International Journal of Applied Operational Research
Vol. 3, No. 2, pp. 89-96, Spring 2013

Journal homepage: www.ijorlu.ir

Study of information content Equity Market Value in predicting Shareholder Value Added and Created Shareholder Value Evidence from Tehran Stock Exchange

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Received: 25 August 2012 ; **Accepted:** 24 December 2012

Abstract The aim of this paper is to investigate the relationship between Equity Market Value (EMV) and measures of creation value of the performance evaluation (Shareholder Value Added (SVA) and Created Shareholder Value (CSV)) in Tehran Stock Exchange. Thus this paper examined the creation value in Iranian Companies by Alfred Rappaport model and to assess the relationship, liner regression tests were used and the following hypotheses were tested: 1) There is a relationship between Equity Market Value and SVA. 2) There is a relationship between Equity Market Value and CSV. The Research results indicate that, there is not significant relationship between Shareholder Value Added and EMV while there is a positive significant relationship between Created Shareholder Value and EMV. It was found that an increase in EMV is a positively -to- impact on Created Shareholder Value.

Keywords Equity Market Value, Value Creation Measures, Performance Evaluation.

1 Introduction

With the globalization of rivalry and capital markets and a tidal wave of privatizations, Shareholder Value rapidly is catching the attention of executives throughout the world. The "equity culture" wildfire is spreading rapidly from the US to the rest of the world [1]; it is seen as crucial all over the world. For the firm's value and the increase in the firm's value over a certain period are essentially determined by the changes in expectations concerning the growth of the firm's cash flows and also by the changes in the firm's risk leading to changes in the discount rate. However, accounting only reflects the firm's history. Both the items of the income statement, which illustrate what has happened during a certain year, and those of the balance sheet, which reflect the state of a firm's assets and liabilities at a certain point in time, are historic data. Consequently, it is impossible for accounting-based measures; such as those we have seen (Economic value added (EVA), Economic Profit, Cash Value Added (CVA)), to measure value creation [2].

The idea of measuring value creation is not new. Most attempts to measure value creation have been based on numbers derived from historical performance. Research shows that many

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traditional accounting measures used have shortcomings. They have a fairly low correlation with Shareholder Value Creation. There is also a set of inventions and innovations that are designed to overcome the limitations of the traditional accounting framework, as seen from a 21st century perspective. This flow of new inventions to improved performance measurement hitting world business today, created the curiosity to investigate the measurement process used nowadays within the companies. The research issue will cover the different valuation methods used by companies to measure shareholder value creation [1].

The main aim of this paper is to empirically examine the relationship between Equity Market Value with financial performance of companies listed on Iran during the period 2006-2010 using two of creation value metrics of firm performance: Shareholder Value Added (SVA) and Created Shareholder Value (CSV). The results show: first, there is a positive significant between CSV and EMV, but no significant relationship founded between SVA and EMV.

2 Literature Review

The usefulness of traditional accounting measures, such as EPS, return on assets (ROA) and return on equity (ROE), and their effect on shareholder value, has been discussed for some time. Since the 1990s, strong arguments have been raised in favor of EVA as an accounting measure, mainly by the Stern Stewart Consulting Company and Associates [3].

Samadi largani and fathi [4] mentioned that there is not significant relationship between Refined Economic Value Added (REVA) and CVA with ROA and ROE, while there is negative and weak relationship between SVA with accounting measures.

Peterson and Peterson [5] analyzed accounting and value added measures of performance and found that accounting measures are not empirically less related to stock returns than return on capital.

Mahmood Abadi and Bayazidi [6] mentioned in their research that there is no significant relationship between the explanatory power of Residual Income (RI) assessment models and abnormal earning growth in the determination of companies' value in total and in different industries. In addition and approximately in all cases, RI assessment model has a relatively higher explanatory power in determining firms' value.

Uyemura et al.[7] used a sample of the 100 largest US banks for the ten-year period from 1986 to 1995 to calculate MVA and to test the correlation with EVA, as well as four other accounting measures, namely net income (amount), EPS, ROE and ROA.

Chmelikova [8] used a sample of the food-processing firms in the Czech Republic calculating relationship between EVA and accounting measures (ROA, ROE) that The regression analysis results indicate in all cases a positive correspondence between EVA and financial performance measures and show higher quality information content of EVA indicator as regards the ability to create shareholder wealth than the traditional performance measures.

Dalborg [9] indicated that value is created when the return to shareholders, in dividend and share price increases, exceed the risk-adjusted rate of return required in the stock market (the cost of capital).

Knight [10] said that higher profitability does not guarantee value creation for shareholders in a company.

Clark [11] added that what is significant is that a company adhering to shareholder value principles focus on cash flows rather than profits.

Martin and Petty [12] stated that value creation involves much more than only supervision firm performance. Value is created when managers are actively occupied with the process of distinguishing good investment opportunities and execution to capture their value potential.

Pablo Fernandez [2] has a certain opinion: accounting based metrics (including EVA, Economic Profit (EP), and Cash Value Added (CVA), being historic in nature does not metrics value creation.

In all the papers the basic theory is that shareholder value of alternative business strategies, including growth and expansion, can be estimated by discounting cash flows (DCF) from strategic investments by a suitable discount rate.

In a research with the title "shareholder value creation in India" by Jalaja [1], 44 companies out of 50 were investigated as the statistical sample of the study. The results indicate a powerfully relationship between EMV and CSV. Furthermore, the evidence showed that CSV had no relationship with the company size.

3 Shareholder Value Added

SVA is regarded as one of the most prominent publicists in the field of shareholder value metrics [13]. Alfred Rappaport showed the SVA approach. In short, SVA is defined as the difference between the present value of incremental cash flow before new investment and the present value of investment in fixed and working capital [14].

SVA = (Present value of cash flow operations during the forecast period + Residual value + marketable securities) – Debt

4 Equity Market Value and Shareholder Return (SR)

The EMV of a listed company is the Company's Market Value that is each share's price multiplied by the number of shares. The increase of EMV in one year is the EMV at the end of that year less than the EMV at the end of the previous year.
The SR is the SVA in one year, divided by the EMV at the beginning of the year [14].

Shareholder Return = SVA / EMV

5 Created shareholder value (CSV)

A company creates value for the shareholders when the shareholder return exceeds the share cost. In other words, company creates value in one year when it outperforms expectations [1].

Created shareholder value = EMV × (SR – Ke)
Or
Created shareholder value = SVA - (EMV × Ke)

Cost of Equity (Ke) is the Return that Shareholders expect to obtain in order to feel sufficiently remunerated.

The Cost of Equity as part of the Myron Gordon growth model is calculated and determined.

$$K_e = \frac{D1}{Po - F} + g$$

6 Model

The relationship between EMV and value creation measures was tested by the following regression models:

$$SVA = \alpha + \beta_1 EMV_{it} + \beta_2 LEV_{it} + \beta_3 SIZE_{it} + \varepsilon_{it}$$
$$CSV = \alpha + \beta_1 EMV_{it} + \beta_2 LEV_{it} + \beta_3 SIZE_{it} + \varepsilon_{it}$$

where:

1) dependent variables: SVA and CSV
2) independent variable: EMV

Control variables:

a. **Size:** This study controls the differences in firm's operating environment by including the size variable in the model. Size is measured by the log of total assets of the firm.
b. **LEV:** Leverage was measured in the study by debt to assets ratio.

7 The hypotheses

In testing the pooling regression model, hypothesis of the investigation are developed for construction sector. Furthermore, construction sectors will utilize the hypotheses, which as follows:

H_{1a}: There is a relationship between Equity Market Value and SVA.
H_{2a}: There is a relationship between Equity Market Value and CSV.

Statistically the test hypothesis is: Ha: $\beta \neq 0$, i = 1, 2.

There is a relationship between EMV and value creation measures of a company if β is positive or negative and statistically significant at the confidence level of 95 %.

8 Data gathering

This research has been done with using books, articles, thesis of a library and internet source.

The instrumentation would be papers for research summary. The data from general assembly of ordinary model companies will be published in Iran Stock Exchange and also the report of annual operation of board of directors which were gathered and the data were inferred.

9 Data analysis & Research Model

The cases stated below were studied in the regression:

1) Normal distribution data test*
2) Autocorrelation test**
3) Significance of the model and its coefficients***

* Kolmogorov-Smirnov (K-S) test has been used for testing the normal distribution data.
**Durbin-Watson test has been used for testing autocorrelation of the data.
***F statistic has been used for model significance and the testing of the significance of the coefficients has been done with t statistic.

10 Population, sample size and sampling

Population in the research is accepted companies in Tehran's Stock Exchange which have these conditions:

1. Population before 2006 in the Tehran's Stock Exchange
2. Because of increasing the comparing ability, its financial period ends to March.
3. Have not changed the activity or the annual fiscal during the observed years.
4. The company's activity should be productive and so, the financial and investing institutes and banks will not contain the sample.
5. The data should be available.

In this respect the numbers of the companies who have the above characteristics and can be noticed as a population are 75 companies.

11 Finding

The data related to 75 companies during 2006 to 2010 were gathered from Tehran Stock Exchange, and by using Excel and SPSS.

Table 1 contains descriptive statistics of the variables. The result shows that, the SVA has the most kurtosis and also, the SVA and EMV have the most diversion is more than other variables.

Table 1 Statistics

		LEV	size	EMV	SVA	CSV
N	Valid	375	375	375	375	375
	Missing	0	0	0	0	0
Mean		.596196	27.2615	12.8207	26.1900	-.5080
Median		.609410	26.9498	12.7535	26.0704	-.5218
Std. Deviation		.1623536	1.37500	1.49695	1.47162	.62621
Skewness		-.437	.950	.214	-.107	.712
Std. Error of Skewness		.126	.126	.126	.126	.126
Kurtosis		-.008	1.030	-.043	1.037	.697
Std. Error of Kurtosis		.252	.251	.251	.251	.251

In the inferential statistics the results of the Multiple Linear Regression tests the relation between SVA, EMV and CSV with are presented.

11.1 The results of the first hypothesis test

According to Table 2 and 3, consequence due to the significance level is more than 0.05, so there is not relationship between the variables.

According to table 4, in this hypothesis the independent variable is SVA, and the dependent variable is EMV. The t (t student statistics) amount is less 1.96 (1.148<1.96) and also a significance level is 0.252 which is higher than 0.05, so there are not significant relation between variables.

Table 2 ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.166	3	1.055	.484	.693[a]
	Residual	806.016	370	2.178		
	Total	809.182	373			

a. Predictors: (Constant), EMV, SIZE, LEV
b. Dependent Variable: CSV

Table 3 Model Summary[b]

Model					Std. Error of the Estimate	Change Statistics					Durbin-Watson
		R	R Square	Adjusted R Square		R Square Change	F Change	df1	df2	Sig. F Change	
dimension0	1	.170[a]	.029	.023	1.47595	.004	.484	3	370	.693	1.950

a. Predictors: (Constant), EMV, SIZE, LEV
b. Dependent Variable: SVA

Table 4 Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	24.705	1.831		13.492	.000		
	lev	.091	.491	.010	.185	.854	.918	1.089
	size	.024	.057	.023	.429	.668	.962	1.039
	emv	.060	.052	.061	1.148	.252	.948	1.055

a. Dependent Variable: SVA

11.2 The results of the second hypothesis test

According to tables 5 and 6, due to the significance level which is loser than 0.05, so there is relationship between the variables.

According to table 7, the t (t student statistics) is larger 1.96 (3.806> 1.96) and also, the significance level is less than 0.05 (0.05> 0.000), the regression model is significant. With respect to t statistics and its significance, this can be inferred that, the positive variable

coefficients show that there is a direct relation between variables, so, there is a linear (direct and weak) between variables.

Table 5 ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.490	3	.497	3.273	.028[a]
	Residual	144.325	370	.390		
	Total	145.815	373			

a. Predictors: (Constant), EMV, SIZE, LEV
b. Dependent Variable: CSV

Table 6 Model Summary[b]

Model						Change Statistics					
		R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
dimension0	1	.502[a]	.252	.248	.62455	.256	3.273	3	370	.028	1.995

a. Predictors: (Constant), EMV, SIZE, LEV
b. Dependent Variable: CSV

Table 7 Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	.055	.011		4.989	.000		
	LEV	-.145	.208	-.038	-.699	.485	.918	1.089
	size	-.038	.024	-.085	-1.603	.110	.962	1.039
	EMV	.018	.022	.043	3.806	.000	.948	1.055

a. Dependent Variable: CSV

12 Conclusion

The aim of this paper was to assess the claims of SVA and CSV proponents on Iranian companies and define the implication for their managers. From a theoretical point of view, SVA and CSV represents a management tool that leads to the efficient use of operating and long-term assets, leads to efficient cost of capital and capital structure decisions, and compels management to focus on value. These are the facts readable from its formula. The question is whether this results in return to shareholders as well. This conclusion should not be seen as rejecting the accounting measures. The SVA and CSV measures cannot answer the call for a complex performance measure, which would under any circumstances lead to the maximization of shareholder wealth. Thus, According to the existence of a significant correlation between the EMV and CSV, it is recommended that the investors while predicting the Created Shareholder Value and determining firm value should pay special attention to this measure (EMV).

Finally, The results of this study indicated that the CSV measures have a positive significant relationship with EMV in Tehran Stock Exchange accepted companies so as the correlation between EMV and the SVA measure has been nearly equal in that period.

As for future studies, it is suggested that the relationship between value creation and EMV be investigated using adjusted economic value added (AEVA) and cash flow return on investment (CFROI).

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