



## The relationship between the components of the capital structure and the company's economic value added at different stages of the life cycle of listed companies in Tehran Stock Exchange

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### **Original Article:**

Received 20 Feb. 2016 Accepted 27 March. 2016 Published 15 April. 2016

### **ABSTRACT**

*The most important decisions of corporate managers are their capital structure decisions. These decisions have a direct impact on the value of the company and maximize shareholder wealth. Economic Value Added is a new way of evaluating performance which in recent years has been a lot of attention as effective as a method of measuring corporate value and shareholder interests is reflected. However, the value added of different companies with different earnings even if they are similar. On the other hand, based on the life cycle hypothesis stages of life, including birth, infancy, growth, maturity and decline. Thus, it can be argued that the decisions of external financing (debt - equity) will be affected by a critical stage in which the company. The aim of this study was to investigate the association between firms' capital structure with EVA considering the period of life that is in the period 2008-2013 and for 1452 year is now. To test the hypothesis of multivariate regression analysis using panel data. The results indicate the existence of external financing priority on growth, maturity and decline stage is the absence of this priority.*

### **Keyword:**

- / human rights documents
- / decline stage
- / external financing
- / panel data
- / the life cycle
- / EVA.

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Peer review under responsibility of **UCT Journal of Management and Accounting Studies**

## INTRODUCTION

Assess the true value of companies is one of the most important things about the accuracy of their shareholders. Traditional assessments of performance, mainly from the financial statements based on accounting principles that are working previously accepted. In measuring performance based on traditional accounting profit, the only costs to be funded through debt but the cost of capital is not reflected in this assessment. Therefore, cost estimates, not real and cannot reflect the real value is created and operations. Economic value added as performance measurement was introduced by Stewart in 1991. Profit based on the economic value after deducting all costs, including the cost of capital is obtained. Although economic value added is a new concept, but it is not new theoretical basis. The company must make a profit over cost of capital, has long been of interest to economists. (Mahdavi and Rastegari, 2007)

Years ago, famous economists such as Alfred Marshall said the company to create value to return more than the cost of capital (debt and equity) to create. This concept was introduced in the twentieth century under various titles, one of which is residual income.

Financing for small companies in the growth stage, something that now businesses are faced with it. Due to low capacity, collateral and credit history in the growth stage companies, financing the highway continuation of future economic activity is an important issue to be considered.

Among the criteria for the valuation of the company, EVA model as a new model that is more closely related to the creation of value in units of profit arises. Economic added value in the sense that economic opportunity cost as an expense account is different with accounting standards. In measuring performance based on traditional accounting profit, the only costs to be funded through debt while in the calculation of economic value added to the cost of financing through debt and equity.

Therefore, this study attempts the relationship between economic value and capital structure in order to answer the key question "Is (EVA) as an indicator to determine the company's performance can be a good measure in determining the company's capital structure? And are there the relationship between EVA and indexes in the company's capital structure? As well as for companies at every stage of life that the source of funds used to finance the external and whether the size of the life cycle and affect their external finance is a priority or not? "

### Background research:

Nikbakht and Moghimi 2011 in their study as the relationship between capital structure and EVA in two non-metallic mineral products industry and the building industry machinery and equipment paid for the period 2004 to 2008. Scientific evidence shows that the economic value logarithm is inversely of the ratio of interest-bearing debt to equity in non-metallic mineral products industry and a direct function of interest-bearing debt to equity ratio in the manufacturing of machinery and equipment 95 percent.

YahyaZade far Et all 2010 in a study paid to investigate the relationship between economic value and profitability ratios as the market value of companies listed on the Tehran Stock Exchange in the period from 2000 to 2006. The results showed that the correlation between economic value and

rate of return on equity and the market value of stocks, but the rate of return on assets and earnings per share and market value added there is no significant relationship.

Haghighat and Bashiri 2012 In a study titled, Effects of financial flexibility through the stages of the life cycle of birth, growth and maturity on the capital structure of listed companies in Tehran Stock Exchange during the years 1999 to 2007 paid. The results show that the company is in process of birth with the publication of capital and less debt threatened. And a balanced leverage ratios hold. Companies in the growth stage of financing debt and high leverage ratios hold. Mature stage companies rely on internal financing and leverage ratios are kept low. The findings are consistent with the theory of balance, but with preference theory does not match the birth stage companies.

Peeri Et all 2013 In an article titled examine the relevance and impact of systemic risk on the economic value that results of research shows that by using dynamic panel data there are inverse and negative relationship between systemic risk and economic value.

Victor Et all 2013 In an article titled alternative to traditional methods with new methods have been mentioned.

Kermani and Boybordi 2014 The main purpose of the business and education have stated that the wealth. The most important criteria for assessing is internal performance. The first structure necessity is to create a company. The dependent variable value-added and capital structure is defined as an independent variable. Four hypotheses to explain the relationship between value-added and capital structure elements are recommended. The results of hypothesis testing shows significant and positive relationship.

Altendorfer 2011 In his article, the question is: "What services and services to be used in the production system to achieve maximum economic value? In addition, this paper shows that between their high flexibility and capacity of the machine, increases the maximum possible economic value, although this will lead to increased costs.

Shah Et all 2015 In an article titled assess the advantages, disadvantages and limitations of their economic value as the best instruments for measuring the company's performance.

Ghanbari and Moor 2013 The relationship between MVA, EVA for the automotive industry companies on the Stock Exchange of India in the period between 2001 and 2005 began. The results showed that the EVA compared to the traditional measure of performance evaluation, better index variations in the sample companies is MVA.

### hypotheses:

The research hypotheses are as follows:

#### Main hypothesis:

Among the components of the capital structure and economic value throughout the life of the company are related.

#### Secondary hypotheses:

The ratio of short-term debt to total assets and economic value throughout the life of the company are related.

In the first and second hypothesis if there is a direct linear relationship between economic value and leverage, increasing leverage will increase the company's value and

the reverse of this relationship with reduced this will have increase the value of company.

**Research methodology**

The aim of this study is among the Applied Research. Research applied research that theory, the rules, principles and techniques that are developed in basic research apply to solve real administrative problems. And the type and method as correlation relationship because wants to examine between independent variables and the dependent variable based on factual information contained in the annual audited financial statements of listed companies in Tehran Stock Exchange. The timing of this study is a cross-sectional study because a certain period of time gives evaluated. Methods of data collection are library and through the study of books, scientific journals and scientific databases on the Internet and used different research tools, forms and financial reports of listed companies in the stock exchange.

**Community and sample**

To do this research, Companies listed on Tehran Stock Exchange that the following conditions have been considered as population.

1. before 2008 in Tehran Stock Exchange are accepted. (Since the required data is available.)
2. Firms are used during the period of investigation of bank borrowings or capital increases in cash.
3. The company during the period of investigation has to be the net profit.
4. Due to increased comparability, is its fiscal year ending 29 March. (If company's better comparison would be evaluated fiscal year is the same.)
5. The sample size was calculated through a formula and we have a random sampling method to select the sample. Cochran formula is as follows:

$$n' = \frac{NZ^2P(1-P)}{d^2(N-1) + Z^2P(1-P)}$$

Table1: The population and sample

Number	Description
۴۴۷	The number of listed companies on Tehran Stock Exchange by the end of 2013
۲۲	the number of companies out there in the time domain 2008to 2013
۳	(-)Number of companies that have been out in the time span of 2008 to 2013
۱۴	(-)The number of investment firms and financial intermediation
۲۱	The number of companies that their information not available
۳۸۷	The number of surveyed companies

If the above formula Z = 1.96 and P = 0.5 and Q = 0.5 and N = 387 and d = 0.01 taken into account, the company will have 242 sample through random sampling among 387

participants in the study period of 6 year between 2008 to 2013 were selected.

**Descriptive Statistics**

Table2: indicates the variables of descriptive statistics.

Standard deviation	Min	Max	Middle	Mean	Variable
0.2193	0	2.32	0.9525	0.985	CDR
0.021	0	0.219	0.0542	0.0549	LDR
۱,۳۲	۴	۹	1206219	126210	EVA
۱,۵۸۱	.	۶	۳	۲,۷۷۷۷	DPS
۳,۴۵۶	۱۳۲/۲	۵/۲۱	۶/۴۳۱	۶/۷۸۹	SIZE

**Hypothesis test results**

This statistical methods that allow researchers using data collected from a small sample of participants, community features that it has been selected sample infer or estimates say Inferential statistics(moemeni,2010) Before testing the hypotheses should be examined data normality assumption.

**Check assuming normal data**

One of the assumptions of normality of variables as regression models, using the Kolmogorov-Smirnov test was conducted. Obviously, if the results of this test, high fault level 0/05, the normality of variables to be confirmed. Therefore, using the Kolmogorov-Smirnov test for normality of variables, statistical hypotheses must be tested on:

H0: Variable distribution is normal

H1: Variable distribution is not normal

Table 3: The Kolmogorov-Smirnov test

Sig	test	Variable
0.224	0.761	CDR
0.32	0.926	LDR
0.321	0.218	EVA
0.54	1.458	ROA
0.546	0.634	DPS
0.98	0.258	SIZE

Kolmogorov-Smirnov test results in Table show that the intended variables are all normal.

**Model for the Estimation Method**

In order to test the hypothesis Limer and Hausman tests were used the results of these tests are presented.

**Limer test**

Limer test results for each of the hypotheses presented in the following table.

Table4: results Limer

Result	Level of error (chance )	Statistics	
Data Integration	0.00	12.1	The first hypothesis

**Hausman test**

Given that the F Limer level statistics for all hypotheses below the level of error is 05/0, it can be concluded that Limer test the null hypothesis that the appropriateness of using puling ordinary least squares method can be dismissed accordingly, the panel approach should be used.

According to the description of the Hausman test in the third quarter, in this case, reject the null hypothesis suggests using fixed effects.

Table5: Hausman test result

Result	Level of error ( likely)	Statistics	
Fixed effects	0.0001	7.1	The first hypothesis

The results of the regression model for the first hypothesis for companies that are in the growth phase

**Test research hypotheses**

First hypothesis: There are relation between the ratio of short-term debt to total assets and the economic value of the company life cycle.

$$EVA = \alpha + \sum_{i=1}^n \beta_i X_j + \sum_{j=1}^n \beta_i Y_j + \sum_{i=1}^n \beta_i X_i Y_j + \beta_i size + \epsilon$$

sig	t	The coefficient	Variable
0.0000	4.615117	0.403646	Intercept
0.0244	1.981763*	0.029	CDR
0.7604	-0.305428	-0.026455	ROA
0.0819	1.749956	0.000123	DPS
0.6028	-0.521254	-0.000694	SIZE
R <sup>2</sup> = 0.18			F <sub>3, 12</sub> :
Dorbin-vatson = 92			sig = 0.0001 :
* P < 0.01, ** P < 0.05, *** P < 0.10			

As the above table shows that, variable rate short-term debt to total assets ratio (0.029) is variable rate short-term debt to total assets ratio (0.029), According to t statistics obtained (1.981) and its significance level (0.0244), regression coefficients calculated for the variable is significant at an error level of less than

5%.Hence statistical hypothesis H0 at 95% for companies that are in growth stage, be rejected. According to the results of the hypotheses about the relationship between the ratio of short-term debt to total assets and economic value for companies that are in growth stage, in error of less than 5% will be confirmed.

Table7: The results of the regression model for the first hypothesis for companies that are in adolescence

$$EVA = \alpha + \sum_{i=1}^n \beta_i X_j + \sum_{j=1}^n \beta_i Y_j + \sum_{i=1}^n \beta_i X_i Y_j + \beta_i size + \epsilon$$

sig	t	The coefficient	Variable
0.0256	1.724968	4627.775	Intercept
0.0336	2.149835	233.5056	CDR
0.4379	0.778303	89.80815	ROA
0.0000	-5.240126	-1214.556	DPS
0.2367	-1.189064	-503.3631	SIZE
R <sup>2</sup> = 0.17			F <sub>4, 12</sub> :
Dorbin -vatson = 92			sig = 0.0001 :
* P < 0.01, ** P < 0.05, *** P < 0.10			

As the above table shows that, variable rate short-term debt to total assets ratio (0.029), which according to statistics obtained t (1.981) and its significance level (0.0244), calculated for the variable in the regression coefficients significant error of less than 5% Hence statistical hypothesis

H0 at 95% for companies that are in growth stage, be rejected According to the results of the hypotheses about the relationship between the ratio of short-term debt to total assets and economic value for companies that are in growth stag and The level of error is less than 5% The results of the

regression model for the first hypothesis for companies that in adolescence.

Table8: The results of the regression model for the first hypothesis for companies that are in adolescence

$$EVA = \alpha + \sum_{i=1}^n \beta_i X_j + \sum_{j=1}^n \beta_j Y_j + \sum_{i=1}^n \beta_i X_i Y_j + \beta_i size + \epsilon$$

sig	t	The coefficient	Variable
0.0256	1.724968	4627.775	Intercept
0.0336	2.149835	233.5056	CDR
0.4379	0.778303	89.80815	ROA
0.0000	-5.240126	-1214.556	DPS
0.2367	-1.189064	-503.3631	SIZE
R <sup>2</sup> , F, t, ε			F, t, ε :
Dorbin –vatson, F, t:			sig / . . . :
* P < 0.01, ** P < 0.05, *** P < 0.10			

As the above table shows that, variable rate long-term debt to total assets ratio (233.50), which according to statistics obtained t (2.149) and 0.033 significance level of regression coefficients calculated for the variable at the level of error of less than 5 % is significant, so the statistical hypothesis

H0 is rejected at the 95% confidence level. According to the results of the hypotheses about the relationship between the ratio of short-term debt to total assets and economic value for companies that are in adolescence the level of error is less than 5%.

Table9: The results of the regression model for the first hypothesis for companies that are in a period of decline

$$EVA = \alpha + \sum_{i=1}^n \beta_i X_j + \sum_{j=1}^n \beta_j Y_j + \sum_{i=1}^n \beta_i X_i Y_j + \beta_i size + \epsilon$$

sig	t	The coefficient	Variable
0.1547	0.02247	1.343322	Intercept
0.8303	..499055	-28.956551	CDR
0.3927	760.529103	-36.561234	ROA
0.0004	5336.469186	244.219192	DPS
0.2233	-0.005905	-0.138204	SIZE
R <sup>2</sup> , F, t, ε			F, t, ε :
Dorbin –vatson, F, t:			sig / . . . :
* P < 0.01, ** P < 0.05, *** P < 0.10			

As the above table shows that, variable rate short-term debt to total assets ratio (28.956-), which according to statistics obtained t (0:49) and a significance level of 0.83, the regression coefficients calculated for the variable in fewer errors of 5% is not significant, so the statistical hypothesis H0 is rejected at the 95% confidence level.

of the life cycle of the company. It is suggested to users of accounting information in studies and analyzes in relation to the company's capital structure And above all the impact of the economic structure of VAT with regard to the organization or company which is a stage of life consider at various stages of the life cycle of companies.

According to the results of the hypotheses about the relationship between the ratio of short-term debt to total assets and economic value for companies that are in a period of decline, In less than 5% error level was not confirmed.

2-The debt-to-equity ratio results show that although the company in all three phases of the life cycle greatest impact on the company's economic value but it is suggested that investors, analysts and the financial statements that the firm's capital structure and economic value, respectively, according to the company's growth to maturity and pay special attention

**Research limitations**

1. Perhaps the most important limitations of this research is the study period. If the time span of the study was considered for a longer period would have more ability to generalize the results. Given that the issue of economic value has been less attention Stock Exchange companies.
2. Therefore, the less attention causes less access to similar studies that it reduces the possibility of comparing the results with similar situations. Given that the issue of economic value has been less attention Stock Exchange companies

**Proposals based on the findings:**

1-This study examined the relationship between capital structure and economic value added at different stages

**Reference**

1. Aridveas, B (2003) "EVA, MVA and CEO Compensation", American Business Review.
2. Azar, A. and M. Momeni, (2004). "Statistics and its application in the management of" publishing side, Seventh Edition.
3. Bao, G, (2003) " Accounting Information Relation in Time " Journal of Financial Accounting , 68 , 10
4. Belkaoui,d, and Karpik,s.(2002) "Foresight Ableti Information Basic of Economic Value Added" Journal of Financial, 84 , .12

5. Biddle, G. C., R. M., Bowen, J. S., Wallace, (1999) , «Evidence on EVA», Journal of Applied Corporate Finance, Vol. 12, No. 2, summer, PP: 69-79.
6. Biddle, GC, RM, Bowen, JS, Wallace, (1999), «Evidence on EVA», Journal of Applied Corporate Finance, Vol. 12, No. 2, summer, PP: 69-79.
7. Bluki, G, and Pavlik, j (2000) " Relation between Capital Structure and Performance Managerial" Journal of Cost Management, 51 , .4
8. Calabrese, V. J., (1999) , «Economic Value Added: Finance 101 on Steroids», Journal of Bank Cost and Management Accounting, 12 (1) , PP: 3-34.
9. Calabrese, V. J., (1999) , «Economic Value Added: Finance 101 on Steroids», Journal of Bank Cost and Management Accounting, 12 (1) , PP: 3-34.
10. Calabrese, VJ, (1999), «Economic Value Added: Finance 101 on Steroids», Journal of Bank Cost and Management Accounting, 12 (1), PP: 3-34.
11. El Mir, A., S., Seboui, (2008), «Corporate governance and the relationship between EVA and created shareholder value », corporate governance Vol.8 No.1, PP: 46-58.
12. Ghanbari, MA, VS, More, (2007), «The Relationship between Economic Value Added and Market Value Added: An empirical analysis in Indian Automobile Industry », The Icfai Journal of Accounting Research, 6 (3), PP: 7- 22.
13. Haghghat, Hamid, WahabBashiri. ” investigate the relationship between capital structure and financial flexibility; Journal of Accounting, Issue 8, Spring 2012, pp. 49 to 71.
14. Fathollahi, Afshin.” examine the relationship between EVA and real stock returns of companies listed on the Tehran Stock Exchange Group vehicles”, a master's thesis, Tehran University.
15. Kaifeng, C. K. "The Influence of Capital Structure on Company Value with Different Growth Opportunities".2000
16. Kursher, A. And L. A. Strebulaer. "Firm size and Capital Structure". october2005
17. Matthias, B. And J. Lawrenz. " Informational Asymmetry Between Manegers and Investors in the Optimal Capital Structure Decision". January 2005
18. Melbourne T.T (2002) "The Search for the Best Financial Performance Measure" Financial Analysis Journal,pp 11 - 20.
19. Murray, F. Z And V. K. Goyal . Testing the Pecking Order Theory of Capital Structure". December.2000
20. Namazi, M and M heshmati, (2007). "The effect on the capital structure of listed companies has been delayed structures and variables in Tehran Stock Exchange", reviews the accounting and auditing, Year 14, No. 49, pp. 160-139.
21. Nikbakht, Mohammad and Ali Akbar Moqimi, "the relationship between economic value and capital structure" bimonthly auditor, No. 60- 2011, pp 130-145
22. Saleh Abadi, Ali and Ahmad Ahmadabadi. “The correlation between the ratio of the value added economic value to capital market investment in the Tehran Stock Exchange”, Economic Bulletin, Issue 14, Winter 2010, pp 255 to 271.