

Investigating the Relationship between Capital Structure and Company Value in Iranian Stock Market

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ABSTRACT

The capital structure represents the ratio of capital to different sources. One of the duties of financial managers is the increase of shareholders' wealth, and one of the major concerns of managers is to determine the composition of the company's capital structure. The discussion of capital structure refers to how the company finances sources of finance, such as short-term debt, bonds, long-term debt, preferred shares and ordinary shares. This research investigates the relationship between capital structure and company value in the Iranian stock market. The statistical population of this research is all active companies in Tehran Stock Exchange between 2012-2017. The purpose of this research is to investigate "applied" and "descriptive". The results of the research showed that there is a significant and inverse relationship between the total debt to assets and the value of the company in the Iranian stock market. Also, there is a significant relationship between the price to book value and the value of the company in the stock market in Iran. Finally, there is a meaningful relationship between the price to earnings ratio and the value of the company in the stock market in Iran.

KEYWORDS

Capital structure, company value, debt, assets

INTRODUCTION

The capital structure represents the ratio of capital to different sources. One of the duties of financial managers is the increase of shareholders' wealth, and one of the major concerns of managers is to determine the composition of the company's capital structure (Hassanzadeh and Azimi, 2016: 10). The discussion of capital structure refers to how the company finances sources of finance, such as short-term debt, bonds, long-term debt, preferred shares and ordinary shares. Some companies do

not take any predetermined plans for their capital structure, and they will only change the structure of the company, in accordance with the financial decisions made by the financial management, without any specific plans. Although these companies may succeed in the short term, they ultimately face major challenges in financing their operations, which may affect the value of the company. Therefore, such companies may not be able to use the best of their existing resources. As a result, the fact is more that a company must plan its capital structure in such a way that it can maximize productivity and adapt its situation more easily to changing conditions. Companies have to plan their initial capital structure when setting up a unit, and then, if the funds are needed to make investments, capital structure decisions are affected (Jabbari and Naghdi, 2017).

Therefore, in the leading research, the relationship between capital structure and corporate value was investigated based on a set of information of listed companies in Tehran Stock Exchange. However, there is little published research on the question of whether the capital structure affects the value of bourse firms. This research is one of the few research that has been devoted to raising the literary history of capital structure decisions relative to the value of companies created with regard to the value of shareholders in the field of economic change.

PROBLEM STATEMENT

With the expansion of trade and industry and the creation of distance between owners and business managers, there is a clear contrast between the interests of managers and owners, and this contradiction is due to their different goals. So that each side tries to maximize its own interests (Yazdani, Khoda shahri, 2011: 15). One of the methods used to maximize shareholder wealth is the proper selection of the main sources of finance. In which the combination of financial resources with characteristics such as low cost of capital and higher returns, the capital structure that increases the value of the company or minimizes the total cost of

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capital is the optimal capital structure of the company (Barazandeh, 2007) and this optimal capital structure is a combination of debt and equity, and when the stock has a high liquidity, the cost of equity is reduced and companies with high stock liquidity tend to have a lower financial leverage (Sandra Mortall and Mark Lipson, 2009, quoted by Yari and Abdi, 2016: 1). Barthes, Elliott and Fein (1999) stated that in the full capital market, the company's value depends solely on future cash flows due to investments (Tahbaz Hendi, 2009: 7).

Some scholars such as Lintner (1956), Fama and Baik (1968), Jones and Phillips (1997) point out that many companies have a long-term plan for paying dividends. While fewer companies tend to divide their profits this year among shareholders (Soleimani, 2015: 31). What attracts much attention is the presence of day-to-day investors in institutional circles in the corporate owners' circle and the effect that the active presence of this group can have on how governments and organizations can function and their performance (Jay Sean et al., 2015: 1). The purpose of stock companies and their managers is to maximize the value of equity (Asadi et al., 2011: 31). The composition of the shareholders of different companies is different. Part of the ownership of the companies is held by the shareholders of the natural persons and entities (Hashemi and Samadi, 2009). The group relies heavily on publicly available information, such as published financial statements, to monitor the performance of corporate executives. This is while another portion of the company's ownership is held by major professional shareholders. Unlike the first-class shareholders, valuable information about future perspectives and business strategies and long-term investments of the company is provided through direct contact with the company's executives (Yazdani Khoda shahri, 2011: 15). Institutional investors are the main players in financial markets (Bagherzadeh, 2003: 25). Two important motivations for major investors to manage their stocks are: (1) Lending liabilities; and (2) higher investment performance (Yazdani Khoda shahri, 2011: 16).

A series of capital structure research in the use of the owner-manager brokerage conflict was suggested by Jensen and Mackling (1976) and argued that executives, in order to improve their financial wealth, make capital construction decisions that their behavior maximizes the value of the company (Hashemi and Samadi, 2009). Debt is a regulating device that can be used to reduce brokerage issues by limiting the excessive investment management behavior (Grossman & Hart, 1980; Gensis, 1986). In this regard, frontier managers who opt for the choice of capital structure have the discretion to pursue lower levels of debt to avoid the regulatory role of debt. In addition, they have the incentive to protect their lower-end human capital from the risk of debt-induced bankruptcy (Fereind & Lang, 1988, Jensen, 1986). In addition, Zibul (1996) states that frontline executives issue only debt as a defensive tool to provide sufficient value, especially when their imperial structure is shaken by seizure and dismissal. According to this argument, Burger, Obak, and Yermask (1997) concluded that the company's debt levels would increase after adverse

events such as unmanageable management, unsuccessful bidding and the introduction of a new board. However, Harris and Rovio (1990) and Stols (1998) state that front-line managers prefer over-optimal debt to increase the power of vote-sharing and avoidance threats (Jayson et al., 2015: 2). In space, capital structure (especially in the cases of information asymmetry) is preferable to the provision of financing from domestic sources and relatively financial provision through stock (Abdi & Yari, 1395: 1). On the other hand, the more opportunities for growth, the more cash the company will keep in order not to miss valuable projects. Therefore, no matter how much the company has a better chance of investing, it will pay less dividends (Yazdani Khoda shahri, 2011: 17). Taking into account these contradictory views on the impact of management incentives on company debt levels, the first goal of this study is to examine how ownership of management shares is on corporate capital structure decisions and to provide more information about the above forecasts. Therefore, the research seeks to answer this question: What is the relationship between the capital structure and the value of the company in the Iranian stock market in Tehran Stock Exchange companies?

IMPORTANCE AND NECESSITY OF RESEARCH

Corporate companies play a major role in the economy. Millions are directly and indirectly investing in these companies, and the success of these companies depends on the willingness of investors and their investment decisions in these companies. These people pay particular attention to the return on their capital, and this figure is one of the main data of decision making models in buying and selling stocks. The amount of income derived from shares of a particular company is affected by various factors, and most of these factors depend on the decisions of the management of the unit (Yazdani Khoda shahri, 2011: 17). The issue of capital structure is one of the controversial issues in the financial field of the company. Different scholars, by presenting various theories and theories, are looking for a way to determine the optimal capital structure that maximizes the cost of the company's capital and its value (ValiPoor et al., 2011: 189). Recently, researchers such as Su (2012), Fascio and su (2015), Fallover and McDonald (2015), and Surfing (2016) have expanded their work from the time of pioneering research by Modigliani and Miller (1958) to develop theoretical research, and structural capital decisions Explained. One of the most important problems in financial affairs of companies is the question of how the structure of capital affects the value of companies. Despite the large volume of theoretical and practical research related to the structure of capital and company value, no agreement has been made regarding this relationship. A number of theoretical studies describe the value of the structure of capital created from different perspectives. Modigliani and Miller (1958) assumed that the value of a company in a complete market is independent of its capital structure. Theoretical research Mirz and Milov (1984) prioritize; a preferential system for financing companies with respect to

domestic financing, debt and profits. In general, agency-based models provide contradictory predictions about the optimal corporate capital structure, as the result is related to the particular relationships of dealers with companies and their costs (Jensen and McLean, 1976, Vy Le & Nguyet Phan, 2017: 1).

Therefore, the importance of discussing the structure of capital from Modigliani and Miller's (1985) studies was noticed more. They believed that there was no difference between equity financing and debt taking into account corporate value. Hence, the various methods of financing for the company do not have an additional value and therefore there is no limit to the manager; But further empirical evidence showed that this was not the case, and Modigliani and Miller's research in 1963 achieved new results and the importance of the corporate capital structure became more and more prominent. There is a lot of research in corporate finance that seeks to explain that capital structure affects the company's value. On the other hand, institutional investors have significant experience in collecting and interpreting information on performance. The agency's theory shows that the structure of capital and the desired ownership structure can reduce agency costs (Asadi et al., 2011: 31-30). Also, the results of the research could lead to information transparency and, as a result, more liquidity. An increase in liquidity could lead to more investment, higher output and, consequently, an increase in sales and distribution of more profits or an increase in company stock prices. Results can also be considered as an indicator for: board decisions, corporate ratings, policy makers and the general public in judging companies and....

BACKGROUND RESEARCH

Vy Le & Nguyet Phan (2017), in a study entitled "The relationship between capital structure and shareholder value", which examines the status of stock companies in Vietnam. They used the accounting and stock market information of the listed companies in Ho Chi Minh Stock Exchange in 2013-2017. The analysis of the data showed that there is a negative relationship between the financial leverage and the stock value, which itself reflects the exorbitant cost of financing and profits of Vietnamese companies. In addition, they found that only startups would probably create value for shareholders. From this study, there are inferences to prioritize the capital structure of Vietnamese companies and investors in the stock market.

Kelarak & Berayan (2016), this study examines the "impact of financial flexibility on capital structure decisions". Clark uses data from American companies during the period (1911 to 2001). In this research, he is investigating whether flexibility is one of the variables that is considered when deciding on debt issuance or capital increase and how much flexibility these decisions have. In this research, Clarke uses the final cash value as a benchmark for the ultimate value of flexibility. The results of this research show that when the ultimate value of flexibility in relation to capital structure decisions is examined, other variables that affect the structure of capital

significantly lose their importance, in other words, flexibility is the most important factor affecting the structure of capital. Clark also shows that companies with higher end-to-end value are more willing to save their debt capacity for years to come, and this is consistent with the results of Djajelo and Whited (2000). Also, companies with higher final margin of value had a greater tendency to increase their capital than to provide their needed debt through debt issuance, which was only intended to maintain debt capacity.

San & et al. (2015) investigated the relationship between ownership structure, capital structure and financial decisions. To this end, they selected a sample of English companies between 1993 and 2012. In this study, for the purpose of calculating the ownership structure, two dimensions of ownership and institutional ownership were used. The results showed that there is a non-uniform relationship between management ownership and debt rate. Other results showed that high-management companies reduce their financial leverage by increasing profitability through issuance of bonds. Other results also showed a positive relationship between institutional ownership and financial leverage.

RESEARCH HYPOTHESES

1. There is a meaningful relationship between the total debt to assets and the value of the company in the stock market in Iran.
2. There is a meaningful relationship between the price to book value and the value of the company in the stock market in Iran.
3. There is a meaningful relationship between the price / income ratio and the value of the company in the stock market in Iran.

STATISTICAL POPULATION, SAMPLE AND SAMPLING METHOD

Society in fact includes all the elements that apply to a given subject of research and we want to infer it. The scope of each research community is determined on the basis and the definition of the society is expressed by the combination of common features whose elements are in the society and considered relevant in terms of the subject of research (Azar and Momeni, 2003).

The statistical population of this research is all the active companies in the Tehran Stock Exchange between 2012-2017 which have the following conditions:

1. Their financial information will be available in 2017.
2. Includes investment companies, leasing companies and banks.
3. Companies that will end their finances by March 29th.
4. There are no financial interruptions.

Which is based on a systematic knockout procedure of 89 companies. Since the number of companies in the statistical society as well as the number of variables that must be computed and studied for each company is high, and given the database that can be used and all the required data to be

obtained from it, There is no, if not available, usually comprehensive and due to the time limit for doing research, the use of sampling is mandatory.

Considering the size of the statistical society (89 companies), the distribution of society is considered normal and the sample size is calculated using the Cochran formula.

$$n = \frac{NZ_{\alpha}^2 pq}{\varepsilon^2 (N-1) + Z_{\alpha}^2 pq}$$

We have:

N: The size of the statistical society

n: sample size

P: The ratio of success to being selected in the sample

Z: Normal distribution standard variable

q: Failure ratio for sampling

ε : Estimation error

If the confidence interval and estimated error are considered to be 95% and 5%, according to similar researches and researchers and in the absence of complete information about p and q, the most conservative condition is to consider both of them equal to 0.5, in which case the sample size will be maximal (Azar and Momeni, 2003).

$$\frac{Z_{\alpha}}{2} = 1/96 \quad q = \%50 \quad p = \%50 \quad \varepsilon = \%10 \quad N = 132$$

Therefore, the number of predicted samples is based on the above-mentioned number of n =49, and in this research, 50 companies are selected as the sample.

RESEARCH MODEL

The relationship between research variables is analyzed using the following multivariate regression:

$$CAR_{i,t} = a + b_1 LEVERAGE_{i,t} + b_2 PB_{i,t} + b_3 PE_{i,t} + b_4 SIZE_{i,t} + \varepsilon_{i,t}$$

In this regard:

CAR: unusual stock cumulative return;

LEVERAGE: Total debt to total assets at the end of the year;

PB: The ratio of the price to the book value of the company;

PE: The ratio of the price to the company's income;

ε : random error rate.

In fact, in the above equation, the value of each company is equal to: the ratio of total debt to total assets, the ratio of cost to book value, the ratio of price to income and the risk in the stock market.

DESCRIPTIVE STATISTICS

Descriptive statistics are used to describe, describe, and explain important data properties. In this section, different data are shown in tables and charts, followed by different indicators in this area. In this type of statistics, the data are first summarized and presented in different tables, and then numerical criteria are obtained to obtain the value of the representative of the data center and their scattering values.

Tab.1. Descriptive statistics of research variables

	Total debt to assets	Total debt to assets	Total debt to assets
Average	0.45	2.11	1.25
Middle	0.47	1.30	1.23
Maximum	0.81	8.25	2.14
Minimum	0.00	-0.72	0.35
Standard deviation	0.27	2.12	0.38
Skidding	-0.26	1.16	0.24
Elongation	1.96	3.29	2.68

CORRELATION ANALYSIS

Correlation analysis is a statistical tool by which one can measure the degree to which a variable is related to another variable linearly. Correlation is typically applied by regression analysis. Correlation is a criterion used to determine the rate of bond between two variables (Azar 2010). If the research variables are proportional and continuous, Pearson correlation coefficient is used to examine the correlation between them. The Pearson correlation coefficient is always between 1+ and 1. The closer this coefficient is to +1, it indicates a high correlation between the two variables, and if Pearson's correlation coefficient is closer to 1, then the concept is high and inverse correlation between them. Although there is no easy way to distinguish between high correlations, there are bases for interpreting different values of correlation coefficient. Such a rule has been provided, but it should be used with caution (Azar, 2010).

Tab.2. Correlation coefficient between research variables

Variable	Symbol	Total debt ratio to total assets	Price to book value	The ratio of price to earnings	Market risk	Size of the company
Total debt ratio to total assets	LEVERAGE	1				
Price to book value	PB	-0.152	1			
The ratio of price to	PE	0.338	-0.084	1		

earnings						
Market risk	BETA	-0.032	0.014	0.138	1	
Size of the company	Size	0.286	-0.162	0.385	0.121	1

INFERENCE STATISTICS

In the combined data test (data panel) after the variables have been prepared for estimating the regression equation, the F limer test is firstly calculated to determine that the regression equation must be estimated using aggregated regression or regression models of panel data. In other words, the zero hypothesis of the F Limer test expresses the appropriateness of using the combined regression models and shows the hypothesis that the use of panel models is appropriate. The results of the F limer test for this pattern are shown in the table below.

Tab.3. Chow test results for research models

Statistical assumption	Benchmarking	Test statistic	The significance level	Test result
Zero Assumption: The entire width of the originals is equal.	F-statistic, Chi-2 statistics	2.37 10.68	0.03	Reject zero assumption

Tab.4. Hausman test results for research models

Statistical assumption	Benchmarking	Test statistic	The significance level	Test result
Zero Assumption: The width of the sources with the explanatory variables is not significantly correlated.	Chi-2 statistics	10.45	0.03	Reject zero assumption

As can be seen in Table 4, in the hypothesis model, the probability of a test statistic is less than the significant level, and the assumption of zero is not verified, therefore, the Hausman test is implemented for the model. Also, according to Table 5 for the hypothesis model, the probability of Chi-2 statistics is less than the significant level, therefore the fixed-effect effects model is used for the hypothesis.

TEST OF RESEARCH HYPOTHESES

• Test the First Hypothesis:

In this research, the first hypothesis examines the relationship between total debt to assets and company value.

The ratio of total debt to assets of the company is not related. $H_0: \beta = 0$

The ratio of total debt to assets is valued by the company.
 $H_1: \beta \neq 0$

The result of its regression is presented in Table (5):

Tab.5. The result of the regression of the first hypothesis of the research

Type of variable	Symbol	Variable name	Coefficient	Statistics	The significance level
Dependent variable	Y	Company value (stock return)	-	-	-
Fixed value (width from origin)	α	Alpha	715.	619.	416/0
In dependent variable	X4	Total debt to assets	*1.350 -	058.	944/0
Control variable	Size	Size of the company	047.	531.	592/0
Durbin-Watson stat		Durbin-Watson	2.043	-	-
F-statistic		F statistics	205.	-	815/0
R		The correlation coefficient	064/	-	-
R Square		The coefficient of determination	0041.	-	-
Adjusted R Square		Adjusted coefficient of determination	016.-	-	-

As the image shows, the ratio of total debt to assets with a value of the company (p-value <5%) has a significant relationship. Regarding to the amount of F statistics, fitted regression model is significant and according to the coefficient of determination, these variables account for only 0.4% of the company's value changes. The Watson camera statistic is also between 1.5 and 2.5, so we can conclude that there is no correlation problem between the variables.

• Test the Second Hypothesis:

In this research, the second hypothesis examines the relationship between price to book value and company value.

The ratio of the price to the book value of the company is not related. $H_0: \beta = 0$

The ratio of the price to the book value of the company is related to the company. $H_1: \beta \neq 0$

The result of its regression is presented in Table (6):

Tab.6. The result of the regression of the second hypothesis of the research

Type of variable	Symb ol	Variable name	Coeffi cient	Statisti cs t	The signifi cance level
Depende nt variable	Y	Company value (stock return)	-	-	-
Fixed value (width from origin)	α	Alpha	568.	246.	385/0
In depende nt variable	X4	Price to book value	*1.241	048.	882/0
Control variable	Size	Size of the company	*032.	621.	552/0
Durbin-Watson stat		Durbin-Watson	2.008	-	-
F-statistic		F statistics	203.	-	766/0
R		The correlation coefficient	277/	-	-
R Square		The coefficient of determination	0729.	-	-
Adjusted R Square		Adjusted coefficient of determination	061.	-	-

As the image shows, there is a significant relationship between the price ratio and the company value (p-value <5%). Regarding the amount of F statistics, fitting regression model is significant and according to the coefficient of determination, these variables only explain 0.072% of the company's value changes. The Watson camera statistic is also between 1.5 and 2.5, so we can conclude that there is no correlation problem between the variables.

• Test the Third Hypothesis:

In this research, the third hypothesis examines the relationship between total debt to assets and company value.

The ratio of the price to the revenues of the company is not relevant. $H_0: \beta = 0$

The ratio of the price to the company's revenues is relevant. $H_1: \beta \neq 0$

The result of its regression is presented in Table (7):

Tab.7. The result of the regression of the third hypothesis of the research

Type of variable	Symb ol	Variable name	Coeffi cient	Statisti cs t	The signifi cance level
Depende nt variable	Y	Company value (stock return)	-	-	-
Fixed value (width from origin)	α	Alpha	542.	570.	475/0
In depende nt variable	X4	Price to income	*1.232	0622.	820/0
Control variable	Size	Size of the company	*062.	512.	483/0
Durbin-Watson stat		Durbin-Watson	2.81	-	-
F-statistic		F statistics	203.	-	719/0
R		The correlation coefficient	032/	-	-
R Square		The coefficient of determination	0051.	-	-
Adjusted R Square		Adjusted coefficient of determination	048.	-	-

As the image shows, there is a meaningful relationship between the price / revenue ratio of the company (p-value <5%). Regarding the amount of F statistics, the fitted regression model is significant and according to the coefficient of determination, these variables account for only 0.05% of the company's value changes. The Watson camera statistic is also between 1.5 and 2.5, so we can conclude that there is no correlation problem between the variables.

DISCUSSION AND CONCLUSION

- There is a meaningful relationship between the total debt to assets and the value of the company in the stock market in Iran.

The results showed that there is a negative and significant relationship between the ratio of debt to net assets and CARs at the 5% level; therefore, this hypothesis is confirmed inversely. This study is definitely in line with the findings from previous studies, including Morada Throat and Siwa Prazad (2012), which proves that companies with less net assets operate significantly more positively than the market. However, if companies enter a higher net asset strategy, they will suffer less.

- There is a significant relationship between the price to book value and the value of the company in the stock market in Iran.
- The results showed that there is a positive and significant relationship between the ratio of price to book value and CARs at the 5% level; therefore, this hypothesis is confirmed directly.
- There is a meaningful relationship between the price / income ratio and the value of the company in the stock market in Iran.

The results showed that there is a positive and significant relationship between the price / income ratio and CARs at the 5% level; therefore, this hypothesis is confirmed directly. The proportion of price to earnings per share is widely researched around the world, however, in existing research, this ratio is calculated on the basis of the previous year's earnings. In the New York Stock Exchange, the average price-to-earnings ratio is used to evaluate stock prices of large companies, and the Tehran Stock Exchange estimates the result of this ratio of expected futures, which all indicate the importance of this ratio.

• **Research Suggestions:**

1. Managers should use long-term debt financing to finance the company, provided that the long-term debt ratio does not exceed a certain firm capital structure, because the financial leverage increases, the probability of a bankruptcy also increases.
2. Considering the changes in financial systems and capital structure in order to achieve the company's valuation from the price to book value.
3. Also, due to changes in the structure of capital, efficient market-based decision-making is required. Because in the market, the market value is closer to the book value, so that a more accurate study of the degree of value of the company can be achieved with this ratio.
4. The company's revenue is due to continuous activity of the company and the value of the company is mainly dependent on this sector, therefore, it is a good measure for the company's value.

REFERENCES

- [1] *Enke, D., Thawornwong, S. (2015). The use of data mining and neural networks for forecasting stock market returns, Expert Systems with Applications, Volume 29, Issue 4, November, Pages 927-940.*
- [2] *Grinold, C., Kahn, N. (2000). "Active Portfolio." (McGraw-Hill, 2000).*
- [3] *Guerard Jr, J. B., Markowitz, H., Xua, G. (2015). Earnings forecasting in a global stock selection model and efficient portfolio construction and management.*
- [4] *Mehar H, A. (2005), "Is Debt a Substitute of Equity? Relevancy of Financial Policy in Current Economic Scenarios", Applied Financial Economics, Taylor and Francis Journals, vol 15, PP.337-366.*
- [5] *Sun, J., Ding, L., Guo, J. M., Li, Y. (2015). Ownership, capital structure and financing decision: Evidence from the*

UK. The British Accounting Review xxx (2015) 1e16.

- [6] *Thi Phuong, V. L., Thi Bich Nguyet, P. (2017). Capital structure and firm performance: Empirical evidence from a small transition country.*