



The relationship between the proportion of long-term debt to total assets and economic value throughout the life of the company

Sedigheh Karimi Zarchi^{1,2}, Mohammad Ali Dehestani^{3}, Alireza Farimani⁴*

¹Department of Accounting, Tabas science and research branch, Islamic Azad University, Yazd, Iran.

²Department of Accounting, Tabas branch, Islamic Azad University, Yazd, Iran.

³Faculty of Accounting, Department of Accounting, Yazd Branch, Islamic Azad University, Yazd, Iran.

⁴Faculty of Accounting, Department of Accounting, Yazd Branch, Islamic Azad University, Yazd, Iran

ARTICLE INFO

Article history:

Received 08 Mar 2016

Received in revised form 10 Apr 2016

Accepted 26 Apr 2016

Keywords:

The ratio of short-term debt,

Capital structure,

Decline stage,

External financing,

Panel data

ABSTRACT

Objective: 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. 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. **Methodology:** 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. **Results:** The results indicate the existence of external financing priority on growth, maturity and decline stage is the absence of this priority. **Conclusion:** The results show that the size of the organization's funding priorities in the maturing process and to participate effectively in the decline stage is ineffective.

1. Introduction

In 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 (Hossain et al., 2001). 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 (Black and Scholes, 1973).

Financing for small companies in the growth stage, something that now businesses are faced with it (Denis and Mihov, 2003). 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.

* Corresponding author: Ma_Dehestani@aolmail.com

DOI: <https://doi.org/10.24200/jmas.vol4iss02pp15-20>

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 (Berger and Ofek, 1995).

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? " (Javed and Iqbal, 2007).

1.1 Background research

In a study the relationship between economic value and profitability ratios are investigated 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 (Ezeoha and Botha, 2012).

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 ratio 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 (Hovey et al., 2003).

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. Also, in an article titled alternative to traditional methods with new methods have been mentioned (Thorburn, 2000).

The main purpose of the business and education have stated that the wealth. The most important criteria for assessing are 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 show significant and positive relationship (Mehran et al., 1999).

Altendorfer and Jodlbauer (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.

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

1.2 Hypotheses

The research hypotheses are as follows:

1.2.1 Main hypothesis

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

1.2.2 Secondary hypotheses

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

The ratio of debt to equity and economic value throughout the life of the company are related.

The ratio of interest-bearing debt to equity 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. But if you accept the third hypothesis and direct relationship should be considered the ratio of debt to equity. Finally, accepting the fourth hypothesis as well as for direct relationship between increases in interest-bearing debt-to-equity ratio will raise the company's value. All these hypotheses will be studied at different stages of the life cycle of the company.

2. Materials and methods

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.

2.1 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.

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

Table 1. The population and sample

Number	Description
447	The number of listed companies on Tehran Stock Exchange by the end of 2013
22	the number of companies out there in the time domain 2008to 2013
3	(-)Number of companies that have been out in the time span of 2008 to 2013
14	(-)The number of investment firms and financial intermediation
21	The number of companies that their information not available
387	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

Table 2. Indicates the variables of descriptive statistics.

Standard deviation	Min	Max	Middle	Mean	Variable
0.021	0	0.219	0.0542	0.0549	LDR
0.192	0.039	1.652	0.981	0.998	DER
0.015	0	0.112	0.760	0.785	IBDE
1.32	4	9	1206219	126210	EVA
1.581	0	6	3	2.7777	DPS
3.456	132.2	5.21	6.431	6.789	SIZE

3. Discussion and results

3.1 Hypothesis test results

This statistical method 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.

3.2 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
0.32	0.926	LDR
0.231	0.042	DER
0.350	0.852	IBDE
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.

3.3 Model for the Estimation Method

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

3.3.1 Limer test

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

Table 4. Results Limer

Result	Level of error (chance)	Statistics	
Data Integration	0.00	21.8	The first hypothesis
Data Integration	0.00	31.3	The second sub-hypothesis
Data Integration	0.00	12.0	The three sub-hypothesis

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.

3.3.2 Hausman test

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

Table 5. Hausman test result

Result	Level of error (likely)	Statistics	
Fixed effects	0.0021	5.8	The first hypothesis
Fixed effects	0.00	4.3	The second sub-hypothesis
Fixed effects	0.102	1.32	The three sub-hypothesis

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

Table 6. The results of the regression model for the second hypothesis for companies that are in the growth phase

$EVA = \alpha + \sum_{i=1}^n \beta_i X_i + \sum_{j=1}^n \beta_j Y_j + \sum_{i=1}^n \beta_i X_i Y_j + \beta_i size + \varepsilon$			
sig	t	The coefficient	Variable
0.0428	2.04370	12469.12	Intercept
0.0082	2.681973	79.97966	LDR
0.2215	-1.228026	-554.7134	DPS
0.4735	-0.718742	-658.8964	SIZE
0.0074	2.718930	2395.719	ROA
R2:0.38			F :3.59
Dorbin- watson1.51			Sig :/••• :
* P < 0.01, ** P < 0.05, *** P < 0.10			

As the above table shows that, between the variable rate long-term debt to total assets ratio (79.97), which according to statistics obtained t (2.681) and its significance level (0.008) calculated for the variable in the regression coefficient significant error of less than 5%. Hence statistical hypothesis H0 is rejected at the 95% confidence level. According to the results of the second hypothesis regarding the relationship between the ratio of long-term debt to total assets of economic value added for companies that are in a growth period, in less than 5% error level is confirmed.

Table 7. The results of the regression model for the second hypothesis for companies that are in adolescence

$EVA = \alpha + \sum_{i=1}^n \beta_i X_i + \sum_{j=1}^n \beta_j Y_j + \sum_{i=1}^n \beta_i X_i Y_j + \beta_i size + \varepsilon$			
sig	t	The coefficient	Variable
0.0972	1.668304	1601.916	Intercept
0.039	2.372	3.510844	LDR
0.1937	1.304922	2197.163	DPS
0.0216	2.319455	160.8546	SIZE
0.2504	-1.153523	-150.8560	ROA
R2:0.43			F :3.46
Dorbin-watson 1.73			sig :0
* P < 0.01, ** P < 0.05, *** P < 0.10			

As the above table shows that, variable rate long-term debt to total assets (3.51) is that according to statistics obtained for its t (2.372) and its significance level (0.039) calculated regression coefficient for this variable less than 5% error level is significant the statistical hypothesis H0 is rejected at the 95% confidence level. According to the results of the second hypothesis regarding the relationship between the ratio of long-term debt to total assets and economic value for companies that are in a growth period. In less than 5% error level is confirmed.

Table 8. The results of the regression model for the second hypothesis for companies that are in a period of decline

$EVA = \alpha + \sum_{i=1}^n \beta_i X_i + \sum_{j=1}^n \beta_j Y_j + \sum_{i=1}^n \beta_i X_i Y_j + \beta_i size + \varepsilon$			
sig	t	The coefficient	Variable
0.0428	-2.043730	-12469.12	Intercept
0.121	1.681973	1.97	LDR
0.2215	-1.228026	-554.7134	DPS
			SIZE
0.4735	-0.718742	-658.8964	
0.0074	2.718930	2395.719	ROA
R2:0.38			F :3.59
Dorbin -watson 1.51			sig :*** :
* P < 0.01, ** P < 0.05, *** P < 0.10			

As the above table above, variable ratio (1.97) is obtained with respect to t statistic (1.681) and its significance level (0.121) calculated regression coefficient for this variable is significant at the level of error of less than 5% is, hence statistical hypothesis is not rejected H0 at 95%. According to the results of the second hypothesis regarding the relationship between economic added value of long-term debt to total assets for companies that are in a period of decline in less than 5% error level cannot be verified.

4. Conclusion

4.1 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

4.2 Proposals based on the findings

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

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.

REFERENCES

- Altendorfer, K., & Jodlbauer, H. 2011. Which utilization and service level lead to the maximum EVA?. *International Journal of Production Economics*, 130(1), 16-26.
- Berger, P. G., & Ofek, E. 1995. Diversification's effect on firm value. *Journal of financial economics*, 37(1), 39-65.
- Black, F., & Scholes, M. 1973. The pricing of options and corporate liabilities. *Journal of political economy*, 81(3), 637-654.
- Denis, D. J., & Mihov, V. T. 2003. The choice among bank debt, non-bank private debt, and public debt: evidence from new corporate borrowings. *Journal of financial Economics*, 70(1), 3-28.
- Ezeoha, A., & Botha, F. 2012. Firm age, collateral value, and access to debt financing in an emerging economy: evidence from South Africa. *South African Journal of Economic and Management Sciences*, 15(1), 55-71.
- Haghighat, H., & Bashiri, W. 2012." investigate the relationship between capital structure and financial flexibility; *Journal of Accounting*, Issue 8, Spring 49 to 71.
- Hossain, M., Prevost, A. K., & Rao, R. P. 2001. Corporate governance in New Zealand: The effect of the 1993 Companies Act on the relation between board composition and firm performance. *Pacific-Basin Finance Journal*, 9(2), 119-145.
- Hovey, M., Li, L., & Naughton, T. 2003. The relationship between valuation and ownership of listed firms in China. *Corporate Governance: An International Review*, 11(2), 112-122.
- Javed, A. Y., & Iqbal, R. 2007. Relationship between corporate governance indicators and firm value: A case study of Karachi stock exchange.
- Mahdavi, GH, & Rastegari, N. 2007. "Economic value added content for profit forecasts", *Journal of Humanities and Social Sciences*, Shiraz University, 26(1) 156-137.
- Mehran, H., Taggart, R. A., & Yermack, D. 1999. CEO ownership, leasing, and debt financing. *Financial Management*, 5-14.
- Thorburn, K. S. 2000. Bankruptcy auctions: costs, debt recovery, and firm survival. *Journal of financial economics*, 58(3), 337-368.

How to Cite this Article:

Karimi Zarchi S., Dehestani M.A., Farimani A., The relationship between the proportion of long-term debt to total assets and economic value throughout the life of the company, *Uct Journal of Management and Accounting Studies* 4(2) (2016) 15–20.