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Use of Equity Market Value for explaining Cash Flow Return on Investment (CFROI) and Created Shareholder Value (CSV) Evidence from Automotive Industry Tehran Stock Exchange

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Abstract The concept of Value Creation is gaining momentum in Iran under the open regime. Iranian Companies are geared to understand and act upon the concept of Shareholder Value to stay competitive in this unfathomable and volatile environment. Most executives today understand that, the need to create shareholder value is paramount and the world's most competitive management teams are responding to the pressure to create value by embracing new metrics and new models for managing their companies. This paper examined the content of information Equity Market Value for explaining Cash Flow Return on Investment (CFROI) and Created Shareholder Value (CSV) in Iran Companies by Alfred Rappaport model, a refined model based on Market Values, believed to be a superior model when compared to the traditional Metrics (ROE, ROA, ROS, EPS, CFO) and various models developed by Consulting Firms (EVA, MVA, REVA, AEVA, SVA, CVA, CFROI, CSV) to analyze Value Creation. For this purpose a sample of 21 companies representing in the automotive of industry for a period of five years from 2006-2012 have been analyzed. The Research results indicate that there is significant relationship and positive between CFROI and Equity Market Value, while there is not relationship between CSV and Equity Market Value.

Key word Cash Flow Return on Investment, Created Shareholder Value, Iran.

1 Introduction

With the globalization of competition and capital markets and a tidal wave of privatizations, Shareholder Value rapidly is capturing the attention of executives worldwide. The "equity culture" wildfire is expansion rapidly from the US to the rest of the world; it is seen as critical all over the world. Shareholder Value is slowly becoming the global standard for measuring business performance. The CEOs of modern firms are anxious about Shareholder Value. Satisfying the Shareholders is the best way to make sure that other stakeholders are served as

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well. If Shareholders believe that the corporation is under performing, they can try to replace the board in the next election. If they succeed the new board will appoint a new management team. The objective function of the company is to maximize the shareholder value. Managers in most of the firms of the world focus on building shareholder value [1].

Most executives today understand that the need to create shareholder value is paramount and the world's most competitive management teams are responding to the pressure to create value by embracing new metrics and new models for managing their companies.

The main aim of this paper is to empirically examine the relationship between Equity Market Value with financial performance of companies listed on Automotive Industry Iran during the period 2006-2012 using two of creation value metrics of firm performance: Cash Flow Return on Investment (CFROI) and Created Shareholder Value (CSV). The results show: first, there is not a significant relationship between CSV and EMV, but significant relationship founded between CFROI and EMV.

2 Literature Review

Knight [2] said that higher profitability does not guarantee value creation for shareholders in a Firm.

Dalborg [3] 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).

Clarke [4] added that what is significant is that a company adhering to shareholder value principles focus on cash flows rather than profits.

Petty and Martin [5] state 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 [6] has a certain opinion accounting based metrics (including Economic Value Added (EVA), Economic Profit (EP), and Cash Value Added (CVA); being historic in nature does not metrics value creation.

Pour Heydari et al [7], in their studies on the companies listed in Tehran Stock Exchange, resulted that, 1) a noticeable portion of company's value changes in the period of 1996-2004 is determined by profit; 2) the majority of the company's total profit and book value explanatory power is because of profit, and 3) the company's book value do not have enough explanatory power in comparison with Earning Per Share (EPS).

Goyandeh [8] in his thesis entitled "comparison the data context of EVA and Refined Economic Value Added (REVA) in relation with stock return of accepted companies in Tehran Stock Exchange "compared the data context of EVA and REVA with stock return. The results from statistic data analysis of research assumptions showed that there is no significant difference between REVA and stock returns. However the EVA has the more relationship with stock return in compare with REVA.

Zahiri [9] investigated "Relationship of EVA and EPS with EMV" for 275 sample companies in the period 2000 through to 2004 (Year – Company) and found that EVA relative to EPS had a stronger correlation with EMV.

Pashei [10]studied the relationship between creation value measures of EVA, REVA, MVA and and accounting measures of ROE, ROA and CFO with Market Adjusted Return (MAR) companies in Iran. Result shown that REVA in compare with ROA and ROE was better correlation with MAR.

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Mahmood Abadi and Bayazidi [11] resulted 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.

Darabi and Baani [12] in a research on "Measuring the Correlation of EVA, Net Profit and Operational Profit with EMV" of the listed companies on TSE found that despite the significant correlation between EVA and EMV, in regard to net profit and operational profit, EMV was relatively less indicative.

Though there is rich literature providing useful insights to earnings related issues, very few researchers have made efforts to Metric value creation. Hence an attempt has been made in this paper to Metric the Cash Flow Return on Investment and Created Shareholder Value in select Iranian companies.

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.

Samadi largani and fathi [13] results that there is not significant relationship between REVA and CVA with ROA and ROE, while there is negative and weak relationship between SVA with accounting measures

3 Research method

3.1. Sample and data

Given the thinness of the Iranian capital market, this study uses all publicly traded firms on Iranian stock exchange during the period of 2006-2012. Data base on records of financial statements and market data of all Iranian firms that are listed on Automotive Industry Iran Stock Exchange, and that are subject to the regulations by the Capital Market Authority in Iran. Listed firms were then screened against several factors; and remaining firms were then tested for availability of financial data during the test period (2006-2012). This screening yielded a final sample of 21 firms.

3.2. Variables measurement

3.2.1. Dependent variables

This study uses Equity Market Value for explaining CFROI and CSV in Automotive Industry of Iran stock exchange. 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 [5]. CSV computed as; $EMV \times (SR - K_e)$ *Or SVA* - $(EMV \times K_e)$ that, 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. Computed as; *(Present value of cash flow operations during the forecast period + Residual value + marketable securities) – Debt*. 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. CFROI is the company level equivalent of IRR. This measure was originally developed by Holt consulting, which was later acquired by the Boston Consulting Group (BCG). CFROI is especially for measuring the true

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economic profitability of assets of capital-intensive companies. It is the discount rate that equates the present value of the gross cash flows and salvage to the gross investments and hence is the composite internal rate of return, in current dollar terms [5]. CFROI computed as; *CFROI= (Gross Cash Flows – Economic Depreciation)/ Gross Investment.*

The CFROI can then be compared to the real (inflation-adjusted) cost of capital to evaluate whether the company's assets are creating value. For projects that do not have the same risks as the company, the CFROI is compared to the appropriate hurdle rate that reflects the risk of the projects.

3.2.2. Independent variable (Equity Market Value)

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 the EMV at the end of the previous year.

4 The research work was based on following Hypotheses

1. There is a Strong Correlation between EMV and CFROI in Automotive of industry Iran Stock Exchange.
2. There is Strong Correlation between EMV and CSV in Automotive of industry Iran Stock Exchange.

5 Methodology

The study is based on the secondary data, Sampling technique used is Judgment sampling and the data is obtained from "Capitoline" database maintained by the automotive of industry Iran Stock Exchange. The study uses the data for a period of five years from 2006-2012 of 21 companies.

The relationship between EMV with CSV and CFROI was tested by the following regression models:

$$\mathrm{CFROI}_{it} = \beta_0 + \beta_1 \mathrm{EMV}_{it} + \beta_2 \mathrm{LEV}_{it} + \beta_3 \mathrm{SIZE}_{it} + \beta_4 \mathrm{GROWTH}_{it} + \varepsilon_{it}$$

$$\mathrm{CSV}_{it} = \beta_0 + \beta_1 \mathrm{EMV}_{it} + \beta_2 \mathrm{LEV}_{it} + \beta_3 \mathrm{SIZE}_{it} + \beta_4 \mathrm{GROWTH}_{it} + \varepsilon_{it}$$

where:

CFROI_{it} = Cash Flow Return on Investment for firm I in year t
CSV_{it} = Created Shareholder Value for firm I in year t
EMV_{it} = Equity Market Value for firm I in year t
LEV_{it}= Ratio of Total Debt to Total assets for firm I in year t
SIZE_{it} = Natural logarithm of Total assets for firm I in year t
GROWTH_{it}= growth opportunities as measured by Tobin's q (Tobin's q is calculated by dividing the market value of a firm by the replacement value of the book equity)
ε_{it}= the error term.

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6 Testing of Hypothesis

H_0: There is a Strong Correlation between EMV and Cash Flow Return on Investment in Automotive of industry Iran Stock Exchange.
H_1: There is no a Strong Correlation between EMV and Cash Flow Return on Investment in Automotive of industry Iran Stock Exchange.

Hypothesis 2
H_0: There is Strong Correlation between EMV and Created Shareholder Value in Automotive of industry Iran Stock Exchange.
H_1: There is no a Strong Correlation between EMV and Created Shareholder Value in Automotive of industry Iran Stock Exchange.

Testing of Hypothesis 1

In the inferential statistics the results of the Multiple Linear Regression (tests the relation between EMV and Cash Flow Return on Investment) with be presented. Table 1 shows the result of Multiple Linear Regression in a cumulative way. According t student test, the significance level of the independent variable is lower than .05 that indicates the regression relationship between CFROI and EMV.

Table 1 The results of the analysis for Model 1

Variable	B	Std. Error	t-Statistic	Sig.	Durbin-Watson
Consent	1.042E6	552193.087	1.888	.065	1.751
EMV	.571	.178	-3.204	.002	
LEV	1.083	.039	53.127	.000	
SIZE	-3.537	4.609	-.767	.444	
GROWTH	-.058	-.019	-3.063	.002	
R^2 (Adj. $-R^2$)			. 176 (.159)		
F (Sig.)			6.860 (.000)		
Predictors: (Constant), Predictors: (Constant), EMV, LEV, SIZE, GROWTH Dependent variable: CFROI					

According to table 1 there is a relationship between variables and the hypothesis will be confirmed. Regarding the above-mentioned table, the model can be written as follows:

CFROI =.571 EMV+1.083 LEV-.058 GROWTH

The results of the study show the positive significant relationship between these two variables at 95% confidence level. The coefficient of determination level of the model is 17.6% the results of testing the research hypothesis is provided in Table 1.

Testing of Hypothesis 2

In the inferential statistics the results of the Multiple Linear Regression (between EMV and Created Shareholder Value) with are presented. Table 2 shows the result of Multiple Linear Regression in a cumulative way.

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Table 2 The results of the analysis for Model 2

Variable	B	Std. Error	t-Statistic	Sig.	Durbin-Watson
Consent	26.794	1.256	21.338	.000	1.625
EMV	-.486	.122	-1.096	.082	
LEV	.205	.078	2.620	.009	
SIZE	.147	.052	3.126	.000	
GROWTH	-.088	.046	-1.906	.057	
R^2 (Adj. $-R^2$)			. 060 (.052)		
F (Sig.)			7.562 (.000)		
Predictors: (Constant), Predictors: (Constant), EMV, LEV, SIZE, GROWTH Dependent variable: CSV					

As it is obvious in the table 2, the significance of the regression model in the 95% have been calculated by the F statistic and the level of significance is also a prove on it. So, there is a relationship between variables and the hypothesis will be confirmed. After eliminating the variables of the model is meaningless in the 95% confidence level.

also, According to table 2, the t (t student statistics) amount is less 1.96 (1.096 < 1.96) and also a significance level is .082 which is higher than .05. So, there is no significant relation between variables (EMV and CSV) to research.

7 Conclusion

The aim of this paper was to assess the claims of CFROI and CSV proponents on Iranian companies and define the implication for their stakeholders. The obtained results of testing the hypotheses shows there is no significant relationship between CSV and EMV, whereas there was a positive relationship between CFROI and EMV; i.e. the change in EMV of the companies listed in Automobile Industry of Tehran Stock Exchange justifies the changes in CFROI at the given period. Thus, According to the existence of a significant correlation between the EMV and CFROI, it is recommended that the investors while predicting the CFROI and determining firm value should pay special attention by EMV; the increase of Equity Market Value is CFROI. Also For future study recommended the relationship of EMV with other Metrics of value creation.

References

1. Jalaja, K. R., (2010). Shareholder Value Creation in India- a sectoral analysis, 1-32.
2. Knight, J. A., (1997). Value Based Management: Developing a Systematic Approach to Creating Shareholder Value. New York: McGraw-Hill Professional.
3. Dalborg, H., (1999). Shareholder Value in Banking, session of institute International Detrudes Bancaires.
4. Clarke, P., (2000). Shareholder value. Accountancy Ireland, 32(5), 10-18.
5. Martin, J. D., Petty, J. W., (2000). Value-based management: the corporate response to the shareholder revolution. Boston, Massachusets: Harward Business School Press.
6. Fernandez, P., (2002). A Definition of Shareholder Value Creation, Research Paper no. 448.
7. Pour Heydari, O., Soleimani Amiri, G., Sfajo, M., (2005). Evaluation of relationship between earnings and book value by equity market value of companies listed in Tehran Stock Exchange. The study of Accounting and Auditing, 42, 3-19

[Downloaded from ijaor.ir on 2026-11-28]

8. Goyandeh, K., (2007). Compare of information economic value added(EVA) and refined economic value added (REVA) in relationships by stock retune, Evidence from Tehran Stock Exchange, State college of Management, Shiraz University, Iran.
9. Zahiri, M., (2007). Investigating the Relationship of EVA and EPS with EMV in the Listed Companies on TSE, M.SC. Thesis, University of Mazandaran, Iran.
10. Pashei, M., (2008). Study of modern evaluation methods (EVA, MVA, REVA) and traditional evaluation methods (ROE, ROA, CFO); Evidence from Tehran Stock Exchange", Master of Science thesis accounting, State college of Management, mazandaran University, Iran.
11. Mahmud Abadi, H., Bayazid, A., (2008). Compare the explanatory power of fashion residual income and abnormal earnings growth assessment models in the value of companies. Accounting and Auditing Review, 54, 101-116.
12. Darabi, R., Baani, M., (2009). Assessing the Correlation of EVA, Net Profit and Operational Profit with EMV of the Listed Companies on TSE, Quarterly Journal of Financial Accounting, 1(1), 119-136.
13. Samadi Largani, N., Fathi, Z., (2012). Study of relationship between Value Added of measures with ROE and ROA; Evidence from Iran Stock Exchange of companies. American Journal of Scientific Research, 59, 91-97.

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