

The relation between capital structure and stock price of listed companies in Tehran Stock Exchange

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Abstract: One of the most complex issues in challenging financial managers is the relation between capital structure components and one of the most important cases of that is the relation between capital structure and stock price. Therefore, the question arises is that which one of funds resources the company manager should be chosen how much of that resource is used in the composition of his/her capital that be able to adjust capital structure so that stock price and stockholders wealth will be increase. This research intends to study on the relation between capital structure and stock price of listed companies in Tehran Stock Exchange in the period 1380 to 1387. Statistical population in this study is consists of 75 companies from 7 active groups in the Tehran Stock Exchange. The argumentation method of this study is deductive-inductive and the research method is correlation. Data were analyzed using statistical methods such as regression analysis and correlation analysis, regression linearity test, F test, parameters estimating test and T test. The results of this study indicate that there is no significant relation between the capital structure and stock price of listed companies on the stock exchange.

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1. Introduction

Development and continuation of companies' activity need to funds resources and supplying the resources normally has its limits. In order to continue resources absorption process, the way to use these resources should be so that provides appropriate share of values for suppliers and users. What encourages financial suppliers to use their resources in the certain activity is optimal performance of that activity that by doing that, the company level and shareholder wealth will increase. The issue of capital structure is one of issues that so many studies and tests have been performed on that up to now and now is considered in many theoretical and experimental studies. The aim of theoretical debate about capital structure is to reach a point of balance between the two main sources of financing, i.e. debt and stockholders beneficent. In other words, by increasing stocks and reducing costs of it capacity, the company should be able to achieve that level of performance that finally can increase stockholders wealth. This point (balance threshold) is called "optimal capital structure". Based on case studies from the financial statements of the selected companies, most companies that are active in Tehran Stock Exchange use bank loans and issuing common stock in order to supplying required financial resources. On the one hand, Debt in financial system of companies with the reason of financial discounts increases accounting profit and consequently stock revenue, and on the another hand, with the reason of interest costs and risk of non-payment at due debt increases financial risk and consequently a decrease in the stock price in market and consequently stock revenue reduces. Hence, one of the main concerns of

managers is the company's capital structure because one of the responsibilities of financial managers is to increase stockholder wealth.

Choice between debt and stockholders beneficent as a new source of financing is under the influence of internal and external factors that affect the company's capital structure. To determine companies' capital structure, at first the new financial need according to financial needs for investment should be specified and then the source type (debt or stockholders beneficent) should be chosen. To achieve maximum efficiency and implement profitable projects in order to increase the wealth of their shareholders, companies use different financial resources with various methods. The company's ability to identify appropriate potential funding sources, whether internal or external to provide capital for investment and implementing financial programs is one of the main factors of growth and development of every company. Methods of financing of companies in term of due debt time have been divided to short-term, middle-term and long-term financing (Shabahang, 2004, p. 41)

In 1958, Franco Modigliani and his colleague Morton Miller, in an article entitled "The cost of capital, corporate finance and investment theory" created a great revolution in the capital structure literature. These two researchers proved that however there is a set of limitative assumptions regardless of taxes and contract fees, the company's financial policy has no effect on the company's current market value. Later, Miller and Modigliani published a paper in 1963 in which no corporation tax assumption largely moderated. The tax law allows companies to reduce

invest as cost and thus difference in approach makes financial leverage to create interest. Miller and Modigliani argued that because the calculation of corporate income tax, interest payments will be lower, the more debt in the context of capital, the more debt related to company's tax and the more cash flow after tax and company value in the market. Thus, a situation arises that requires one hundred percent of the funds needed to provide through loans. Without the cooperation of the Modigliani, Miller in 1997 continued the study and considered personal income tax. He argues that the tax benefits of debt are too exaggerated, because taxes on corporate profits are apart from individual income taxes. Also, he noted that all the incomes of the bonds are as interest that includes taxes with personal income rate and it causes to loss the tax benefits of debt. One of Miller and Modigliani assumptions is that managers and investors have the same information (asymmetric information) about the future of company; however, managers have more information. This phenomenon is called asymmetric information will have a significant impact on the capital structure. This theory is explicitly stated that there is "power hierarchy" for financing. The company has a very good future, would prefer to provide needed capital through loans, while the company does not anticipate a good future, would prefer to provide needed capital through distributing stocks. Warning theory leads to the conclusion that companies should take to keep their potential capacity for borrowing to issue bonds provided that conditions are favorable (for financing) rather than common stock issued and they have their deteriorating conditions. Market timing theory is the new theory has been presented by Biker and Verglar in 2002. These two researcher tested different variables that are an indicator for the process of market ratio to organizational value and finally introduced the variable called the weighted average of the previous financing as variable that is the best indicator to show market value variables effects on organizational value.

During the research on the optimal capital structure, Brily has investigated factors that affect on financial structure of companies. In this study, the effect of major factors such as the type of industry and business risk on the company's financial structure was investigated and it was found that the type of industry affected on the company's debt ratio effectively. Theories of capital structure suggest that each company has an optimal capital structure, the structure that can maximize the company's value and minimize the cost of capital. However, there is conflicting problems about decisions regarding capital structure and this theory cannot be used to determine the company's capital structure exactly (Afshin Azizian, 2007, p. 17). Since the company cannot determine the

optimal capital structure accurately, the managers compelled to use their own judgment when they use quantitative analysis. This analysis based on personal judgments requires the use of many factors which are described below:

- 1- Managers conservatism
- 2- Lenders and the attitude of organizations that determine credit rate of companies.
- 3- Reserve borrowing capacity and financial flexibility
- 4- Control
- 5- Commercial risk
- 6- Structure of Assets
- 7- Growth rate
- 8- Profitability
- 9- Taxes
- 10- Market conditions

2. Research background

Huang and Ritter (2008) showed that debate center about capital structure should be the obvious advantages of the benefits of new stockholders for companies that have high value (they called companies with high value) but most of scholars disagreed with this view. Meanwhile, Graham and Harvey (2001) showed that managers of studied companies (especially those who have had little growth) believe that new stockholders financing is much cheaper than other sources. Ronald Masuis (2010) studied on the impact of changing capital structure on stock prices on the New York Stock Exchange (NYSE) and American Stock Exchange (ASE). In this study, he used the daily stock revenue and showed that significant adjustments in the price of the common stock, preferred stock and debt associated with the declarations were found. The replaced factors and causes of price changes were also studied. Evidence from this study is consistent with the effects of redistribution and taxation. Woo, Sersoo and Yao (2009) stated that most publishers who are acting under asymmetric information are based on the growth opportunities rather than existing assets that this might be due to the cheap cost of stockholders beneficent. Some researches has also been done on capital structure of the company in Iran that among them research by Mohammad Maleki pour (1375) can be noted that he studied on leverage effect on profitability. In this study, it was concluded that the use of financial leverage has no effect on the profitability of companies and companies could not use leverage to increase profits per stock. In another study by Seyed Javad Delavari (1998) on effect of financing methods on the revenue ratio of stockholders beneficent of listed companies in Tehran stock exchange comparing methods of financing of companies that provided their funds through increasing capital or borrowing, it was found that

financing methods had no effect on the revenue of stockholders beneficent. Jalal Sherzadeh (2004) studied on the effect of capital structure on profitability of listed companies in Tehran Stock Exchange (emphasis on the type of industry). The results indicate that there is no strong relation between capital structure and profitability of listed companies in Tehran stock exchange.

2.1. Research objectives

Considering main objective of companies to maximize stockholders wealth and important role they play in positive process of changing stock price in order to increase investing by companies and also in order to In order to propel and guide the shareholders and creditors and other users of information to recognize impact of capital structure on stock price in order to make optimal decisions, this research is intended to study on the relation between capital structure and stock price of listed companies in Tehran Stock Exchange.

2.2. Research assumptions

To achieve the goal of this study, i.e. finding the relation between changes in capital structure and changes in stock price of listed companies in Tehran Stock Exchange, the following assumptions have been developed:

Main assumption: there is a relation between capital structure and stock price of listed companies in Tehran Stock Exchange.

Sub-assumption 1: there is a relation between changing debt of listed companies in Tehran Stock Exchange that have capital structure less than 60% debt and stock price.

Sub-assumption 1: there is a relation between changing debt of listed companies in Tehran Stock Exchange that have capital structure more than 60% and less than 80% debt and stock price.

Sub-assumption 1: there is a relation between changing debt of listed companies in Tehran Stock Exchange that have capital structure more than 80% debt and stock price.

2.4. Research variables

Capital structure: a combination of debt and stockholders beneficent that companies earn their assets through financing (June, Hemton, 2010, p 33).

Stock prices: It refers to the market stock price when trading stock in the stock exchange (Nazari, Reza, 2001, p. 32).

Changes in stock prices: it shows different between stock price ratio of beginning assets and end asserts.

Changes in debt: it shows different between debt ratio of beginning assets and end asserts.

2.4.1. Statistical population and implementing methods

In this study, Statistical population is listed companies on the Tehran Stock Exchange. 75 companies of target statistical population that have all required information of this study and are active in Tehran stock exchange during the period of 8 years from 2001 to 2008 have been chosen. Given the leverage of most companies were selected as the sample was very high, the selected companies were divided into three groups as follows:

- 1- First group are those companies that supplied their financial through dept up to 60% of their total assets. 19 companies classified in this group.
- 2- Second group are those companies that supplied their financial through dept between 60% and 80% of their total assets. 39 companies classified in this group.
- 3- Third group are those companies that supplied their financial through dept more than 80% of their total assets. 17 companies classified in this group.

2.3. Testing research assumptions

To test the assumptions in this step the state as H0 and H1 of the statistical assumptions and linearity of regression tests, F test, correlation and regression analysis and estimating the parameters and T test is performed.

The results of the first sub-assumption testing.

Table 1- Changes in the capital structure of corporate debt with debt less than 60% and changes in their stock price for the years 2001-2008

Year	F	Sig F	Correlation coefficient (r)	Determination coefficient (r ²)	Slope of the line β	t	Sig t
2001-2002	0/345	0/565	0/145	0/021	0/011	0/587	0/565
2002-2003	0/475	0/500	0/165	0/027	0/006	0/689	0/500
2003-2004	0/385	0/557	0/144	0/021	-0/003	-0/599	0/557
2004-2005	2/025	0/173	0/326	0/106	-0/001	-1/423	0/173
2005-2006	0/375	0/548	0/152	0/23	-0/001	-0/614	0/548
2006-2007	1/440	0/246	0/279	0/078	0/00	-0/200	0/247
2007-2008	0/033	0/858	0/044	0/002	0/00	0/184	0/858
All years	0/738	0/392	0/075	0/006	-0/001	-0/859	0/392

As shown in Table 1, F statistics that describe linear relation between changes in debt and changes in stock price, in each of the years 81-80, 82-81, 83-82, 84-83 and totally for all years is smaller than the critical value from the F table shows the H_0 assumption confirmed during each of these years, and totally. In confidence level 95%, there is no linear relation between the independent and dependent variables, i.e. changes in debt and changes in stock price in companies that have the capital structure of with less than 60% debt. The correlation coefficient

(r) which indicates the intensity of the relation between independent variables (changes in debt) and the dependent variable (changes in stock price) and the determination coefficient (r^2), which indicates the percentage change in the dependent variable (changes in stock price) due to changes in the independent variable (change in debt) in each of the years 81-80, 82-81, 83-82, 84-83 and totally for all years are negligible.

The results of the second sub-assumption testing

Table 2- Changes in the capital structure of corporate debt with debt more than 60% and less than 80% and changes in their stock price for the years 87-80

Year	F	Sig F	Correlation coefficient (r)	Determination coefficient (r^2)	Slope of the line β	t	Sig t
2001-2002	0/842	0/365	0/512	0/023	0/015	0/917	0/365
2002-2003	4/404	0/043	0/330	0/109	0/018	2/099	0/043
2003-2004	0/223	0/640	0/078	0/006	0/006	0/472	0/640
2004-2005	0/313	0/580	0/096	0/009	0/003	0/559	0/580
2005-2006	1/500	0/229	0/200	0/040	-0/014	-1/225	0/229
2006-2007	0/110	0/742	0/056	0/003	-0/002	-0/332	0/742
2007-2008	0/676	0/417	0/140	0/019	0/001	0/822	0/417
All years	0/040	0/842	0/012	0/00	0/001	0/200	0/842

As shown in Table 2, t-statistics that describe how significant is relation between changes in debt and changes in stock price or β coefficient in each of the years 2002-2001, 2003-2002, 2004-2003, 2005-2004 and totally is low and Sig t which indicates the possibility of β coefficient is zero, in all these years and totally for all years is greater than 5% and confidence level 95% indicated no significant β coefficient for this variable and indicates confirming H_0 during each of these years and totally. F statistics that describe linear relation between changes in debt

and changes in stock price, in each of the years 2002-2001, 2003-2002, 2004-2003, 2005-2004 and totally for all years is smaller than the critical value from the F table shows the H_0 assumption confirmed during each of these years, and totally. In confidence level 95%, there is no linear relation between the independent and dependent variables, i.e. changes in debt and changes in stock price in companies that have the capital structure of with more than 60% and less than 80% debt.

The results of the third sub-assumption testing

Table 3- Changes in the capital structure of corporate debt with debt more than 80% and changes in their stock price for the years 2008-2001

Year	F	Sig F	Correlation coefficient (r)	Determination coefficient (r^2)	Slope of the line β	t	Sig t
2001-2002	1/307	0/272	1/307	0/272	0/034	1/143	0/272
2002-2003	0/157	0/698	0/157	0/698	-0/004	-0/397	0/698
2003-2004	3/228	0/093	3/228	0/093	-0/019	-1/797	0/093
2004-2005	0/452	0/512	0/452	0/512	-0/004	-0/672	0/512
2005-2006	2/834	0/116	2/834	0/116	0/004	1/683	0/116
2006-2007	0/024	0/879	0/024	0/879	-0/001	-0/155	0/879
2007-2008	0/006	0/938	0/006	0/938	0/00	0/079	0/938
All years	0/376	0/541	0/376	0/541	-0/002	-0/613	0/541

As shown in Table 3, correlation coefficient (r) which indicates the intensity of the relation between independent variables (changes in debt) and the dependent variable (changes in stock price) and the determination coefficient (r^2), which indicates the percentage change in the dependent variable (changes in stock price) due to changes in the independent variable (change in debt) in each of the years 81-80, 82-81, 83-82, 84-83 and totally for all years are negligible. T statistics that describe how significant is relation between changes in debt and changes in stock price or β coefficient in each of the years 81-80, 82-81, 83-82, 84-83 and totally is low and Sig t which indicates the possibility of β coefficient is zero, in all these years and totally for all years is greater than 5% confidence level 95% indicated no significant β coefficient for this variable and indicates confirming H_0 during each of these years and totally.

3. The results of the testing research assumptions

Considering that the aim of this research is to study on the relation between capital structure and stock prices of listed companies in Tehran stock exchange, the following results were obtained after testing research assumptions:

As shown in the analysis of research assumptions, F statistics that describe linear relation between changes in debt and changes in stock price, in each of the years 80-87 and totally for all years is smaller than the critical value from the F table. In confidence level 95%, there is no significant linear relation between the independent and dependent variables. Also, correlation coefficient (r) which indicates the intensity of the relation between independent variables (changes in debt) and the dependent variable (changes in stock price) and the determination coefficient (r^2), which indicates the percentage change in the dependent variable (changes in stock price) due to changes in the independent variable (change in debt) are negligible that Show no significant relation between changes in debt and changes in stock price during each of years and totally. t statistics that describe how significant is relation between changes in debt and changes in stock price or β coefficient is low and Sig t which indicates the possibility of β coefficient is zero, in all these years and totally for all years is greater than 5% and confidence level 95% indicated no significant β coefficient for this variable.

4. Discussion

In the present study, data from the financial statements of listed companies in Tehran stock exchange in order to study on effects of stock price on the capital structure were analyzed. According to the results, there is no significant relation between

changes in capital structure and changes in stock price. Perhaps the main reason can be stated is that large companies rely more on internal sources to provide their investment and operational activities.

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