Shareholders' Wealth: MVA Approach on IT Sector in India

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Abstract

Market value added(MVA) is the goodwill attributed by the market to a firm as a personal measure. The study has chosen a sample of top 10 firmsviz.TCS, Infosys, Wipro, HCL, Tech Mahindra, Oracle Financial Service, Mindtree, Mphasis Hexaware and TaxElxsi of IT sector in India, which have listing flag in Bombay Stock Exchange, for the period from 2011 to 2015. The study used variables viz. return on sales (ROS), return on total assets (ROTA) and return on equity(ROE) and shareholders' wealth(market value added (MVA)) and used descriptive statistics, correlation and multiple regression for analysis. The study proves that there is a significant impact of return on sales (ROS), return on total assets (ROTA) and return on equity (ROE)on shareholders' wealth(market value added (MVA)), hence it is found that the return on sales, return on total assets and return on equity have impact on shareholders' wealth(market value added (MVA))of firms of IT sector in India for the study period.

Keywords: Shareholders' wealth; firm performance; value of firms; financial markets;IT sector in India.

JEL: L25, G32, O16.

Introduction

Market value added(MVA) is the difference between the total market value of afirm (*debt and equity*) and the amount ofcapital invested.Greater market value added highlights that the firm has added more value than what was contributed by the shareholders and investors, while a negativeMVAdisplays that the firm destroys value.The MVA, on the other hand, is thedifference between the present total market value of a firm and the capital divided by the number of investors (*shareholders and bondholders*). The firm'sbook value compares the amount of shareholders' equity to the number of shares outstanding. If the market value of shares is lower than the book value the shares then it may be undervalued. Thus, the MVA is a possible indicator of the value of firm.

Review of Literature

Wibowo and **Berasategui** (2008),in a research study titled "The relationship between economic value added and market value added with reported earnings: An empirical research of Indonesia stock exchange" examined 40 listed firms in Indonesia stock exchange during the period from 2004 to 2007 and used correlation and multiple

regression. The study found that general Indonesia listed firms produced negative economic value added (EVA). The EVA and MVA are proved to have correlation with reported earnings, however the result of EVA is lower than that of MVA.

Lavanya and **Ramchendra Reddy** (2012), in a research study titled "Analysis of financial performance of Iron and Steel industry with the help of market value added approach" examined 11 firms in Iron and Steel in India during the period from 2006 to 2011. The study considered return on sales (ROS), earnings per share (EPS), return on total assets (ROTA), capital productivity and labor productivity as determinants of financial performance. The study used descriptive statistics and multiple regression for analysis and found that the Iron and Steel firms played an important role in building the industrial base of the nation and providing infrastructure for the development of the firms.

Rajesh et al. (2012),in a research study titled "Empirical study on economic value added and market value added approach" considered 10 cement firms for the period from 2001 to 2011. The tools used for analysis were mean, variance, standard deviation and multiple correlation. The study concluded that the modern measures viz. economic value added (EVA) and market value added (MVA) showed same result on the performance of the firms.ACC Ltd and Grasim Cements Ltd had satisfactory performance with consistent return to the shareholders. The two measures viz. EVA and MVA had relative importance to assess the performance of the firms.

Uppili Srinivasan et al. (2012), in a research study titled "Economic value added and market value added of private steel companies" examined four private steel firms during the period from 2007 to 2011. The study used weighted average cost of capital, dividend yield, net profit, and return on assets (ROA) as the determinants of shareholders' wealth. The study concluded that the firms will replace other performance measures with EVA and eventually will get to be judged by the extent of value generated for shareholders over and above the weighted average cost of capital.

Vijaykumar (2012), in a research study titled "Determinants of market value added: Some empirical evidence from Indian automobiles industry" examined 26 firms of automobile industry during the period from 1996-97 to 2008-09. The study used sales, return on sales (ROS), earnings per share (EPS), return on total assets (ROTA), market price (MP) and profit after tax (PAT) as the determinants of shareholders' wealth. The tools used were descriptive statistics and multiple regression. The study found that relationship between MVA and EVA was seen as negative for 65% of the firms during the study period; association between MVA and the selected financial variables showed both positive and negative impact. EPS and PAT were the best explanatory variables of MVA of Indian automobiles industry.

Nakhasi and **Bnti Hamid** (2013), in a study titled "The relationship between economic value added, return on assets, and return on equity with market value added in Tehran stock Exchange" examined 87 listed firms in Tehran stock exchange during the period from 2004 to 2008. The tools used were correlation, regression, and Durbin Watson test. The result showed that EVA was an effective measure in describing the firm's market value. The firms can use EVA with other measures to evaluate their performance and these measures can help them to consider cost of capital (equity and debt) and return on equity capital employed for improving their performance thereby increasing the shareholders' wealth.

Nakhasi and **Bnti Hamid** (2013), in a research study titled "Analyzing the relationship between economic valued added (EVA) and accounting variables with share market value in Tehran stock exchange" examined 87 non-financial listed firms in Tehran stock exchange during the period from 2004 to 2008. The tools used for analysis were correlation, regression and ANOVA. The study showed that there was significant relationship between accounting variables (net profit and operation profit) and market value added (MVA) than the economic value added (EVA);EVA has significant correlation with share market value and net profit (NP) has highly significant relationship with market value.

Pourali and **Roze** (2013),in a research study titled "The relationship between market value added with refined economic value added and performance accounting criteria in the firms listed in Tehran stock exchange" examined 67 listed firms in Tehran stock exchange for the period from 2006 to 2010. The study used mean, standard deviation, skewness, Jarque-Bera Statistics, correlation, regression and Hausman Test. The study considered return on assets (ROA) earnings per share (EPS), refined economic value added (REVA), return on equity (ROE) and real time (RT) as determinants of shareholders' wealth. The study showed the relationships between MVA and ROA where Pearson's linear correlation coefficient was 0.7 and the relationship was positive and significant.

Larojan and **Thevaruban** (2015),in a research study titled "Market value added (MVA) with economic value added (EVA) profitability performance of listed financial companies in Sri Lanka" examined 20 listed firms for the period from 2012 to 2013. The study used regression and ANOVA for analysis. The study showed that economic value added (EVA) is an effective measure in describing the firm's stock market value.

Mara Ikbar and **Shintia Dewi** (2015), in a research study titled "The analysis effect of economic value added and market value added on share price of sub-sector companies

of property incorporated in LQ 45Indonesia stock exchange" examined during the period from 2009 to 2013. The study used regression, t-test and Hausman test for analysis. The study showed that partially, EVA and MVA significantly had effect on the stock price; the independent variables (EVA and MVA) have significant effect on stock price and the co-efficient of determination (R^2) is 86.98%, which implies that the independent variables could explain the dependent variable (MVA and EVA) to an extent of 86.98%, while the reaming 13.02% was explained by the other variables.

Objectives

1. To analyse the relationship between the return on sales, return on total assets as well as return on equity and shareholders' wealth(market value added (MVA)) of IT sector in India.
2. To analyse the impact of return on sales, return on total assets and return on equity on shareholders' wealth(market value added (MVA))of IT sector in India.

Hypotheses

The relationship between MVA and the three variables viz. return on sales (ROS), return on total assets (ROTA) and return on equity (ROE)of the firms has been measured by **Lal Bhasin (2013); Pourali** and **Roze (2013); Nakhaei** and **Bnti Hamid (2013).**The relationship between MVA and ROS was also studied by **Nirmal kumar (2014);** and **Kangarlouei Collins et al.(2012).**The relationship between MVA and ROTA was analysed by various authors, for instance **Nirmal kumar (2014).**Hence, the hypotheses are:

$\mathbf{H_0^1}$: "There is no significant relationship between return on sales and shareholders' wealth (market value added (MVA)) of IT sector in India".

$\mathbf{H_0^2}$: "There is no significant relationship between return on total assets and shareholders' wealth (market value added (MVA)) of IT sector in India".

$\mathbf{H_0^3}$: "There is no significant relationship between return on equity and shareholders' wealth (market value added (MVA)) of IT sector in India".

The impact of return on sales (ROE),return on total assets(ROTA) and return on sales (ROS) on market value added (MVA) was studied by **Ramachandran** and **Lavanya (2012); Ramachandra (2016); Lal Bhasin (2013); Nakhaei** and **Bnti Hamid (2013).** Hence, the hypotheses are:

$\mathbf{H_0^4}$: "There is no significant impact of return on sales on shareholders' wealth (market value added (MVA)) of IT sector in India".

$\mathbf{H_0^5}$: "There is no significant impact of return on total assets on shareholders' wealth (market value added(MVA)) of IT sector in India".

$\mathbf{H_0^6}$: "There is no significant impact of return on equity on shareholders' wealth (market value added (MVA)) of IT sector in India".

Research Methodology

The study is based on secondary data, which were collected from Bombay Stock Exchange (BSE).

Data Sources

The study is of analytical nature, which makes use of secondary data, a part from the annual report of firms' data source, the rest were collected from academic research journals.

Sampling Design

The study has chosen top 10 IT firms in India for the period from 2011 to 2015,which are listed in Bombay Stock Exchange (BSE).The Indian IT sector is fast growing industry in India and it has shown a phenomenal growth in the last few decades. The top10 IT firms in India (2016) are selected on the basis of market capitalization***.**

The selected sample of 10 firms of IT sector in India are show in table 1.

Table 1
Sample Firms of IT sector in India

Sl. No.	Firm Name
1	Tata Consultancy Services
2	Infosys
3	Wirpo
4	HCL
5	Tech Mahindra
6	Oracle Financial Service
7	Mindtree
8	Mphasis
9	Hexaware
10	Tax Elxsi

Source:www.bse.com: as on 16.01.2016

Variables used for Analysis

(i) Return on Sales (ROS)

The return on sales (ROS) is a ratio used to derive the proportion of profit generated from sales. The concept is useful for determining the ability of management to efficiently generate profit from a given level of sales.

Return on sales = PBIT/Sales

Where,

PBIT= Profit before interest and taxes

(ii) Return on Total Assets (ROTA)

Return on total assets (ROTA)gives productivity of firms and of management's ability and efficiency. The index measures the relationship between profit and total resources invested. The ROTA measures the extent of the firm's assets are being used to generate profit.

Return on total assets (ROTA) = (PBIT- Tax provision) Total assets

(iii) Return on Equity (ROE)

The return on equity (ROE) or return on capital (ROC) is the ratio of net income of a business to its stockholders' equity during a year. It measures profitability of stockholders.

Return on equity (ROE) = Net Income/ Shareholders' Equity

(iv) Market Value Added (MVA)

The MVA is the difference between the total market value of a firm and the economic capital. A firm's total market value is equal to the sum of the market value of its equity and debt.

MVA=MV-IC

Where,

MVA= Market value added

$$\text{Market value of firm} = \frac{\text{EBIT}}{\text{WACC}}$$

Where,

EBIT= Earnings before interest and taxes

WACC= Weighted average cost of capital

$$\text{WACC} = \frac{\Sigma xw}{\Sigma w}$$

IC= Invested capital

Research Methods

The study used descriptive statistics, correlation and multiple regression for analysis.

(i) Correlation Analysis

$$R = \frac{n(\Sigma xy)-(\Sigma x)(\Sigma y)}{\sqrt{[n\ \Sigma x^2-(\Sigma x^2)]\ [n\Sigma y^2-(\Sigma y^2)]}}$$

Where,

n= Number of items

=Sigma

x= (ROS, ROTA. ROE)

y= Market value added

(ii) Regression Analysis

The regression equation is:

$Y = a + b_1(X_1) + b_2(X_2) + b_3(X_3) + u$

Y= MVA (market value added)

a= Regression constant

b1, b2…= Regression co-efficient

X_1=Return on sales (ROS)

X_2= Return on total assets (ROTA)

X_3= Return on equity (ROE)

u= Error term

Analysis and Discussion

The descriptive statistics of market value added (MVA), return on sales (ROS), return on total assets (ROTA) and return on equity (ROE) of IT sector in India are presented in table 2.

Table 2

Descriptive Statistics of MVA, ROS, ROTA* and*ROE of IT sector in India from 2011 to 2015

Variables	N	Minimum	Maximum	Mean(")	Std. Deviation( )
MVA	10	-35057.7500	1715.3462	-9430.7970	12612.82427
ROS	10	-1866.13171	3114.04321	-2411.3572	1570.23757
ROTA	10	-2.032	-.884	.357	1.000
ROE	10	-.970	1.619	.487	.816

***Source**: Computed result based on collected data from BSE*

It is inferred that variable MVA has minimum value as -35057.75 and maximum value as 1715.34, while the $\bar{X}$ is -9430.79 and σis 12612.82. It is inferred that return on sales (ROS)has minimum value as -1866.13 and maximum value as 3114.04, while the$\bar{X}$is -2411.35 andσis 1570.23. It is inferred that return on total assets (ROTA) has minimum value as -2.03 and maximum value as -0.884, while the$\bar{X}$is 0.357andσisone. It is found that return on equity (ROE) has minimum value as -0.97and maximum value as 1.62, while the $(\bar{X})$is 0.487andσis0.816.

An attempt has been made to examine the relationship between return on sales, return on total assets and return on equity and MVA by computing correlation coefficient (vide table 3).

Table 3

Results of Correlation Analysis for Selected Variables of IT sector in India for the period from 2011 to 2015

Correlation		MVA
ROS	Pearson Correlation	**-.973*****
	Sig. (2-tailed)	.000
	N	10
ROTA	Pearson Correlation	**-.937*****
	Sig. (2-tailed)	.000
	N	10
ROE	Pearson Correlation	**.636***
	Sig. (2-tailed)	.099
	N	10

***Source**: Computed result based on collected data from BSE*

****Correlation is significant at 0.01 level (2-tailed).*

** Correlation is significant at 0.10 level (2-tailed).*

The table shows that H01- H03: "There is no significant relationship between return on sales, return on total assets as well as return on equity with shareholders' wealth" is rejected. There is a significant negative relationship between ROS and shareholders' wealth (MVA)(-.973), ROTA and shareholders' wealth (MVA) (-.973)at 1% level. However, there is a positive relationship between ROE and shareholders' wealth (MVA) (.636) at 10% level.

The result of regression analysis of return on sales, and return on total assets and return on equity on shareholders' wealth (market value added) is shown in table 4.

Table 4

Multiple Regression Results of Selected Variables on MVA of IT Sector in India for the Period from 2011 to 2015

Model	Un-standardized Coefficients		Standardized Coefficients	t	Sig.
		Std. Error	Beta		
MVA	-118.507	992.921		-1.192	.278
ROS	-.054	.020	-.476	-2.672	.037
ROTA	-.133	.039	-.762	-3.439	.014
ROE	5.943	1.605	.350	3.704	.014
R^2					.985
Adjusted R^2					.977
F-Statistic					.000
Durban Watson					2.852

***Source**: Computed results based on collected data from BSE*

Table 4 shows that there is a significant negative coefficient (-.476) of ROS and (-.762) of ROTA on shareholders' wealth (market value added). Hence, H04 and H05:"there is no significant impact of return on sales as well as return on total assets on shareholders' wealth (market value added)"is rejected at 5% level. However, there is a significant positive impact of ROE (.350) on shareholders' wealth (market value added) at 5% level. Hence, H06: "there is no significant impact of return on equity on shareholders' wealth (market value added)" is rejected at 5% level. Durban Watson is 2.852 (ranges between 2 and 3), whose successive error terms are, on an average, much different from one another, i.e. negatively correlated.

The overall regression model fit, which is represented by R2 (98%),shows that the explaining variables determine 98% of the changes in shareholders' wealth (MVA). The F statistics is significant @ 1% level, indicating that the variance in the dependent variable (MVA) is explained by the variance in the(ROS, ROTA, ROE) independent variables selected.

Conclusion

As far as the shareholders' wealth(market value added) is concerned, the study concludes that there is a significant impact of return on sales (ROS), return on total assets (ROTA) and return on equity(ROE)on shareholders' wealth (market value added) though ROS, and ROTA negatively but ROE positively. Hence, based on the results, the study rejects H04, H05 and H06revealing that the return on sales, return on total assets and return on equity have impact, of course the return on sales and return on total assets negatively while, the return on equity positively, on shareholders' wealth (market value added)of IT sector in India.

Limitations of the Study

- The present study is based on 10 firms of IT sector only.
- In the present study, descriptive statistics, correlation and regression are only used for analysis.

Note: Market Capitalization*

Market capitalization represents the aggregate value of a firm's stock. It is obtained by multiplying the number of equity shares outstanding by the current market price per share. It is used by the investment community in ranking the size of the firms, as opposed to sales or total assets figures. It is also used in ranking the relative size of stock exchanges, being a measure of the sum of the market capitalization of all firms listed on each exchange.

References

Kangarlouei, S. J., M. Motavassel, A. Azizi and M. S. Farahani. 2012. The investigation of the impact of ownership concentration on financial performance measurement criteria and market value added. International Journal of Economic & Management Science 1(9): 44-51.

Lal Bhasin, M. 2013. Economic value added and shareholders wealth creation: Evidence from a developing country. International Journal of Finance and Accounting 2(4): 185-98.

Larojan, C., and J. S. Thevaruban. 2015. A study on market value added with economic value added and profitability performance of listed financial companies in Srilanka. International Journal of Economic and Business Review 3(4): 42-5.

Lavanya, E., and B. Ramchendra Reddy.2012. Analysis of financial performance of Iron and Steel industry with the help of market value added approach. International Journal of Research in Commerce and Management 3(10): 117-9.

Mara Ikbar, M., and A. Shintia Dewi. 2015. The analysis effect of economic value added and market value added on share price of sub-sector companies of property incorporated in LQ 45 Indonsia Stock Exchange. International Journal of Science & Research 4(4): 2310-4.

Nakhasi, H., and N. I. N. Bnti Hamid. 2013.Analyzing the relationship between economic valued added (EVA) and accounting variables with share market value in Tehran stock exchange. Middle-East Journal of Scientific Research 16(11): 1589-98.

Nakhasi, H., and N. I. N. Bnti Hamid. 2013.The relationship between economic value added, return on assets, and return on equity with market value added in Tehran stock Exchange. Proceeding of Global Business and Finance Research Conference: 1-9.

Nirmal Kumar, K. 2014. Analysis of financial performance using market value added approach. Indian Journal of Research 3(1): 141-6.

Pourali, M. R., and Z. Roza. 2013.The relationship between market value added with refined economic value added and performance accounting criteria in the firms listed in the Tehran stock exchange. InternationalResearch Journal of Applied and Basic Science 4(6): 1636-45.

Rajesh, M., N. R. V. Ramana Reddy and T. Narayana Reddy. 2012.Empirical study on economic value added and market value added approach. International Journal of Marketing, Financial Services & Management Research 1(3): 87-97.

Ramachandra, B. 2016. Analysis of financial performance using market value added approach. Indian Journal of Applied Research 5(1): 496-8.

Uppili Srinivasan, G., K. Veerakumar, and S. Balachandran. 2012. Economic value added and market value added of private steel companies. International Journal of Social Science & Management 2(8): 1-7.

Vijaykumar, A. 2012. Determinates of market value added: Some empirical evidence from Indian automobiles industry. Indian Journal of Applied Research 1(4): 16-20.

Wibowo, P., and R. G. Berasategui. 2008.The relationship between economic value added and market value added with reported earnings: An empirical research of Indonesia stock exchange. Journal of Applied Finance and Accounting 1(1): 60-72.