



## Evaluating Effects of Financial Leverage on Future Stock Value at Stock Exchange

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Available online at: [www.isca.in](http://www.isca.in)

Received 31<sup>st</sup> August 2012, revised 25<sup>th</sup> September 2012, accepted 23<sup>rd</sup> December 2012

### Abstract

*The present study mainly aims at evaluating effects of financial leverage on future stock value (emphasizing industry type). This is an applied and correlation study considering objective and method, respectively. The research statistical population was consisted of those Tehran stock exchange listed active cement industry companies analyzed from 2005 to 2008. Research findings relying on correlation and regression analysis indicates inefficiency of financial leverage on future value of Tehran stock exchange listed companies. In other words, the criterion is not helpful in predicting future value and lacks significant explanatory power. Based on research results, considering financial leverage criterion, therefore, will not be useful in predicting future value.*

**Keywords:** Financial leverage, future stock value, stock exchange.

### Introduction

Stock exchange is the main organization to optimally equip and allocate the capital in the country. Knowing this market, elements and relationships found there, are regarded as the most important factors of capital market development. Investors are one of the most important components of the market. Considering high importance of capital and small savings absorption and directing them toward firms development, it is necessary to know better these suppliers of financial resources, their behaviors, and factors affecting their economical decisions. Investors as one of the important components of stock exchange require evaluation and prediction of future value of business entity in order to make appropriate decisions. Obtaining rationale and appropriate return for their capital is regarded as their assuring factors<sup>1</sup>.

Therefore, identifying factors affecting future stock value including financial policies of the firms are of important considerations in financial management since management can reach optimal capital structure using financial supply policy and considering features and characteristics of the firm. Or, dividend policy is used to make decision about percentage of payout to stockholders, dividend stability, bonus stock, stock split, and stock repurchase. Finally, it fulfils its main objective, that is maximizing firm value and shareholders' wealth, relying on desired and optimal mix of these decisions<sup>2</sup>. The policies are important both from perspective of firm management and investors in order to make decision about stock purchase, and researchers looking for understanding and assessing performance of capital markets. Accordingly, to evaluate

usefulness of criteria used in predicting stock value, the present research mainly tries to answer the question about how financial leverage can affect future firm stock value.

**Research Literature:** Financial supply decisions directly affect two factors constituting stock return and its price variations and, therefore, shareholders wealth. Here, desired financial structure exhibits its importance. Firms should look for a mix of financial supply resources (financial structure) to maximize stock market value or firms' value. Therefore, a financial manager should decide about firm financial structure, i.e. ratio of debt and capital which should be kept in the firm, to change capital costs and firm stock value to minimum and maximum level as much as possible, respectively. In financial management, such structure with minimum capital cost and maximum stock value is known as capital optimal structure<sup>3</sup>. considering effects of different factors in the firm environment each of them affecting financial structure in a different way and difficulty and complexity of effects of these factors and their prediction in most cases, it is known as "capital structure puzzle" in some financial researches and studies.

On the other hand, capital structure is determined relying on optimal mix of debt and stockholders' equity to specify financial resources required by the firms. The approach should be drawn in a way that can fulfill goal of all companies, namely maximizing firm value<sup>4</sup>. Although following the mentioned objective appears simple and favorable at first glance, it can not be regarded as a useful and applied guide. In fact, the main problem relates to how financial managers do that. In spite of this and at current evolutionary conditions, a company can

suggest more profit to its main owners (stockholders) which can manage the capital in the best way. Realization of the goal convinces the financial managers to create the best capital optimal mix considering quantitative parameters found in financial statements especially profitability, liquidity, sale, operational profit, future growth opportunities and available qualitative variables including industry type, public perspective, and ownership compound.

**Research Background:** Masulis conducted a research known as "effects of capital structure variations on firm value" and evaluated effect of debt level variations on firm value. Two forms of capital structure variations, i.e. suggestions of changing publisher and reinvestment, were tested. The results indicated to positive and direct relationship found between both stock price and firm value and variations at leverage and debt level. While there is a negative relationship between price of high quality securities and capital structure variation variable. The evidences are in line with optimal capital structure models and hypothesis of information content of debt level variations considering firm value<sup>5</sup>.

Nissim and Penman in their research under title of "levered analysis of financial statements and its signaling about profitability to book value ratios" divided the leverage into two financial supply activities leverage and operational activities leverage and specified how each of them affect return rate of stockholders' right. Outcomes resulted from the analysis explained difference found between price to future and current book value ratio and demonstrated that such analysis where these two leverages are separated from each other may be helpful in predicting future profitability and estimating price to book value ratio<sup>6</sup>.

Nielsen studied the relationship between corporate governance, leverage, and dividend policy. The research expands firm agency model while corporate governance is defined as the balance found between control by strong stockholders and control with limited capital structure. The results demonstrated that firms with weak stockholders are more intended to use debt in their capital structure as well as dividend<sup>7</sup>. Qureshi in his research on "systemic stimulators forming firm value", concluded that financial structure with low leverage (debt) plays a significant role in maximizing firm value while short-term financial structure does not considerably affect value determination. Additionally, stable dividend policy is necessary to maximize firm value<sup>8</sup>. In their research known as "leverage-value relation puzzle", Aggarwal and Zhao evaluated the relationship found between leverage and value emphasizing on industry. Researches previously conducted in this regard did not reach a general acceptable result and some of them attributed effects of leverage on firm value to growth opportunities of the firm. However, these studies did not consider leverage differences among industries. In this research, a portion of firm leverage related to leverage of that special industry has been considered and, in fact, effect of industry on leverage has been

controlled in estimating the leverage-value relation. Finally, the results indicated to the negative relationship between leverage and value in both high-growth and low-growth companies<sup>9</sup>. Ghosh (2008) studied whether leverage affects dividend policy and profitability affects future firm value and concluded that there is a non-linear relationship between leverage, profitability, and possibility of promoting future firm value. The higher the leverage, the lower the probability will be. While the higher the profitability rate and dividend payout ratio, the higher the probability<sup>10</sup>. Ahmed (2008) conducted a research under title of "effects of decisions made about financial supply, dividend policy, and ownership of profit unit on firm performance at the presence and absence of growth opportunity". Findings of his research suggest that leverage ratio differently affects firm performance at the presence or absence of growth opportunity. In case of lack of such an opportunity, the effect will be negative while it will be positive if there is a growth opportunity. Firm dividend policy positively affects firm performance under both conditions. Finally, corporate ownership structure does not demonstrate a significant effects ob firm performance<sup>11</sup>.

Ebadi Dolatabadi studied effects of external resources of financial supply (stock publish and long-term loan) on price and return of firms stocks and concluded that stock publish affects stock price more than long-term loan. Additionally, capital development affects stock return in comparison with bank loan<sup>12</sup>. Hassanpou Bahabadi evaluated the relationship found between capital structure variations and value variations of Tehran stock exchange listed companies (Iran) and suggested that effect of capital structure variations on firm value is not the same among the selected industries. It is different for each industry. However, there is not a meaningful relationship between variations of debt to stockholders rights ratio and variations of firm value in the selected industries<sup>13</sup>.

## Research Methodology

This is an applied and correlation study considering objectives and method, respectively. The research statistical population was consisted of those Tehran stock exchange listed active cement industry companies analyzed from 2005 to 2008.

**Financial Leverage (independent variable):** received financial facilities to sum of stockholders equity ratio  
 $L = \text{received financial facilities} / \text{sum of stockholders equity}$  (1),  
 $\text{Received financial facilities} = \text{received long-term financial facilities} + \text{received short-term financial facilities}$  (2)

Mean of three last years was used to assess effect of independent variable in long-term in this study. To evaluate whether there is any information content for the investor as a result of being close to the desired year, weighted average was also calculated in addition to simple average where variable weight was determined considering closeness to the desired year (from 1 to 3, respectively).

**Market to book value ratio (dependent variable):** at the present study, it is a criterion of stock value and equals market value to stock book value ratio at the end of the period

$$MBVR = \text{market value of stock} / \text{book value of stock at the end of the period} \quad (3)$$

Considering that official and audited data of the fiscal year is not available until holding annual meeting, dependent variables of the research have been calculated annually and for the interval following annual meeting, in order to evaluate effect of beginning-of-year interval to holding of the annual meeting on annual value of stock.

**Table-1**  
**Variables along with their abbreviations**

	Variable	Abbreviation
Independent	Average Leverage	$L_{ave}$
	Weight Average Leverage	$L_{w.ave}$
Dependent	Annual Market to Book Value Ratio	$MBVR_A$
	After General Meeting Market to Book Value Ratio	$MBVR_{A.G.M}$

**Research hypotheses:** i. Average of financial leverage affects annual market to book value ratio, ii. Average of financial leverage affects after general meeting market to book value ratio, iii. Weighted average of financial leverage affects annual market to book value ratio, iv. Weighted average of financial leverage affects after general meeting market to book value ratio.

**Statistical data analyzing method:** To analyze data and test hypothesis of the present research, descriptive and inferential analyzing methods and SPSS statistical software were applied. After collecting statistical data of the research, they were processed in the frame of research variables and described using descriptive statistics tools. Using Kolmogorov-Smirnov method, variables with normal distribution were isolated from variables with abnormal distribution. Correlation between normal

dependent and independent variables was tested using Pearson method. Also, Spearman method was used to test the correlation found between abnormal dependent and independent variables. Finally, after evaluating the correlation between dependent and independent variables of the research, their relationship was explained using simple linear regression method. Considering different nature of activity of various industries at Tehran stock exchange and effects of industry conditions on performance of business entities, cement industry was separately evaluated in this research. Additionally, the hypothesis was tested in four different states in order to evaluate variables effects using average and weighted average also annual data and those data belonging to after annual meeting.

**Table-2**  
**Results of Kolmogorov-Smirnov test (K-S)**

Variables		N	Kolmogorov-Smirnov	Sig (2-tailed)
Independent	Average Leverage	48	1.311	0.064
	Weight Average Leverage	48	1.161	0.135
Dependent	Annual Market to Book Value Ratio	48	0.730	0.662
	After General Meeting Market to Book Value Ratio	48	0.801	0.542

Considering results of table 2, meaningful level of tests was specified more than (0.05) for all variables. Therefore, the hypothesis was accepted for them with reliability of 95%. Also, they have normal distribution.

Table 3 results of the correlation test demonstrate that meaningful level in hypothesis testing is more than acceptable error level (0.05). Therefore, there is not any meaningful relation between financial leverage and market to book value ratio with the reliability of 95%.

**Table-3**  
**Results of correlation test**

N	Hypothesis	Variables	N	Pearson Correlation	Sig (2-tailed)	result
1	Average of financial leverage affects annual market to book value ratio.	$L_{ave}$ $MBVR_A$	48	-0.161	0.273	rejected
2	Average of financial leverage affects after general meeting market to book value ratio.	$L_{ave}$ $MBVR_{A.G.M}$	48	-0.127	0.389	rejected
3	Weighted average of financial leverage affects annual market to book value ratio.	$L_{w.ave}$ $MBVR_A$	48	-0.144	0.328	rejected
4	Weighted average of financial leverage affects after general meeting market to book value ratio.	$L_{w.ave}$ $MBVR_{A.G.M}$	48	-0.106	0.475	rejected

**Table-4**  
**Regression test for hypotheses**

Hypotheses 1			Hypotheses 2			Hypotheses 3			Hypotheses 4		
L <sub>ave</sub>		MBVR <sub>A</sub>	L <sub>ave</sub>		MBVR <sub>A,G.M</sub>	L <sub>w.ave</sub>		MBVR <sub>A</sub>	L <sub>w.ave</sub>		MBVR <sub>A,G.M</sub>
R	Ad.R <sup>2</sup>	sig	R	Ad.R <sup>2</sup>	Sig	R	Ad.R <sup>2</sup>	sig	R	Ad.R <sup>2</sup>	sig
-0.161	0.005	0.273	-0.127	-0.005	0.389	-0.144	0.000	0.328	-0.106	-0.010	0.475

## Conclusion

According to data presented in table 4, meaningful level of regression test for all cases is 0.05 more than the minimum meaningful level. It can be claimed that the above test is not meaningful at the reliability level of 95%. Therefore, it can be concluded that leverage does not affect future stock value of the firm. The results indicate non-response of capital market against levered nature of the firm. Lack of relationship between leverage and firm value approves net operational income (NOI) theory<sup>14</sup> and Miller and Modigliani (M.M) theory<sup>15</sup>. According to these theories, both firm total capital cost and its published stock market value are independent from leverage degree used by the firm. Therefore, leverage can not be used to change capital cost. Meanwhile, results of the hypothesis are not in correspondence with traditional and balanced static theory which can be used to maximize firm value using debt tools. According to the research findings considering value prediction, the applied criterion has not significantly explanatory power in this industry. Therefore, investors can not enhance their capability in predicting future stock value of the firm relying on financial supply policy of the business entity. Results of the hypothesis testing does not correspond with that of the Masulis (1983)<sup>5</sup>, Nissim and Penman (2001)<sup>6</sup>, Qureshi (2007)<sup>8</sup>, Aggarwal and Zhao (2007)<sup>9</sup>, Ghosh (2008)<sup>10</sup>, Ebadi (2002)<sup>12</sup>, and Hassanpour (2005)<sup>13</sup>.

Results demonstrate that firm financial leverage has not significant information content for decision makers although it affects profitability and firm performance and, finally, stockholders wealth. To affect the firm value, therefore, the managers is suggested to pay more attention to those criteria related to profit or cash profit. It seems that income statement items are more important than balance sheet items for investors. Fluctuation of firm stock price after announcing predicted EPS and its modification or after announcing their DPS, can be an evidence for the claim.

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