SIZE_{i,t} + \beta_3 ROA_{i,t} + \beta_4 DIV_{i,t} + Constant \quad (2)$$

$$LONG_{i,t} = \beta_0 + \beta_1 P/E_{i,t}+ \beta_2 SIZE_{i,t} + \beta_3 ROA_{i,t} + \beta_4 DIV_{i,t} + Constant \quad (3)$$

In this paper, we investigate some determinants of corporate financing decisions for the 76 firms in Pharmaceutical, Cement, Machinery & equipment and electrical equipmentindustries, listed in Tehran exchange (TSE)over the years 2007-2010. There are three dependent variables, total debt, short-term debt, and long-term debt. The total debt ($LEV_{i,t}$) is the total debt divided by the equity. Short-term debt($SHORT_{i,t}$) is the total short term debt divided by equity while the long-term debt ($LONG_{i,t}$) is the total long term debt divided by the equity. The independent variables used are price-to-earnings ratio ($P/E_{i,t}$), logarithm of market capitalization ($SIZE_{i,t}$), return on total asset ($ROA_{i,t}$) and dividend payout ratio ($DIV_{i,t}$). The basic descriptive statistics are shown in Table 2.

Table 2: Description Statistics of variables

Variables	Mean	SD	Min	Max	Skewness	Kurtosis
SHORT	0.8541	0.8346	0.1044	5.4521	1.003	2.725
LONG	0.0926	0.0697	0.0010	0.3841	1.787	3.774
LEV	0.9467	0.8524	0.1157	5.4464	1.074	2.601
P/E	7.867	6.7949	0.1321	56.254	5.569	25.164
ROA	0.1921	0.3121	-0.0111	0.412	1.201	3.2140
SIZE	29.122	1.325	24.66	30.352	-0.171	-0.589
DIV	0.5660	0.2311	0.000	0.9710	-0.451	-0.528

Table 2 provides a summary of the descriptive statistics of the dependent and explanatory variables. This shows the average indicators of variables computed from the financial statements. The mean $LEV_{i,t}$ of firms was 0.9467. This means that more than 94 percent of the firms in Iran are financed by debts. The average of long-term debt suggests that it represents around 9.2 percent of the capital of the firm while the mean short-term ratio of the firms was 0.8541. Total short-term debts appear to constitute more than three quarters of the capital of the firms. This highlights the importance of short-term debts over the long-term debts in Iranian firms' financing.

Prior to estimating the coefficients of the model, the sample data were also tested formulticollinearity. Results are presented in Table 3, which show that most cross-correlation terms for the explanatory variables are fairly small, thus giving no cause for concern about the problemofmulticollinearity among the explanatory variables. From observation of the results of the correlation matrix, we can conclude that the correlation between size and short-term debt and long-term debater positive and statistically significant at the 1 percent level. The correlation between profitability and debt is negative and statistically significant at the 1 percent level. The correlation coefficients of dividend payout ratio and long-term debt are not statistically significant.

The results of the OLS regression between leverage (dependent variable) and the four explanatory variables are reported in Table 4. The negative relationship between profitability and debt found in the current study agrees with several studies (Titman and Wessels, 1988; Rajan and Zingales, 1995; Booth et al., 2001; Miguel and Pindado, 2001; Baker and Wurgler, 2002; Fama and French, 2002; Hovakimian, 2003;Bagherzadeh; 2003,Bie and Hann, 2004; Frank and Goyal, 2004; Gaud et al., 2005,Keshtkar et al; 2012). This result is consistent with the prediction of the pecking order theory. The results also indicate a statistically significant positive relationship between size and leverage. The results suggest that the bigger the firm, the more external funds it will use. One reason is that, larger firms are more diversified and hence have lower variance of earnings, enable them to manage high debt ratios.The providers of the debt capital are more willing to lend to larger firms as they are perceived to have lower risk levels. Other the hand, smaller firms may find it relatively more costly to resolve issues of information asymmetries with the providers of capital debt, thus, may present lower debt ratios.

Table 3: Correlation analysis for selected study variables

Variable	SHORT	LONG	LEV	P/E	ROA	SIZE	DIV
SHORT	1						
LONG	0.275**	1					
LEV	0.547**	0.355**	1				
P/E	-0.480**	-0.405**	-0.426**	1			
ROA	-.0367**	-0.184**	-0.278**	-0.212*	1		
SIZE	0.356**	-0.084	0.369**	0.362**	-0.011	1	
DIV	-0.347*	-.0.231	-0.346**	-0.154	0.078	-.012	1

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

This result supports financial theory and is consistent with the empirical evidence. Our evidence is non-consistent with Ahmadpour and Salimi in Iran (2007). They show that there is not a relationship between size and leverage but our study agree with Khajavi&Hosseini(2010) in Tehran Stock Exchange.

Also, the results show that firms that have a good growth opportunity in the future (a higher P/E) tend to have lower leverage. Firms with brighter growth opportunities in the future prefer to keep leverage low so they will not give up profitable investment because of the wealth transfer from shareholders to creditors. Another reason is that growth opportunities are intangible assets, which are likely to be damaged in financial distress. Our results agree with the findings by Auerbach (1985), Rajan&Zingales (1995), Chittenden, Hall, & Hutchinson (1996) and inconsistent with Khajavi&Hosseini (2010), they show that there is a positive relationship between leverage and growth opportunities.

Dividend payout ratio shows an inverse relation with the total debt level of firms. High dividend payout ratio reduces the agency cost effectively (Lang &Litzenberger, 1989). Thus, firms do not need to reduce agency cost through debt capital.

Table 5 and Table 6 show the regression results of short-term debt level and long-term debt level respectively. In the regression results of short-term debt level, all independent variables are significant at 1% level. Thus, the empirical results of short-term debt agree with both trade-off model and pecking order model.

The regression results can be explained by the fact that firms can access long-term debt capital easily in Iran. When financial institutions do not concern seriously on the risk of insolvency, firms with higher risk can access debt financing as easy as firms with less risk. As mentioned in the previous section, bankruptcy risk is related to the firm's size, and agency cost for debt holder is related to the price-to-earnings ratio .When debt holders do not concern bankruptcy risk and agency cost seriously when lending out short-term debt, firm's size and price-to-earnings ratio will become unrelated to the short-term debt as well.

From the regression results of long-term debt level, price-to-earnings ratio and profitability are significant related to the long-term debt level. It suggests that pecking order model for firm's owner is able to explain how firms select their long-term debt level. Pecking order model concern the internal management style of firms. Thus, the ease in obtaining long-term debt financing does not affect firm's management style, and also the description ability of the pecking order model.

Table 4: Regression results of Total debt level (Leverage)

Dependent Variable: Leverage				
	Coefficient	**Std. Error**	**t-statistic**	**Sig**
Constant	-5.263	1.767	-2.752	0.003
P/E	-0.155	0.015	-2.241	0.001
ROA	-0.623	0.211	-2.83	0.002
SIZE	0.221	0.068	3.319	0.000
DIV	-0.895	0.264	-3.313	0.000
R-Square	0.332			
Adjusted R-Square	0.321			
Durbin-Watson stat	1.711			
F-statistic	15.567			
Prob(F-statistic)	0.000			

Significantat 5% level

Table 5: Regression results of short-term debt level

Dependent Variable: SHORT				
	Coefficient	**Std. Error**	**t-statistic**	**Sig**
Constant	-4.541	1.821	-3.145	0.002
P/E	-0.138	0.015	-1.831	0.006
ROA	-0.581	0.231	-2.872	0.003
SIZE	0.311	0.084	3.481	0.000
DIV	-0.871	0.281	-3.289	0.000
R-Square	0.311			
Adjusted R-Square	0.300			
Durbin-Watson stat	1.776			
F-statistic	14.423			
Prob(F-statistic)	0.000			

Significantat 5% level

Table 6: Regression results of long-term debt level

Dependent Variable: LONG				
	Coefficient	**Std. Error**	**t-statistic**	**Sig**
Constant	3.160	1.158	1.014	0.012
P/E	-0.024	0.011	-1.124	0.016
ROA	-0.312	0.019	-3.563	0.011
SIZE	-0.012	0.016	-0.916	0.433
DIV	-0.024	0.031	-1.056	0.201
R-Square	0.251			
Adjusted R-Square	0.238			
Durbin-Watson stat	1.995			
F-statistic	9.676			
Prob(F-statistic)	0.000			

Significant at 5% level

6. Conclusion

Some of theories are presented relating capital structure, starting point is considered as irrelevance theory, presented by Millers and Modigliani (1958). Millers and Modigliani (1958) argued that external borrowing has no effect on firm's value. Irrelevance theory assumes certain conditions; later on researchers found that all assumptions have significant effect on capital structure determination. Two main theories, that is, Pecking order theory (POT) and Trade-off theory (TOT) play important role in determining capital structure. This study investigated the impact of both POT and TOT in determining capital structure of firms.

According to empirical findings, profitability have a negative and significant relationship with the debt ratio, which confirms that firms finance their activities following the financing pattern implied by the pecking order theory. Moreover, high cost of raising funds might also restrict the Iranian firms to rely on internally generated funds because of relatively limited equity markets combined with lower levels of trading. This finding also confirms that information asymmetry is especially relevant in the capital structure decisions of the firms listed in TSE. Our results are consistent

with Nadem et al (2012) in Iran. They show that there is a negative relationship between profitability and debt level.

The variable size has a positive and significant impact on leverage and short term debt. This finding is consistent with the implications of the trade-off theory suggesting that larger firms should operate at high debt levels due to their ability to diversify the risk and to take the benefit of tax shields on interest payments. Our results are consistent with Nadem et al (2012) in Iran. They show that there isa positive relationship between leverage and size.

The empirical results of the factors affecting the debt level of firms in Tehran stock exchange suggest that pecking order model and trade-off model are not mutually exclusive. Our results agree with the findings of Fama and French (2002). Firms tend to select their leverage level according to both pecking order model and trade-off model. However, factors affecting the short-term debt level and long-term debt level are different. The empirical results suggest that, long-term debt level consistent with pecking order model. On the other hand, factors related to the risk of insolvency do not affect on long-term debt level of firms. The empirical results agree with Hovakimian, Opler, and Titman (2001). They concluded that debt ratio and debt-equity issue choice appear to be consistent with pecking order behavior in short-run. In short, empirical results suggest that long-term debt level of firms in Tehran stock exchange consistent with pecking order model. Apart from this, the long-term debt level and the total debt level of firms are consistent with both pecking order model and trade-off model. Evidences show that pecking order model and trade-off model are not mutually exclusive.

Implications for Future Studies

There exist alternative capital structure theories in the finance literature (trade-off theory, pecking order theory, signaling effect theory, Agency cost theory, theories based on product /input market interactions, theories driven by corporate control considerations, capital structure life cycle theory, the legal environment theory and corporate governance theory). The empirical validity of these theories has been quite controversial. The factors affecting the capital structure have been found to vary across different countries, industries, and firms. Empirical studies have generally investigated the extent to which the trade-off and pecking order theories explain companies' capital structures. Thus, other capital structure theories should also be tested empirically. Future studies may also compare capital structure of tourism and loading companies in various countries. In addition, data limitation problem would be overcome by applying survey-based methods to non-publicly traded tourism companies. This will improve the reliability of the findings. This paper has attempted to build upon the previous financial literature by examining the trade-off theory, pecking order theory and Agency cost theory for the capital structure decisions. A striking results found in this study was that the growth opportunity, Profitability, dividend payout and firm size do significantly relate to the debt ratios of companies. Although, there are possible explanations of these results future research is needed to supplement these initial findings. Clearly, more research is needed on the capital structure of Iranian companies.

References

- Ahmadpour. A. Salimi. A. (2007).The impact of size and industry on capital structure: The evidence from Iran, Journal of social sciences and humanities of Shiraz University, 26, PP, 13-35.

- Ang, J. &McConnel, J. (1982). The administrative cost of corporate bankruptcy: a note. Journal of Finance, 37, pp. 219-226.
- Alexei. V. Ovtchinnikov (2010). Capital structure decisions: Evidence from deregulated industries, Journal of Financial Economics, 95, pp. 249–274.
- Bagherzadeh, S. (2003). The Determinants of Capital Structure Choice: Iranian Evidence, The Iranian Journal of Financial Research, Vol. 5, No.16, pp. 23-47.
- Barton, S., & Hill, N. (1989).An empirical test of stakeholder theory predictions of capital. Financial Management, 18 (1), pp. 36-44.
- Berryman, J. (1982), Small business uniqueness and the theory of financial management. Journal of Small Business Finance, 25, pp. 43-59.
- Bowen, R., Daley, L., & Huber, C. (1982). Evidence on the existence and determinants of inter industry differences in leverage. Financial Management, 11 (4), pp. 10-20.
- Chen..J. (2003). Determinants of capital structure of Chinese-listed companies, Journal of Business Research, 57, pp. 1341-1351.
- Chittenden, F., Hall, G., & Hutchinson, P. (1996). Small firm growth, access to interest on corporate capital structure. Journal of Finance, 43, pp. 271-281.
- Dammon, R., &Senbet, L. (1988).The effect of taxes and depreciation on corporate investment and financial leverage. Journal of Finance, 43 (3), pp. 3-29.
- Eisenhardt, K.M. (1989). "Agency theory: an assessment and review", Academy of Management Review, Vol. 14, pp. 57-74.
- Ekanayake, S. (2004). "Agency theory, national culture and management control systems", The Journal of American Academy of Business Cambridge, Vol. 4 Nos 1/2, pp. 49-54.
- Fama, E., & French, K. (2002). Testing tradeoff and pecking order predictions about dividends and debt. Review of Financial Studies, 15, pp. 1-33.
- Faris M. Mouamer, A. (2011)."The determinants of capital structure of Palestine-listed companies", TheJournal of Risk Finance, Vol. 12 Iss: 3 pp. 226 - 241
- Givoly, D., Hayn, C., Ofer, R., &Sarig, O. (1992). Taxes and capital structure: evidence from firm's response to tax reform act of 1986. The Review of Financial Studies, 5, pp. 331-355.
- Griner, E., & Gordon, L. (1995). Internal cash flow, insider ownership and capital expenditures: a test of pecking order and managerial hypothesis. Journal of Business Finance and Accounting, 22, pp. 179-197.
- [17] Harris, M., &Raviv, A. (1990). Capital structure and the informational role of debt. Journal of Finance, 45 (2), 321-349.
- Hovakimian, A., Opler, T., & Titman, S. (2001).The debt-equity choice. Journal of Financial and Quantitative Analysis, 36, pp. 1-24.
- Ho-Yin Yue, (2011). Determinants of Corporate Capital Structure under Different Debt Maturities, International Research Journal of Finance and Economics ISSN 1450-2887 Issue 66 (2011).
- Jensen, M. (1986). Agency costs of free cash flow, corporate finance and takeovers. American Economic Review, 76, 323-339.
- Jensen, M., &Meckling, W. (1976). Theory of the firm: managerial behavior, agency costs and ownership structure. Journal of Financial Economics, 2, 305-360.
- Khajavi. SH. A. and S.H. Hosseini, (2010). Capital structure and political patronage in Tehran Stock Exchange, Financial Knowledge of security analysis (Financial Study), 3. Pp. 53-65.

- Keshtkar. R. Valipour. H. Javanmard. Ali. (2012). Determinants of Corporate Capital Structure under Different Debt Maturities: Empirical Evidence from Iran, International Research Journal of Finance and Economics, Issue 90. PP. 1-8.
- Kester, W. (1986). Capital and ownership structure: a comparison of United States and Japanese manufacturing corporations. Financial Management, 15, 5-16.
- Lang, L., &Litzenberger, R. (1989). Dividend announcements: cash flow Signaling vs. free cash flow hypothesis? Journal of Financial Economics, pp. 181-191.
- [26] Lucas, D., & McDonald, R. (1990). Equity issues and stock price dynamics. Journal of Finance, 45, 1019-1043.
- Modigliani, F., & Miller, M. (1963). Corporate income taxes and the cost of capital: a correction. American Economic Review, 53, 443-453.
- Modigliani, F., & Miller, M. H. (1958).The cost of capital, corporation finance, and the theory of investment. American Economic Review, 48, 261-275.
- Myers, S. (1977). Determinants of capital borrowing. Journal of Finance Economics, 5, pp. 5147-5175.
- Myers, S.C. and Majluf, N.S. (1984). "Corporate Financing and Investment Decisions When Firms have Information that Investors Dnot Have", Journal of Financial Economics, Vol. 13, PP.187-221.
- Nadem. M, Nabiei. H, Noroozi. M, Madine. S.H. (2012). Determinants of Capital Structure: Evidence from Iranian Listed Companies, International Research Journal of Finance and Economics, 101, PP. 1-9.
- Ooi, J. (1999). The determinants of capital structure: evidence on UK property companies. Journal of Property Investment and Finance, 17 (5), pp. 464-480.
- Rajan, R., &Zingales, L. (1995). What do we know about capital structure? Some Evidence from international data. Journal of Finance, 50, pp. 1421-1460.
- Rungtusanatham, M., Rabinovich, E., Ashenbaum, B. and Wallin, C. (2007). "Vendor-owned inventory management arrangements in retail: an agency theory perspective", Journal of Business Logistics, Vol. 28 No. 1, pp. 111-35.
- Shyam-Sunder, L., & Myers, S. (1999).Testing static trade-off against pecking order models of capital structure. Journal of Financial Economics, 51, 219-244.
- Titman, S., &Wessels, R. (1988). The determinants of capital structure choice. Journal of Finance, 43, pp. 1-19.
- Whited, T. (1992). Debt, liquidity constraints, and corporate investment: evidence from panel data. Journal of Finance, 47, pp. 1425-1460.
- Zu, X, Kaynak. H.(2012).An agency theory perspective on supply chain quality management, International Journal of Operations & Production Management, Vol. 32, pp. 423– 446.