

# Role of Limiting Factors of Financial Structure on Debt Maturity of the Company

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## Abstract

One of the most important financial decisions is the company's financing in any organization. The financial resources in terms of time maturity are divided to short-term and long-term financing. In the present study, the affecting factors on debts structure are examined. The sample consists of 87 manufacturing firms listed in the Tehran Stock Exchange in the period 2006-2010. After testing the hypotheses, the results showed a positive and significant relationship between the four factors: maturity of assets, high growth opportunities, liquidity and accessing to banking sources with maturity of debts. Also there is significant and negative relationship between the five factors: firm size, profits volatility, financial leverage, asset Turnover and tax with debts maturity.

**Key words:** Financial structure, Debt maturity, Financial leverage

## INTRODUCTION

The financial resources in terms of time maturity are divided to short-term and long-term financing; and in terms of place of supplying are divided into two categories: inside and outside the organization. The economic units consider the financing risk, debt maturity and etc., when deciding and selecting the optimal method of financing parallel to the amount of payable interest. The companies' managers follow different policies for financing based on the various affecting factors on debts maturity. Therefore, attention to debt maturity is very important. The various factors impact on the determination of debt maturity, "Momeni, 2008".

On the one hand, the institutions and economic entities particularly operating in industry need to huge capital for its continued existence as well as development of activities. Also, these institutions and economic entities dependent on the financial markets in order to their needed fund highly. The role of these markets is providing the necessary capital to institutions and companies. One of the main points of

financial managers of economic enterprises is the method and amount of financing. Different ways of financing have different costs and the cost of capital in many financial decisions especially in capital budgeting decisions is very importance, "Tirgar Fakheri, 2001".

So in the present paper, the affecting factors on choosing the structure of debt maturity according to the criteria including cost of representation, liquidity, inform, and taxes have been examined. The posed question in this study is whether the economic units pursue different strategies to obtain debt because of financial constraints or not?

## THEORETICAL FOUNDATIONS

### The Capital Structure

The methods of financing are very effective for the continuation of activities and Realization of profitable projects in the growth process of companies also causes continuation of companies' vital in today's competitive world. Financing is done in two ways and companies can supply their financial resources from within the company "for example, retained earnings" or outside the company "like issuance of stock or bonds", "Mashayekh and Shahrokhi, 2006".

The capital structure is considered as the most important parameter affecting the company's valuing also for their orientation in the capital markets. The changing

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environment relates the companies' grading in terms of credit somewhat to their capital structure which this matter has guided their strategic planning to the selection of effective sources on the goal "maximization of shareholder's wealth," Douglas, 2001"

The company's financial structure represents the used long-term funds of the company. Traditionally, the main objective of financial structure decisions is maximizing the company's market value through the right combination of long-term funds. This combination is financial optimal structure which also minimizes the average cost of company's capital. In other words, it should be stated that the financial structure of a company is a combination of short-term and long-term debt and equity which is financed by the assets of the company. A company that has experienced the financial problems is possible to turn the short-term debt to long-term by extending the maturity of its short-term debt. This may be somewhat improve the company's debts and current problems of cash flow. Usually whatever the company's disability risk increases so the interest rate of debt will increase in order to compensate for companies 'higher risk,' Weston, J. Fred; Brigham; Eugen, 1999"

If the company's capital structure change, the total value may change. Changes in capital structure will impact on total value of the firm and its cost of capital. A capital structure where the weighted average cost of capital is minimized is as capital structure in which the total value of the company to be maximized. This capital structure which led to maximizing the total value of the company or minimizing the capital cost is called as optimal capital structure. Management that can reduce their cost of capital will be seeing an increase in the market value of the company. Since the company can change its capital structure and thus can control their cost of capital so can impact on the company's market value indirectly" by changing the capital structure". Since the optimal capital structure led to high total value of the company so the shareholder's wealth will maximize. Therefore the company's aims based on minimizing the capital cost is not incompatible with the aim based on maximizing the shareholder's wealth, "Novo, Raymond, 1999"

## THE RATIOS OF FINANCIAL LEVERAGE

The ratios of financial leverage measure the total debt of the company. These ratios reflect the company's ability to respond to short and long-term company's commitments and are calculated through comparison of fixed costs and profit" profit and loss statements" or by linking debts to equity "balance sheet". The ratios of financial leverage

are important to lenders because they show that does the corporate income cover the fixed costs and interest or not? The shareholders also consider the financial leverage ratios because interest is one of the company's expense items and by increasing the liability so the interest expense also will increase. If the loan and interest cost be excessive so the possibility of bankruptcy increases. Whatever company's income and returns is more predictable so the more debt is acceptable, because the company may not be able to perform its obligations. The companies that have stable revenues and profits are usually high debt ratio. The companies with more volatile profits and revenues usually have less debt, "Taghavi, 1998"

### The Ratio of Debt to Total Assets

This ratio is usually called debt ratio which measures the percent of the total funds that are financed by the creditors in the company. Debts include current debt and all bonds. Usually, the creditors prefer a conventional ratio. Because whatever ratio of debt shows the lower so, they will be faced with fewer losses during the bankruptcy. Conversely, the company's owners like have higher debt ratio. Because it usually gains more income, secondly financing through the sale of stock means loss of company's controlling partly. While the debt ratio is too high the responsibility of shareholders is reduced, because the share of shareholders from investment will be faced with little risk. If the company is successful in their financial affairs so its efficiency will be very much in favor of shareholders and it be unsuccessful loss hurts too low to shareholders, because the amount of shareholders' investment is less than the loan. Generally lenders prefer a lower debt ratio, because this means more supporting for their situation. Higher debt usually means that company should pay more interest rates for receiving the loans or are unable to get the loans.

### Debt Ratio to Equity

This ratio can be achieved through division of debts on total equity. In this case the debt is defined as total debt or long term debt. High debt-to-equity means that a high percentage of long-term financial needs are funded through debts "loans".

In other words, in this case the financial leverage is being used more.

Equity/Long-term debt = the ratio of debt to rights and equity

### Ratio of Interest Payment Ability

This item is obtained through divided by earnings before tax and interest on interest. The ratio of interest payment ability reflects the company's strength in interest payments from the profit of the company. If the profit before tax

and interest be equal to the company's interest payment so the ratio of interest payments can be one, it means that the company can only pay interest on its debt and company's profit will be zero. Generally, ability to pay the interest greater than one is favorable. Because it means that in the coming years the payments interest will be paid to creditors.

### Ratio of Fixed Cost Coverage

It is obtained through divided by available profit for fixed costs payment. The fixed costs include all fixed costs such as the cost of interest on loans, pay rent and so on. The fixed cost is outgoing cash flow that the company without tarnishing their contractual agreements cannot refrain from paying it, such as rent to the owner of the machines. This ratio is important in this regard that shows the available earnings for paying the fixed costs, "Taghavi, 1998".

### Research background

The issue of capital structure for the first time was introduced by Modigliani Miller (1960) that valuation of companies based on assets and the manner of financing depend on capital structure. According to the researches, in certain circumstances, which are called the efficient market, the capital structure is a key factor in determining the company's value. According to Michels and others (1991) researches on the capital structure at any point of time, only portrays the part of reality. For this reason different researchers in studying on the effect of company's internal and external variables on capital structure achieved to dissimilar results according to situations and different economic and cultural environments. For example Titman & Wessels (1998) and also Harris & Raviv (1991) argue that selection of explanatory effective variables is in trouble due to uncertainty about efficacy and same effect for most companies, "Sinaei and Rezaeiyan, 2005"

Chittenden, F and et al (2000) studied on the growth opportunities of Small companies, access to capital markets and financial structure. They showed that the external organizational financing costs of smaller companies are more.

Michaeles and et al (2000) in their research showed that the effective tax rate does not impact on capital structure and financing practices of English companies. A survey conducted on the growth and future growth opportunities also showed significant and positive relationship with the capital structure. It also referred to strong relationship between capital structure and asset structure also indicates that there is positive relationship between fixed asset components with high liability levels.

Daskalakis, N., & Psillaki, M (2005) investigated on the determinants of capital structure of SMEs in Greece

and France. This study was conducted on 1252 Greek companies and 2006 French companies during a six years period from 1997 to 2002. The results showed that the structure of assets and profitability has a negative relationship with debt ratios in each country and there is a positive relationship between firm size and growth opportunities with capital structure.

Sogorb, F (2005) in an article with title impact of characteristics of small companies on their capital structure in Spain stated that there is negative relationship between tax shields and profitability of the firms with capital structure. While the size, growth opportunities and the structure of assets in these companies have positive effects on capital structure.

Haung, G., & Song, F.M (2006) with studying on more than 1,200 Chinese companies in the period 1994 to 2003 concluded that the financial leverage has direct relationship with the firm size as well as fixed assets in the Chinese companies, but has reverse relationship with profitability and growth opportunities.

Kailan Cai and et al (2009) studied on the determining elements of capital structure of Chinese companies. The results indicated that financial leverage has negative and significant relationship with earnings volatility and it has significant and positive relationship with the size and growth rate.

Mohamadi, H (2001) investigated on the role of capital structure in returns of debts of companies listed in the Tehran Stock Exchange. He concluded that:

1. There is not any relationship between method of financing and assets turnover ratio.
2. There is not any relationship between methods of financing and proprietary ratio.

In comparison with developed countries, due to low profitability and limiting access to markets use less of long-term debts in developing countries notably.

Sajadi, Ha et al (2007), in an article with title the capital structure of small companies and entrepreneurs showed that there is significant relationship between the firm size with the company's capital structure.

Namazi, M and et al (2007) studied on the effect of structures and lag variables on the capital structure of listed companies in Tehran Stock Exchange. They concluded that there is a significant relationship between the ratios of market value on the book value of the company's assets with capital structure.

Hashemi, A and et al (2008) in an article with title identification of tax affecting factors on the advantage of using the liability to finance the companies listed on the Stock Exchange. The results indicate that at the same time with reduction of company's tax rate so using of debt is also reduced.

Kazemnezhad and et al (2009) evaluated the application of genetic algorithms in determining the optimal capital structure of listed companies in Tehran Stock Exchange. The results indicated that there is negative relationship between capital structure and return on assets.

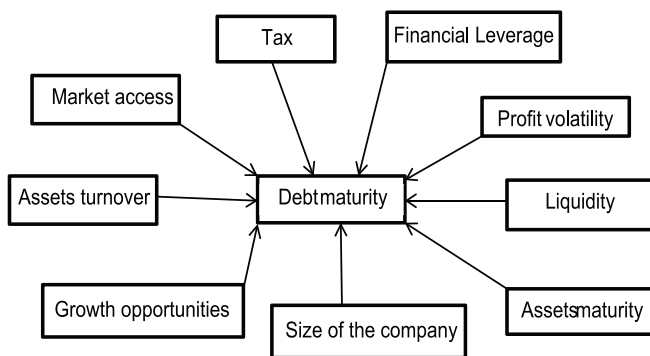
Fakhari, H and et al(2009) in an article with title quality of accruals and cash balances showed that the variables of growth opportunities, cash flow and cash assets all have a positive effect on cash balances and variables of size, debt maturity and opportunity cost all have a negative relationship with ash balance.

**Research Methodology**

The research method can be a set of rules, tools and reliable and regular ways that is used for studying on the facts, discovering the unknowns and achieving the solutions on the problems, "Ezati, 1997"

In the following the assumptions and variables and then the period of research, research models, statistical population, sample and the methods of data collection all will be stated. Finally the statistical methods and the manner of testing the each hypothesis will be introduced independently.

The conceptual model of the research



Considering that the Stock Exchange in Iran is the only organization that is having available information and there are not any comprehensive information centers and another that could use of their information for research centers and researchers. So, our aim was to investigate the whole society of companies in the stock exchange. But given the time domain, the selected companies were evaluated for the 5 years period.

**THE STATISTICAL POPULATION AND SAMPLING**

In this paper, the companies in Tehran Stock Exchange are selected as the statistical population. The sampling method is as elimination and includes all members of the population. Except companies that their data are not available for calculating the variables or the possibility of calculating the variables is not possible for them. Therefore, all member companies of Tehran Stock Exchange were selected as statistical population. Finally, after reviewing the financial statements, only was achieved to information of 86 companies and they were examined as samples. In this paper, trading lag of these companies is in the range of  $5 > \text{trading lag} \geq 0$  day during the period 2006-2010.

**ANALYSIS OF STATISTICAL DATA**

The data were classified by statistical methods.

Test of research hypotheses

The first hypothesis. The relationship between assets maturity and debt maturity is positive and significant.

Since structure of short-term debt maturity for accordance with structure of assets could help the reduction of Agency costs and risk changes as a result, the assets maturity has a positive impact on the debts maturity.

The relationship between the assets maturity and debts maturity is positive and significant. So that the effect of assets maturity "9.26E-05" has the first effect on the debts maturity and this impact is acceptable at 95% confidence level. The adjusted determination coefficient of the pattern "0.373117" suggests that 37% of changes in debt maturity are expressed by the variables included in the model. Therefore, we can say that this model has a weak strength. The DW statistic about "1.592147" is between 2.5 and 1.5. Therefore, there is not significant correlation between the not mentioned independent variance in the model. In other words, there are independent error terms in this pattern. The F statistic "3.030662" shows the linear fitting of the pattern. The significant level of F statistical confirmed the linearity of the pattern at 95% confidence level. Thus, linear interpretation of the impact of asset maturity on liabilities maturity is acceptable.

The second hypothesis. The relationship between the size of the company and debts maturity is positive and significant.

Based on the Agency theory, the larger companies issued more long-term securities, so that they can control their

behavior and management decisions. But the smaller companies less likely to issue long-term debt because they controlled by shareholders. So we can say that the firm size has a direct relationship with debt maturity.

The relationship between the firm size and debt maturity is negative and significant. So that the effect of firm size "0.220934" is a fourth impact on the debt maturity. This impact is acceptable at 95% confidence level. This relationship is compared at three levels: All, Low, Medium. At the all level the adjusted determination coefficient "0.373117" suggests that the 37% changes of debt maturity expressed by variables included in the model. Therefore, we can say that this model has a weak strength. The DW statistic about "1.592147" is between 2.5 and 1.5. Therefore, there is not significant correlation between the not mentioned independent variance in the model. In other words, there are independent error terms in this pattern. The F statistic "3.030662" shows the linear fitting of the pattern. The significant level of F statistical confirmed the linearity of the pattern at 95% confidence level. Thus, linear interpretation of the impact of firm size on debt maturity is acceptable. At the low level, the adjusted determination coefficient "0.087749" indicates that 9% of changes in debt maturity expressed by the variables included in the model. Therefore, we can say that this model has a weak strength. The DW statistic about "2.445576" is between 2.5 and 1.5. Therefore, there is not significant correlation between the not mentioned independent variance. In other words, there are independent error terms in this pattern. The F statistic "2.004642" shows the linear fitting of the pattern. The significant level of F statistical confirmed the linearity of the pattern at 95% confidence level, thus, linear interpretation of the impact of firm size on debt maturity is acceptable. At the medium level, the adjusted determination coefficient "0.446584" indicates that 45% of changes in debt maturity expressed by the variables included in the model. Therefore, we can say that this model has a Moderate strength. The DW statistic about "1.628588" is between 2.5 and 1.5. Therefore, there is not significant correlation between the not mentioned Independent variance in the model. In other words, there are independent error terms in this pattern. The F statistic "3.898463" shows the linear fitting of the pattern. The significant level of F statistical confirmed the linearity of the pattern at 95% confidence level. Thus, linear interpretation of the impact of firm size on debt maturity is acceptable.

The third hypothesis: the relationship between high-growth opportunities with debt maturity is negative and significant.

The companies with growth opportunities are faced with short-term debt maturity reduce the Agents conflict;

because the short-term debt react toward the changes in risk less. Also reduces the agency costs by investors' frequent monitoring.

The relationship between high growth opportunities with debt maturity is positive and significant. So that the effect of growth rate "0.144930" is a sixth impact on the debt maturity. This impact is acceptable at 95% confidence level, and growth opportunity "-1.221685" third impact on the debt maturity that this impact is acceptable at 95% confidence level. The adjusted determination coefficient "0.373117" suggests that the 37% changes of debt maturity expressed by variables included in the model. Therefore, we can say that this model has a weak strength. The DW statistic about "1.592147" is between 2.5 and 1.5. Therefore, there is not significant correlation between the not mentioned Independent variance in the model. In other words, there are independent error terms in this pattern. The F statistic "3.030662" shows the linear fitting of the pattern. The significant level of F statistical confirmed the linearity of the pattern at 95% confidence level. Thus, linear interpretation of the impact of high-growth opportunities on debt maturity is acceptable.

The fourth hypothesis: the relationship between asset turnover with debt maturity is negative and significant.

A group of descriptions related to asymmetric information about the quality is borrower. Under these circumstances, the companies are trying to make quality, by the signs. These symptoms can include dividend and ratio of debt to net assets or short-term debt. So the companies that have high credit value 'asset turnover' will turn to short-term debt. In fact, according to the signaling hypothesis and liability maturity can be concluded that higher turnover has a negative relationship with debt maturity.

The relationship between asset turnover and debt maturity is negative and significant. So that the effect of asset turnover "-0.013191" is a ninth effect impact on the debt maturity. This impact is acceptable at 95% confidence level. The adjusted determination coefficient "0.373117" suggests that the 37% changes of debt maturity expressed by variables included in the model. Therefore, we can say that this model has a weak strength. The DW statistic about "1.592147" is between 2.5 and 1.5. Therefore, there is not significant correlation between the not mentioned independent variance in the model. In other words, there are independent error terms in this pattern. The F statistic "3.030662" shows the linear fitting of the pattern. The significant level of F statistical confirmed the linearity of the pattern at 95% confidence level. Thus,

**Table 1: The operational definition of the variables**

Type	Variable	Symbol	Relation
Dependent	Debtmaturity	DebtM <sub>it</sub>	DebtM <sub>it</sub> =LTD <sub>it</sub> /TD <sub>it</sub>
-	Non-current Long term debt	LTD	Derived from balance sheet
-	Totaldebts	TD	Derived from balance sheet
Interferer	size of the company	Size <sub>it</sub>	Size <sub>it</sub> =Ln (TA <sub>it</sub> )
-	Total assets	TA	Derived from balance sheet
Interferer	Financial leverage	Lev <sub>it</sub>	Lev <sub>it</sub> =TD <sub>it</sub> /TA <sub>it</sub>
Interferer	Current ratio	CR <sub>it</sub>	CR <sub>it</sub> =CA <sub>it</sub> /CL <sub>it</sub>
-	Current assets	CA	Derived from balance sheet
-	Current liability	CL	Derived from balance sheet
Independent	Assets maturity	ASS.M <sub>it</sub>	ASS.M <sub>it</sub> = (TFA <sub>it</sub> - lan <sub>it</sub> )/Dep <sub>it</sub>
-	Tangible fixed assets	TFA	Derived from balance sheet
-	The land	lan	Derived from balance sheet
-	Depreciation expense	Dep	Derived from the income statement
Independent	Tax rate	TXR <sub>it</sub>	TXR <sub>it</sub> =TxEx <sub>it</sub> /IBT <sub>it</sub>
-	Tax expense	TxExit	Derived from the income statement
-	Profit before tax	IBT <sub>it</sub>	Derived from the income statement
Independent	Sales growth rate compared to the book value of assets	Growth <sub>it</sub>	Growth <sub>it</sub> =(ΔTS <sub>it</sub> /S <sub>it-1</sub> )/(ΔTA <sub>it</sub> /TA <sub>it-1</sub> )
-	Sales Year t-1	Sit-1	Derived from the income statement
Independent	Rate of sales growth compared to the market value of assets	Growth <sub>it</sub>	Growth <sub>it</sub> =ΔTS <sub>it</sub> /(ΔMVE <sub>it</sub> +ΔTD <sub>it</sub> )
-	Changes in the company's stock market value	ΔMVEit	MVEit-MVEit-1
Control	Profit volatility	Vol <sub>it</sub>	Vol <sub>it</sub> =Ln SD (RE <sub>it</sub> /TA <sub>it</sub> , RE <sub>it-1</sub> /TA <sub>it-1</sub> )
Independent	Asset turnover	ATO <sub>it</sub>	ATO <sub>it</sub> =TS <sub>it</sub> /TA <sub>it</sub>
Control	Level of access to money market	Acces	1 If obtaining loan in year t 0 If absence of obtaining loan in year t
Independent	The share of assets from the facilities from the banks	Loan <sub>it</sub>	Loan <sub>it</sub> =loan <sub>it</sub> \ TA <sub>it</sub>
Independent	Industry type	IND <sub>it</sub>	n for industry, n-1 dummy variable is defined

**Table 2: The test of the relationship between assets maturity with debt maturity**

Description	All	
	Coefficient	Significant
C	2.9888128	0
ASSM	9.26E-05	0.9392
SIZE	-0.220934	0.0001
DGROWTH	0.14493	0.0018
GROWTH	-1.14493	0
ATO	-0.013191	0.7217
VOL	-0.006029	0.0035
CR	0.011442	0.0451
LEV	-0.02583	0.6296
ACCESS	0.020409	0.1078
TXR	-0.002662	0.6183
AR (1)	-0.160608	0.4698
Determinationcoefficient	0.556859	
Adjusted determination coefficient	0.373117	
DW	1.592147	
F statistic	3.030662	
F Significance level	0	
The dependent variable	DEBTMATURE	

linear interpretation of the impact of asset turnover on debtmaturity is acceptable.

Fifth hypothesis: the relationship between profit volatility with debts maturity is negative and significant.

The companies with higher volatility and risks in their income haveless power for long-term financial resources.

As a result, it can be said that profit volatility has negative relationship with debtmaturity.

The relationship between profit volatility with debts maturity is negative and significant. So that the effect of profit volatility “-0.006029” is aseleventh impact on the maturityliabilities. This impact is acceptable at 95% confidence level. The adjusted determination coefficient “0.373117” suggests that the 37% changes of debtmaturity expressed by variables included in the model. Therefore, we can say that this model has a weak strength. The DW statistic about “1.592147”is between 2.5 and 1.5. Therefore, there is not significant correlation between the not mentioned independent variance in the model.In other words, there are independenterror terms in this pattern. The F statistic “3.030662” shows the linear fitting of the pattern. The significant level of F statistical confirmed the linearity of the pattern at 95% confidence level. Thus, linear interpretation of the impact of profit volatility on debtmaturity is acceptable.

Sixth hypothesis: the relationship between liquidity withdebts maturity is negative and significant.

According to signaling theory, high liquidity is a positive sign of reliability and quality of the company also ability to repay its debt. Thereforethe facilities donors and sponsors are willing to provide the facilities and long-

**Table 3: The test of the relationship between the firm size and debt maturity**

Description	All		Low		Medium	
	Coefficient	Significant	Coefficient	Significant	Coefficient	Significant
C	2.988128	0.0000	-0.124851	0.1427	0.037522	0.2494
ASSM	9.26E-05	0.9392	0.014366	0.0003	0.000978	0.2036
SIZE	-0.220934	0.0001				
DGROWTH	0.144930	0.0018	-0.280301	0.2246		
GROWTH	-1.221685	0.0000	-0.494481	0.8571	74.21590	0.5357
ATO	-0.013191	0.7217	-0.039681	0.5317	0.001499	0.8126
VOL	-0.006029	0.0035	-0.000569	0.9827	-0.009144	0.0718
CR	0.011442	0.0451	0.035737	0.3592	0.011706	0.2379
LEV	-0.025830	0.6296	0.041173	0.6822	-0.033682	0.3513
ACCESS	0.020409	0.1078	0.024893	0.6106	-0.013724	0.1799
TXR	-0.002662	0.6183	-0.001829	0.5647	0.002430	0.7496
AR (1)	-0.160608	0.4698				
The determination coefficient	0.556859		0.175092		0.600660	
The Adjusted determination coefficient	0.373117		0.087749		0.446584	
DW	1.592147		2.445576		1.628588	
F statistic	3.030662		2.004642		3.898463	
F Significance level	0.000000		0.048451		0.000000	
The dependent variable	DEBTMATURE		DEBTMATURE		DEBTMATURE	

**Table 4: The test of the relationship between high growth opportunities and debt maturity**

Description	All	
	Coefficient	Significant
C	2.988128	0.0000
ASSM	9.26E-05	0.9392
SIZE	-0.220934	0.0001
DGROWTH	0.144930	0.0018
GROWTH	-1.221685	0.0000
ATO	-0.013191	0.7217
VOL	-0.006029	0.0035
CR	0.011442	0.0451
LEV	-0.025830	0.6296
ACCESS	0.020409	0.1078
TXR	-0.002662	0.6183
AR (1)	-0.160608	0.4698
The determination coefficient	0.556859	
The adjusted determination coefficient	0.373117	
DW	1.592147	
F statistic	3.030662	
F Significance level	0.000000	
The dependent variable	DEBTMATURE	

term investment. So, high liquidity enables the company to needed funding from long-term funds.

The relationship between liquidity with debt maturity is positive and significant. So that the effect of liquidity "0.011442" is a stenth impact on the maturity debts. This impact is acceptable at 95% confidence level. This relationship is compared at three levels: All, High, Low. At the All level the adjusted determination coefficient "0.373117" suggests that the 37% changes of debts maturity expressed by variables included in the model. Therefore, we can say that this model has a weak strength. The DW statistic about "1.592147" is between 2.5 and 1.5. Therefore, there is not significant correlation between the not mentioned

independent variance in the model. In other words, there are independent error terms in this pattern. The F statistic "3.030662" shows the linear fitting of the pattern. The significant level of F statistical confirmed the linearity of the pattern at 95% confidence level. Thus, linear interpretation of the impact of profit volatility on debts maturity is acceptable. At the High level the adjusted determination coefficient "0.404379" suggests that the 40% changes of debts maturity expressed by variables included in the model. Therefore, we can say that this model has a moderate strength. The DW statistic about "1.744632" is between 2.5 and 1.5. Therefore, there is not significant correlation between the not mentioned independent variance in the model. In other words, there are independent error terms in this pattern. The F statistic "2.523797" shows the linear fitting of the pattern. The significant level of F statistical confirmed the linearity of the pattern at 95% confidence level. Thus, linear interpretation of the impact of firm size on debts maturity is acceptable. At the Low level the adjusted determination coefficient "0.661116" suggests that the 66% changes of debts maturity expressed by variables included in the model. Therefore, we can say that this model has a moderate strength. The DW statistic about "2.49988" is between 2.5 and 1.5. Therefore, there is not significant correlation between the not mentioned independent variance in the model. In other words, there are independent error terms in this pattern. The F statistic "7.347575" shows the linear fitting of the pattern. The significant level of F statistical confirmed the linearity of the pattern at 95% confidence level. Thus, linear interpretation of the impact of firm size on debts maturity is acceptable.

The seventh hypothesis: the relationship between financial leverage and debts maturity is positive and significant.

**Table 5: The test of the relationship between asset turnover and debt maturity**

Description	All	
	Coefficient	Significant
C	2.988128	0.0000
ASSM	9.26E-05	0.9392
SIZE	-0.220934	0.0001
DGROWTH	0.144930	0.0018
GROWTH	-1.221685	0.0000
ATO	-0.013191	0.7217
VOL	-0.006029	0.0035
CR	0.011442	0.0451
LEV	-0.025830	0.6296
ACCESS	0.020409	0.1078
TXR	-0.002662	0.6183
AR (1)	-0.160608	0.4698
The determination coefficient	0.556859	
The Adjusted determination coefficient	0.373117	
DW	1.592147	
F statistic	3.030662	
F Significance level	0.000000	
The dependent variable	DEBTMATURE	

**Table 6: The test of the relationship between profit volatility and debt maturity**

Description	All	
	Coefficient	Significant
C	2.988128	0.0000
ASSM	9.26E-05	0.9392
SIZE	-0.220934	0.0001
DGROWTH	0.144930	0.0018
GROWTH	-1.221685	0.0000
ATO	-0.013191	0.7217
VOL	-0.006029	0.0035
CR	0.011442	0.0451
LEV	-0.025830	0.6296
ACCESS	0.020409	0.1078
TXR	-0.002662	0.6183
AR (1)	-0.160608	0.4698
The determination coefficient	0.556859	
The Adjusted determination coefficient	0.373117	
DW	1.592147	
F statistic	3.030662	
F Significance level	0.000000	
The dependent variable	DEBTMATURE	

The liquidity risk is considered as a reverse criterion for current ratio that has negative effect on debts maturity according to financial leverage. Thus, the companies with low financial leverage have low liquidity risk so can have short-term bonds.

The relationship between financial leverage and debts maturity is negative and significant. So that the effect of financial leverage "0.025830" is as seventh impact on the debts maturity. This impact is acceptable at 95% confidence level. This relationship is compared at three levels: All, High, Low. At the All level the adjusted determination

coefficient "0.373117" suggests that the 37% changes of debts maturity expressed by variables included in the model. Therefore, we can say that this model has a weak strength. The DW statistic about "1.592147" is between 2.5 and 1.5. Therefore, there is not significant correlation between the not mentioned independent variance in the model. In other words, there are independent error terms in this pattern. The F statistic "3.030662" shows the linear fitting of the pattern. The significant level of F statistical confirmed the linearity of the pattern at 95% confidence level. Thus, linear interpretation of the impact of financial leverage on debts maturity is acceptable. At the high level the adjusted determination coefficient "0.209175" suggests that the 21% changes of debts maturity expressed by variables included in the model. Therefore, we can say that this model has a weak strength. The DW statistic about "2.150730" is between 2.5 and 1.5. Therefore, there is not significant correlation between the not mentioned independent variance in the model. In other words, there are independent error terms in this pattern. The F statistic "5.198967" shows the linear fitting of the pattern. The significant level of F statistical confirmed the linearity of the pattern at 95% confidence level. Thus, linear interpretation of the impact of firm size on debts maturity is acceptable. At the Low level the adjusted determination coefficient "0.301285" suggests that the 30% changes of debts maturity expressed by variables included in the model. Therefore, we can say that this model has a weak strength. The DW statistic about "1.627898" is between 2.5 and 1.5. Therefore, there is not significant correlation between the not mentioned independent variance in the model. In other words, there are independent error terms in this pattern. The F statistic "2.170397" shows the linear fitting of the pattern. The significant level of F statistical confirmed the linearity of the pattern at 95% confidence level. Thus, linear interpretation of the impact of firm size on debts maturity is acceptable.

Eighth hypothesis: The relationship between easy access to banking resources and debts maturity is positive and significant.

Whatever achieving to capital be easier or done more easily so the owner will be in search of capital and vice versa. Significantly, access to outside the organization financial resources will weaken and undermine the liquidity constraints. While financial disputes and imposing a high price for achieving to correct and accurate information will increase the cost of long-term debt. So access to capital markets is an important factor on the firm's debt structure.

The relationship between easy access to banking resources and debts maturity is positive and significant. So that



**Table 7: The test of the relationship between liquidity and debt maturity**

Description	All		High		Low	
	Coefficient	Significant	Coefficient	Significant	Coefficient	Significant
C	2.988128	0.0000	-0.013784	0.6117	0.092088	0.0054
ASSM	9.26E-05	0.9392	0.000348	0.3288	-0.000554	0.3454
SIZE	-0.220934	0.0001	0.004105	0.0227	-0.002869	0.1677
DGROWTH	0.144930	0.0018	-0.013459	0.2208	-0.030001	0.1036
GROWTH	-1.221685	0.0000	3.596640	0.0000	1.470274	0.9212
ATO	-0.013191	0.7217	-0.016296	0.2939	-0.006067	0.1134
VOL	-0.006029	0.0035	-0.003883	0.4863	0.003598	0.1554
CR	0.011442	0.0451				
LEV	-0.025830	0.6296	-0.005426	0.7918	0.011865	0.1531
ACCESS	0.020409	0.1078	-0.006994	0.3684	0.007874	0.2807
TXR	-0.002662	0.6183	-0.000376	0.5908	-0.001775	0.1620
AR (1)	-0.160608	0.4698				
DEBTMATURE(-1)			0.025109	0.5261		
The determination coefficient	0.556859		0.669755		0.765268	
The Adjusted determination coefficient	0.373117		0.404379		0.661116	
DW	1.592147		1.744632		2.49988	
F statistic	3.030662		2.523797		7.347575	
F Significance level	0.000000		0.000554		0.000000	
The dependent variable	DEBTMATURE		DEBTMATURE		DEBTMATURE	

**Table 8: The test of the relationship between financial leverage and debt maturity**

Description	All		High		Low	
	Coefficient	Significant	Coefficient	Significant	Coefficient	Significant
C	2.988128	0.0000	-0.033761	0.8070	3.230779	0.0411
ASSM	9.26E-05	0.9392				
SIZE	-0.220934	0.0001	0.007148	0.3794	-0.248776	0.0384
DGROWTH	0.144930	0.0018	-0.012158	0.2219	0.006296	0.5436
GROWTH	-1.221685	0.0000	-0.713702	0.0000	-69.97931	0.2436
ATO	-0.013191	0.7217	0.004987	0.0000	0.067780	0.1157
VOL	-0.006029	0.0035	0.000575	0.1411	0.056527	0.0023
CR	0.011442	0.0451	-0.039691	0.4166	0.026918	0.2521
LEV	-0.025830	0.6296				
ACCESS	0.020409	0.1078	0.054382	0.0118	0.016472	0.4733
TXR	-0.002662	0.6183	0.000386	0.5673	0.000329	0.3883
AR (1)	-0.160608	0.4698			-0.257269	0.2783
The determination coefficient	0.556859		0.258990		0.558706	
The Adjusted determination coefficient	0.373117		0.209175		0.301285	
DW	1.592147		2.150730		1.627898	
F statistic	3.030662		5.198967		2.170397	
F Significance level	0.000000		0.000014		0.000198	
The dependent variable	DEBTMATURE		DEBTMATURE		DEBTMATURE	

the effect of access to banking resources “0.020409” is aseighth impact on the debts maturity. This impact is acceptable at 95% confidence level. The adjusted determination coefficient “0.373117” suggests that the 37% changes of debts maturity expressed by variables included in the model. Therefore, we can say that this model has a weak strength. The DW statistic about “1.592147” is between 2.5 and 1.5. Therefore, there is not significant correlation between the not mentioned independent variance in the model. In other words, there are independent error terms in this pattern. The F statistic “3.030662” shows the linear fitting of the pattern. The significant level of F statistical confirmed

the linearity of the pattern at 95% confidence level. Thus, linear interpretation of the impact of access to banking resources on debts maturity is acceptable.

Ninth hypothesis: The relationship between tax and debts maturity is positive and significant.

By assuming all other factors being constant, whatever the amount of the company’s debt is greater so the tax savings will be more and as a result the capital cost of that company is lower. So a company in order to use more of the tax savings attempt to grandiosity of capital cost through the issue of long-term bonds.

**Table 9: The test of the relationship between easily access to the bond market and debt maturity**

Description	All	
	Coefficient	Significant
C	2.988128	0.0000
ASSM	9.26E-05	0.9392
SIZE	-0.220934	0.0001
DGROWTH	0.144930	0.0018
GROWTH	-1.221685	0.0000
ATO	-0.013191	0.7217
VOL	-0.006029	0.0035
CR	0.011442	0.0451
LEV	-0.025830	0.6296
ACCESS	0.020409	0.1078
TXR	-0.002662	0.6183
AR (1)	-0.160608	0.4698
The determination coefficient	0.556859	
The adjusted determination coefficient	0.373117	
DW	1.592147	
F statistic	3.030662	
F Significance level	0.000000	
The dependent variable	DEBTMATURE	

**Table 10: The test of the relationship between taxes with debt maturity**

Description	All	
	Coefficient	Significant
C	2.988128	0.0000
ASSM	9.26E-05	0.9392
SIZE	-0.220934	0.0001
DGROWTH	0.144930	0.0018
GROWTH	-1.221685	0.0000
ATO	-0.013191	0.7217
VOL	-0.006029	0.0035
CR	0.011442	0.0451
LEV	-0.025830	0.6296
ACCESS	0.020409	0.1078
TXR	-0.002662	0.6183
AR (1)	-0.160608	0.4698
The determination coefficient	0.556859	
The adjusted determination coefficient	0.373117	
DW	1.592147	
F statistic	3.030662	
F Significance level	0.000000	
The dependent variable	DEBTMATURE	

The relationship between tax and debts maturity is negative and significant. So that the effect of tax “-0.002662” is a twelfth impact on the debts maturity. This impact is acceptable at 95% confidence level. The adjusted determination coefficient “0.373117” suggests that the 37% changes of debts maturity expressed by variables included in the model. Therefore, we can say that this model has a weak strength. The DW statistic about “1.592147” is between 2.5 and 1.5. Therefore, there is not significant correlation between the not mentioned independent variance in the model. In other words, there are independent error terms in this pattern. The F statistic “3.030662” shows the linear

fitting of the pattern. The significant level of F statistical confirmed the linearity of the pattern at 95% confidence level. Thus, linear interpretation of the impact of tax on debts maturity is acceptable.

## THE CONCLUSIONS AND RECOMMENDATIONS OF THE RESEARCH

### The Results Related to the First Hypothesis

In the first hypothesis, the impact of asset maturity on debts maturity was examined. The obtained results showed a positive and significant relationship between the assets maturity, so that the effect of the assets maturity is as the first effective factor on the debt maturity. The matching principle of using the short-term debt to match the assets maturity suggests that the results were confirmed also in line with research of Michels et al”2000” and Sogorb, F”2005”.

### The Results Related to the Second Hypothesis

In the second hypothesis, the impact of firm size on debts maturity was studied. The results showed, the relationship between firm size and debts maturity is negative and significant, so that the firm size has fourth impact on the debt maturity that is inconsistent with the results of the research of Sogorb, F”2005” and Kailan Cai and al”2009” and is aligned with research of Hosein Sajadi and et al”2007”.

### The Results Related to the Third Hypothesis

In this hypothesis, the relationship between high growth opportunities and debts maturity was evaluated. The companies with high growth opportunity have to use more short-term debt in order to reduce the agency costs and the results of testing the relationship between high-growth opportunities with debt maturity is negative and significant that shows the obtained results are consistent with research of Kailan Cai et al “2009”.

### The Results Related to the Fourth Hypothesis

In this hypothesis, we investigated the relationship of assets turnover with debts maturity. The results showed that asset turnover has a significant negative relationship with debts maturity. This relationship is known as the ninth effect on debts maturity. It means a company that has more assets turnover uses of more short-term debt. This can be caused by incentive to avoid the additional cost resulting from the payment of interest on long-term debt. The results are in line with the research of Michels et al. “2000”.

### The Results Related to the Fifth Hypothesis

In this hypothesis, the relationship between profit volatility and debts maturity was examined. The results showed that

the relationship between profit volatility and debts maturity is negative and significant. Somehow, it has eleventh impact on the debts maturity. In fact, the companies that their revenues faced with higher volatility and risks so they have less power for receiving the long-term funds. So it can be said that profit volatility has negative relationship with debt maturity.

### The Results Related to Sixth Hypothesis

The companies with high liquidity have low liquidity risk and no justification to avoid long-term debt. Thus, in the sixth hypothesis relationship between liquidity with debt maturity was examined and showed the relationship between liquidity with debts maturity is positive and significant. So that liquidity has tenth impact on debt maturity. This relationship has been investigated and compared in two upper and lower levels which at high level stated the 40% of changes of debt maturity. At low level stated the 66% of changes of debt maturity are expressed by variables related to liquidity. The obtained results are unlike research of Hosein Fakhari and et al "2009".

### The Results Related to Seventh Hypothesis

In the seventh hypothesis, the impact of financial leverage on debts maturity was studied and showed a negative and significant relationship between financial leverage and debts maturity, so that the effect of financial leverage has seventh effect on debts maturity. This relationship was compared at three levels: High, Low, All. The financial leverage ratios are important for lenders, because it shows the company's ability to repay the loan. Therefore, the companies with lower financial leverage have ability to achieve the long-term funds. On the other hand, there is no reason for firms with low levels of financial leverage to avoid short-term debt, because they have low liquidity risk. The results are in line with research of Diamond "1991".

### The Results Related to Eighth Hypothesis

In the eighth hypothesis, impact of access to banking resources on the debts maturity was studied. The results show that the relationship between accesses to banking resources with debts maturity is positive and significant. Whatever achieving to capital be easier so cost of achieving to long-term capitals decreased then it caused used more of long-term debts. These results are consistent with research of Hamid Reza Mohammadi "2001".

### The Results Related to Ninth Hypothesis

In the ninth hypothesis the impact of taxes on the debts maturity was studied. The results show financial relationship with maturity of debts is negative and significant. In other words, since the cost of debt, for tax purposes is acceptable so the companies with issuance of long-term bonds and using the long-term funds attempt to

enlarge their debts, with this aim that this type of financing costs are deductible from taxable income and will cause tax savings. The results of the research are consistent with the research of Miller, M.H. and Modigliani, F. "1963", Brick, I.E., & Ravid, A.S. "1985" and Abbas Hashemi et al "2008".

## THE RESEARCH RECOMMENDATIONS

1. In relation to the third hypothesis is proposed the companies with higher growth opportunities use of issuance of stock for financing of their projects and operations.
2. It is better the risk-averse companies led to issuance of stock in order to finance from borrowing, because reduction or non-payment of dividends would create fewer problems for managers, because the company is not committed to paying profit to the shareholders. While in the case of borrowing, if the company does not fulfill its obligations timely so it will led to bankruptcy.
3. In the companies with high risk of wasting resources by managers financing is recommended through borrowing more than the issuance of stock. Because according to the free cash flow hypothesis borrowing increases firm value by reducing the waste of resources opportunities.

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