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A COMPARATIVE ANALYSIS OF EVA & MVA APPROACH: WITH SPECIAL REFERENCE TO AUTOMOBILE INDUSTRY

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Abstract *The development of the capital market in India, both in strength and size along with the inflamed consciousness among the shareholders, have compelled the companies to consistently enhance the performance. There has been a swelling concern about the performance measures based on traditional accounting information such as Return on Equity (ROE), Earning per Share (EPS), Net Operating Profit after Taxes (NOPAT) and Return on Investment (ROI) etc. These measures, even though widely used, fall short to incarcerate the shareholders' value creation/destruction as anoutcome of management actions. EVA and MVA are the two different approaches to measure the existing financial status and predicting the future performance of the company. The present study is an attempt to determine the financial performance of chosen automobile companies in India and position them based on their mean EVA and MVA for the tenure of 5 years from 2006 to 2010.*

Keyword: *ROE, EPS, NOPAT, ROI, EVA and MVA*

INTRODUCTION

The pragmatic studies emphasize that there is no single accounting measure which elucidates the inconsistency in the shareholders wealth (Chen & Dodd, 1997;Rogerson, 1997). Any financial measures used in evaluating firm's performance must be highly allied with shareholder's wealth and on the other hand should not be subjected to the inbuilt arbitrariness.

Nowadays, EVA (Economic Value Added) and MVA (Market Value Added) have become important tools for measuring management performance across the world. There is a variety of views about the dominance of EVA and MVA over conventional performance measurement tools. The application of the concept of EVA and MVA and their realistic appliance as a management control system for performance assessment in organisations has been highlighted because of its uniformity with the organisational goal of shareholder's value creation.

The EVA of the company is just an estimate of the incremental return that the investment earnsin excess of the market rate of return. In easy terms, it can be affirmed that EVA measures the profitability of cost of capital. EVA can be taken as the net operating profit minus an appropriate charge for the opportunity cost of the capital invested in an enterprise. As such, EVA is an approximation of factual economic profit or the sum by which earnings surpass or fall short of the required minimum rate of return that shareholder and lenders could get by investing in other securities of similar risk.

MVA is the variation between the market value of invested capital and book value of invested capital. MVA is the absolute rupee spread between a company's market value and its capital. It signifies the stock market's estimation as of a particular time of the net present value of all a company's past and predictable capital project. Therefore, maximizing MVA should be the key objective for any company that is apprehensive about its shareholders' welfare.

Unlike conventional profitability measures, both MVA and EVA measures take into account the cost of equity capital. MVA is most suitable for investor-owned healthcare organisations and EVA is the preeminent measure for not-for-profit organisations.

As financial managers become more familiar with MVA and EVA and appreciate their potential, these two measures possibly will become more extensively acknowledged accounting tools for evaluating the financial performance of investor-owned and not-for-profit organisations.

Both MVA and EVA are pertinent to investor-owned organisations; however, EVA in addition is asuitable measure for not-for-profit organisations. MVA evaluate the effect of managerial actions on shareholder wealth from an organisation's commencement, while EVA evaluates managerial efficacy in a given year.

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An important aim of any investor-owned organisation is to maximize shareholder wealth. And, though the elementary goal of shareholder wealth maximisation is widely accepted, financial managers must identify that maximizing shareholder wealth is not the identical thing as maximizing the organisation's entire market value. An organisation's overall market value can be improved by elevating and investing as much capital as possible, which adds to the size of the organisation and, hence, often paybacks managers. Nevertheless, this approach seldom is in the best interests of shareholders because it disregards the fact that shareholders have opportunity costs, and must earn a rational rate of return on their investments.

A company's EVA is a stimulant that fires up its MVA. Thus, EVA is the internal measure of corporate performance and MVA is the external measure of company's performance. The affirmation of the majority of the experimental studies on the topic of EVA puts forward that there is a positive association between EVA and shareholder value creation, measured by MVA. On the other hand, when the explaining power of EVA in opposition to traditional performance measured as regards equity market value or returns is measured, the results are mixed.

Stewart G. (1991) scrutinized the association between EVA and MVA of US companies and established a stronger correlation between EVA and MVA. Kramer & Pushner (1997) deliberated the strength of relationship between EVA and MVA. They established that MVA and NOPAT were positive on average but the average EVA over the period was negative. EVA distinct other earnings measures is systematically linked to the market value and it is powerful tool for understanding the investor expectations (O'Byrne, 1996; Finegan, 1991). Ghanbari & More (2007)investigated the relationship between EVA and MVA of automobile industry in India and outcome designated that there are strong facts to support Stern- Stewart's claim.

There are some studies which uphold that traditional measures have better correlation with MVA. Fernandez (2001)observed the correlation between EVA and MVA of 582 American companies for the period 1983-97. It was shown that for 296 firms in the sample, the changes in the NOPAT had higher correlation with changes in MVA than the EVA, while for 210 sample firms the correlation between EVA and MVA was negative. DeWet (2005) carry outa study on EVA–MVA relationship of 89 Industrial firms of South Africa and established that EVA did not illustrate the strongest correlation with MVA.

Some literature estimated EVA as a management tool from the point of view of the accounting measurement. O'Hanlon & Peasnell (1998) systematically discussed EVA as a value-based performance pointer, Stern Stewart Co intricate adjustments, EVA benchmarks, and EVA-based bonuses. Bromwich & Walker (1998) supplemented to the theoretical discussion by contemplating the EVA debate all the way from Hicksian income concepts. Pfeiffer (2000) measured mathematically EVA vs. discounted cash flow methods for resolving internal agency problems in decentralized decision-making. In addition to the theoretical discussion, indulgence is needed about the numerical behaviour of the EVA under diverse conditions and about EVA's numerical relationship to the accounting measures like Return on Investments (ROI), Return on Equity (ROE) and to economic profitability measures like the Internal Rate of Return (IRR).

REVIEW OF LITERATURE

Lehn & Makhija (1997) explored the scale of correlation between different performance measures and stock market returns. The results specified that EVA is the most extremely correlated measure with stock returns. Various studies are also demeanor on Incremental information content tests of EVA and present evidences that it append significant expounding power to EPS in explaining stock returns. Peterson & Peterson (1996) scrutinized conventional and value-added measures of performance and their relationship with stock returns. Their result states that conventional measures are not empirically less related to stock returns than return on value added measures.

Grant (1996) carriesout a survey to inspect the relationship between EVA and Firm Value. Outcome suggests that EVA significantly impacts the firm value.

Biddle *et al*. (1998) accomplished in their study that firms that approve residual income based incentives plans display increased income. This study ropes that managers do react to residual income based plans. Therefore, EVA and residual income could prove effectual in motivating managers for shareholder wealth creation but whether execution of EVA and residual income based incentives have been truly effectual stay an open question for future research.

Since the introduction of EVA and MVA, plentiful research sources have accomplished that EVA has a stronger correlation with MVA (or shareholder returns) than the other accounting measures tested. Those in support of EVA include (O'Byrne, 1996; Uyemura, Kantor, & Petit, 1996; Grant, 1996). Ehrbar & Stewart III (1999), Krafft & Ravix (2005) and Sharma & Kumar (2010) provided anecdotal evidence of the widespread implementation of EVA and MVA by top companies in the USA as well as Europe, Latin America, Asia, and even New Zealand and South Africa. However, following the initial strong support for EVA, some research results emerge, representing that EVA does not in fact have better explanatory power in relation to MVA, compared to the other customary accounting measures. This category of researchers includes (Biddle, Bowen, & Wallace, Evidence on EVA, 1999), and (Kyriazis & Anastassis, 2007).

Vijayakumar (2010), in his study chains the hypothesis of Stern and Stewart's that MVA of firm was principally positively associated with EVA in all the selected sectors of Indian Automobile industry. It come out that the concept of EVA, as an promising concept of financial management is fairly clear in the minds of almost all these researches whose studies have been reviewed above. In a fast varying business environment, the investor-friendly financial performance measures may be the need of hour.

Banerjee (2000) has done an empirical research to find the dominance of EVA over other customary financial performance measures. ROI and EVA have been calculated for sample companies and a contrast of both showing the superiority of EVA over ROI.

DeWet (2005) scrutinizes the results of companies listed on the JSE Securities Exchange South Africa; the result does not support the supposed dominance of EVA. The results recommend stronger relationships between MVA and cash flow from operations. The study also establishes very small correlation between MVA and EPS, or between MVA and DPS, concluding that the reliability of share valuations based on earnings or dividends must be questioned.

Reddy & Rajesh (2008) deliberate the relationship between EVA, MVA and Dividend paid for the study periods of 6 years from 2002 to 2007 from the financial reports of Shilpa Medicare Ltd. The study establishes a strong positive correlation between the variables called as EVA, MVA and dividend paid. Pearson correlation analysis was applied to examine the relationship. The study accomplished that both EVA and MVA are two financial keys to create shareholders wealth and the true sign of a company's financial performance.

Stewart S. (1990) observed that EVA as a performance measure incarcerates the true economic profit of an organisation. EVA-based financial management and incentive compensation scheme confer manager's better-quality information and greater motivation to make decision that will create the utmost shareholder wealth in an organisation.

Luber (1996) established that a positive EVA over a period of time will also have angrowing MVA while negative EVA will bring downward MVA as the market loses confidence in the capability of a company to guarantee a handsome return on the invested capital.

Ali & Narges (2007) empirically appraised the movement of EVA of Indian Automobile Companies. The outcomespecified that there was a noteworthy increasing trend in EVA during the period of study and the firms in the automobile industry are moving towards the improvement of their firm's value.

Banerjee & Jain (1999) observed the relationship between shareholder wealth and certain financial variables. The study was demeanor with a sample of top 50 companies from Drugs and Pharmaceutical industry. This study accomplished that out of chosen independent variables, EVA has demonstrated to be the most illustrative variable and the capital productivity is a predictor of shareholder wealth.

Mangala, Deepa, & Joura (2002) explored the relationship between EVA and Market Value among various companies in India. The results of the analysis authenticate stern's hypothesis and accomplished that thecompany's current operational value was more significant in contributing to change in market value of share in Indian context.

Manorselvi & Vijay Kumar (2007) exposed that the customary measures of performance do not replicate the real value addition to shareholders wealth and EVA has to be explained shareholders value addition.

Vijay Kumar (2008) empirically indicated that Net Operating Profit After Tax (NOPAT) and Return on Net Worth (RONW) are the most important variable with MVA followed by EVA and EPS.

Ethiraj (1998) elucidates that in Indian market numerous companies are using capital unproductively and thus destroying value. The instrument to determine capital efficacy and economic value is economic value added. Taking EVA as a tool of financial performance HLL and ITC stand at the top of the list. Also important is the relation between EVA and total operating capital employed. This would show how much value the company has created in relation to the assets it has installed. It is argued that stock price move up as a company assumes EVA as an internal performance criterion.

Thenmozhie (1999) elucidates the concept of EVA and evaluate it with some other customary measure of corporate performance viz. ROI, EPS, RONW, ROE, ROCE, etc. The researcher used the coefficient of determination to display that the conventional measures do not replicate the real value of the shareholders, and thus EVA has to be taken into account to measure the value of shareholders' wealth. He has also explained the concept of EVA in the Indian scenario with specific reference to companies like NIIT, Hindustan Lever and ITC. The researcher has referred to some of the deficiencies of the concept of EVA but sustain that EVA is a superior measure of corporate performance as compared to the traditional measures.

Rahnemaee (2006) clarified a relationship between EVA, MVA, and financial variables, however, the relationship between EVA and financial variables is supplementary than MVA. This study explored the relationship between EVA and ROA. The main reason is to elucidate the issue as to whether ROA can surrogate EVA or not

OBJECTIVES OF THE STUDY

- To estimate the performance of chosen Automobile companies in India through value added measures like Economics value added (EVA) and Market value added (MVA).

RESEARCH METHODOLOGY

The research is exploratory in nature.Sample Automobile companies for the study were selected from listed companies in Bombay Stock Exchange. The study considered two big shots in automobile sector as a sample companies for comparative analysis with the 5 years of historical data from 2006 to 2010. Two sample companies, Tata Motors Ltd. And Maruti Suzuki India Ltd. was selected with the observation of continuous growth being reported since 2006.

Tools for Data Analysis

EVA	= NOPAT-COCE
where NOPOT	= Net operating profit after tax
COCE	= $W_1.K_d + W_2.Ke$
W_1, W_2	= Weights assigned to individual
Sources in the structure	
K_d	= I (1-t)
K_d	= Cost of debt
I	= Interest rate
t	= tax rate
K_e	=
K_e	= Cost of Equity
Po	= Price of share
g	= growth in a share
g	= Ke X Retention Ratio (b)
b	=
MVA	= (Closing Share Price Number of Outstanding Share) – Net Worth

RESULTS & DISCUSSIONS

The collected financial data 2006 to 2010 were analyzed with value added measures EVA and MVA and the results were depicted in Tables 1 along with relevant statistics Mean, Variance, Standard Deviation (SD), and Skewness, Kurtosis and Co-efficient of Variation (CV) (refer table 2 and 3).

Analysis of Economic Value Added (EVA)

Economic Value Added (EVA) is based on an extremely easy conception; if any investment realizes a return that is additional to what investor need then value has been supplemented to the investment. The extent of the supplemented value is the difference between what is realized and what is required. Table 1 demonstrates the Economic Value Added (EVA) of selected companies of the study from the year 2006 to 2010.

Maruti Suzuki India Ltd

Maruti Suzuki India Ltd. has positive EVA during the study period. In the year 2010 EVA of Maruti Suzuki India Ltd is very high (Rs.2510.89) and in 2009 its EVA is comparatively low (Rs.1246.46). And from 2006 to 2008 EVA is continuously increasing (refer Table 1). The positive EVA reflects that the performance is positive in terms of Economic Value Added. The calculated mean EVA is Rs. 1651. 592 crores which indicates that the company performance is satisfactory and Co-efficient of Variation (CV) is 33% which shows consistent EVA of company (refer Table 1). The values of range demonstrate the elevated volatility in EVA and that of standard deviation and variance demonstrate the variation scale from central tendency and dispersion. Kurtosis and skewness have been calculated to illustrate about the distribution (Symmetric/ Asymmetric). Kurtosis measures of the "peakedness" or the "flatness" of a distribution. Kurtosis values close to zero (o) specify a shape close to normal. A positive value for the kurtosis point toward a distribution more peaked than normal. Negative kurtosis designates a shape flatter than normal. An extreme negative kurtosis (e.g. <–5.0) specify a distribution where more of the values are in the tails of the distribution around the mean. A kurtosis value between -1.0 and +1.0 is considered excellent for the majority psychometric purposes and a value between -2.0 and +2.0 in many cases is also satisfactory. Skewness measures to what degree a distribution of values diverge from symmetry around the mean. A value of zero symbolizes a symmetric or consistently balanced distribution. A positive skewness signifies more number of smaller values. A negative skewness signifies more number of larger values. A skewness value between -1 and +1 is considered excellent and a value between -2 and +2 is in many cases is good enough. The calculated Skewness and Kurtosis are positive. Positive values for the skewness specify data that are skewed right. Positive kurtosis is a sign of reflecting that the observations cluster more and with longer tails (refer Table 2). Overall the company performance is reasonable with positive EVA in the study period.

Tata Motors Ltd

Tata Motor Ltd has positive EVA during the study period. In the year 2006 EVA is very low (Rs. 616.23) and in 2010 EVA of Tata Motor Ltd was very high (Rs.3214.69) and from 2006 to 2008 EVA is increasing continuous (refer Table 1). The positive EVA reflects that the performance is positive in terms of Economic Value Added. The calculated mean EVA is Rs. 2195.378 crores which indicates that the company performance is satisfactory and Co-efficient of Variation (CV) is 29% which shows consistent EVA of company. The values of range show the high volatility in EVA and that of standard deviation and variance show the variation scale from central tendency and dispersion. The calculated Skewness and Kurtosis are positive (refer Table 2). Positive values for the skewness indicate data that are skewed right. Positive kurtosis indicates reflecting that the observations cluster more and with longer tails. Overall the company's performance is satisfactory with positive EVA in the study period. Overall company performance is satisfactory.

Analysis of Market Value Added (MVA)

Table 1 shows Market Value Added (MVA) of selected companies of the study from the year 2006 to 2010.

Maruti Suzuki India Ltd

Maruti Suzuki India Ltd. has positive MVA during the study period. In the year 2006 MVA of Maruti Suzuki India Ltd was very high (Rs. 32902.50) and in 2010 its MVA was very low (Rs. 26482.90). MVA was decreasing continuous from 2006 to 2010. The positive MVA reflects that the performance is positive in terms of Economic Value Added (refer Table 1). The calculated mean MVA is Rs. 29855.62 crores indicating that the company performance is satisfactory and Co-efficient of Variation (CV) is 8% which shows consistent EVA of company. The value of range demonstrates high volatility in EVA and that of standard deviation and variance illustrates the variation scale from central tendency and dispersion. The calculated Skewness and Kurtosis are negative. Skewnss (-0.18004) indicates that the skewed left and Kurtosis (-0.42407) display a shape flatter than normal (refer Table 3).

Tata Motor Ltd

Tata Motor Ltd. has negative MVA (Rs.-45575.60) in the year 2009, while in the remaining years of the study the MVA is positive. It is high (Rs.52226.30) in the year 2006. The calculated mean MVA is Rs. 30148.1 crores (refer Table 1) which indicates that the company performance is satisfactory and Co-efficient of Variation (CV) is 141% which shows consistent EVA of company. The value of range demonstrates high volatility in EVA and that of standard deviation and variance explain the variation scale from central tendency and dispersion. The calculated Skewness is and Kurtosis are positive. Negative Skewness (-2.19806) indicate that the skewed left and positive Kurtosis (4.855953) indicate "peaked" distribution (refer Table 3).

Table 1: EVA and MVA (Amount Rs. In Crores)

YEAR	Maruti Suzuki India Ltd.		Tata motor Motors Ltd.	
	EVA	MVA	EVA	MVA
2006	1142.32	32902.50	616.23	52226.30
2007	1582.77	31489.90	2093.89	50957.10
2008	1775.52	29420.00	2298.20	50057.90
2009	1246.46	28982.80	1753.88	-45575.60
2010	2510.89	26482.90	3214.69	43074.80

Table 2: Statistical Data of EVA

Particular	Company	
	Maruti Suzuki India Ltd.	Tata Motors Ltd.
MEAN	1651.592	2195.378
VARIANCE	295494.4	397550.5
S.D.	543.594	630.5161
CV (%)	33	29
SKEWNESS	1.134857	1.294561
KURTOSIS	1.157566	1.729959
RANGE	1368.57	1598.46
MAX.	2510.89	3214.69
MIN.	1142.32	1616.23

Table3: Statistical Data of MVA

Particular	Company	
	Maruti Suzuki India Ltd	Tata Motors Ltd.
MEAN	29855.62	30148.1
VARIANCE	6070292	1.8E+0.9
S.D.	2463.796	42479.52
CV (%)	8	141
SKEWNESS	-0.18004	-2.19806
KURTOSIS	-0.42407	4.855953
RANGE	6419.6	97801.9
MAX.	32902.5	52226.3
MIN.	26482.9	-45575.6

CONCLUSION

From the analysis made on two selected companies in India using contemporary value based measures such as Economic Value Added (EVA) and Market Value Added (MVA), it is clearly observed that EVA of Maruti Suzuki India Ltd. and Tata Motor Ltd. is satisfactory with consistent returns. The Mean EVA which indicates that the company performance is satisfactory and the EVA of the companies is consistent as per the Co-efficient of Variation (CV). The values of range demonstrate the high volatility in EVA and that of standard deviation and variance illustrate the variation scale from central tendency and dispersion. MVA of both companies are showing satisfactory performance with consistent returns.

Hence, it is observed that the EVA and MVA of the study show the same results about the performances of the companies. In two modern measures, both companies are having acceptable performance with steady returns to shareholders. EVA and MVA are having qualified significance to evaluate the performance of a company.

Implications of the Study

The research will be useful to the companies in evaluating their performance. The application of EVA as a performance tool is not like traditional profitability measures. It facilitates the management and also other employees to understand the cost of equity capital. At least in big public companies, which do not have a strong means of raising funds, shareholders are frequently been envision as a free source of funds. Correspondingly, business unit managers time and again seem to think that they have the right to invest all the retained earnings that their business unit has collected even though the group would have better investment opportunities elsewhere. EVA might change the approach in this sense because it call attention to the requirement to earn adequate return on all capital employed.

Limitations of Our Study and Scope for Further Research

At the same time as this study formed some constructive experiential facts about EVA which should be of concern to both academics and practitioners. It is, however, significant to identify the limitations of the study. One can observe and contrast EVA and other profitability measures in terms of their relationship with stock returns. This is the only one way to appraise the usefulness of a performance measure. Some other criteria may comprise whether EVA provides an improved measure of managerial activity and whether EVA facilitate shareholders to put into practice more efficient contracts with managers. Even within the capital market framework, a profitability measure may have some other uses such as in the prediction of stocks´ systematic risk, corporate bankruptcy, and etc. Future studies may discover these other aspects.

One of the major precincts of the study is that the research is based on five years data. Therefore the results of the study can be questioned. Another limitation is the non-availability of information regarding the accounting adjustment done by while arriving at EVA and NOPAT. Such lack of information often may influence final understanding of the adjusted profits. Moreover, the study undertakes cross-sectional analysis, so time series study can be undertaken for understanding the relationship between EVA and MVA. There is scope for studies to scrutinize the components of the EVA (Biddle *et al.*, 1997) of the Indian companies and their impact on MVA. Similarly, one can broaden the study to observe the industry wise relationship.

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