
Financial Evaluation of Firms Using Economic Value Added as a Performance Measure – A Comparative Study

Balachandar D,

Alumnus, MFM Programme, Department of Management and Commerce,
Sri Sathya Sai Institute of Higher Learning, Bengaluru

Dr. N.Sivakumar,

Associate Professor, Department of Management and Commerce
Sri Sathya Sai Institute of Higher Learning, Bengaluru

Abstract

If business firms have to be viewed as economic entities, then their returns too must be measured in economic terms. Traditional financial statements and performance measures do not represent the proper value created by a firm. Economic Value Added (EVA) is a measure that represents the true value added by a firm by taking into account the impact of cost of capital on earnings.

Even though EVA is a powerful measure, there are no studies to understand whether firms which have adopted EVA perform better than similar firms which have not adopted EVA in the Indian context. Using 10 years financial data of a sample of 42 firms (21 EVA and non-EVA firms each), the current study is a comparative analysis of the financial performance of EVA and non-EVA firms.

The results of the study show that EVA firms perform significantly better than non-EVA firms on certain financial parameters on a case by case basis. However, on a consolidated basis, EVA firms do not perform significantly better than non-EVA firms especially in terms of profitability. The paper thus concludes that EVA is not seen as a serious driver of profitability in the Indian context.

Keywords: Economic value added; Financial performance; Du-Pont analysis

1. Introduction:

Contemporary economic conditions are very demanding on business firms. While investors are concerned about the earnings of the firm, accounting earnings alone do not depict the true value created by them. If business organizations are to be viewed as economic entities, then earnings too should be measured in economic terms. By ignoring cost of capital, accounting profits reveal only part of the value created by firms.

The search for an ideal performance measure – a measure that would take into account costs of all sources of capital and hence capture the correct value generated led to the formulation of “Economic Value Added” (EVA) as a performance measure. Peter Drucker, the renowned management expert stated in this regard, “EVA is based upon something we have known for a long time: What we call profits, the money left to service equity, is usually not profit at all. Until a business returns a profit that is greater than its cost of capital, it operates at a loss. Never mind that it pays taxes as if it had a genuine profit. The enterprise still returns less to the economy than it devours in

resources. Until then it does not create wealth; it destroys it” (Drucker, 2006).

The US-based consulting firm Stern Stewart and Company originated the concept of EVA. Many renowned companies around the world like Coca Cola Co., Briggs and Stratton, Quaker Oats Co. have adopted EVA. In India, companies like Godrej Consumer Products Limited, Tata Consultancy Services, and Marico have used EVA as a performance measure. Several reputed firms including Infosys, Piramal Health, Hero Motors report their EVA as a part of their investor relations.

2. The Calculation of EVA:

EVA is calculated using the following formula:

$$\text{EVA} = \text{Net Operating Profit after Tax (NOPAT)} - (\text{Cost of Capital} * \text{Invested Capital})$$

Where,

$$\text{NOPAT} = \text{Profit after Tax} + \text{Post-tax Interest}$$

Invested capital = Book value of capital employed in the business

Cost of Capital = Weighted Average Cost of Capital on the date of Balance Sheet

Several adjustments have been suggested to the calculation of EVA and Stewart lists as many as 164 adjustments depending on the industry to which the firm belongs to arrive at the EVA. The primary objective of the adjustments is to produce an EVA figure that is closer to cash flows, and therefore less subject to the distortions of accrual accounting (Young, 1999). Some of these adjustments include:

- Bringing back investments in intangibles that are often written-off in accounting
- Writing back of amortized goodwill
- Bringing off-Balance Sheet items into consideration
- Correcting the biases arising due to depreciation
- Adjusting for Last In First Out (LIFO) reserves
- Provisioning for warranties and debts
- Adjusting for deferred taxes.

Though the number of adjustments originally proposed by Stewart looks large, it has been observed that EVA adopters do not make more than fifteen adjustments while calculating EVA (Worthington and West, 2001).

3. Review of Literature

Several studies have highlighted the usage and benefits of EVA for performance management (Brewer, Chandra and Hock, 1999; Burkette and Hedley, 1997). Research on EVA has mainly spanned two areas – adoption and impact.

Mclaren (2003) analysed EVA through a study conducted on three firms in New Zealand who have adopted EVA. The study showed that, even after adoption, EVA had not replaced the traditional measures of performance nor had resolved the issues of conflicts of interest. Mittal, Sinha and Singh (2008) discussed the adoption of EVA in Godrej Consumer Products Limited. In the adoption process, the EVAs of the various businesses were measured and targets were set for three years. It was found that the employees had a lot of apprehensions about the new concept yet they implemented it successfully. Prusty (2013) looked at EVA from a corporate governance point of view and observed that adoption of EVA improved the quality of governance of the firm as it directed the firm's activities towards value creation.

Studies have been done to understand the financial impact of adopting EVA. While some studies show the positive financial impact of EVA, some point to the contrary. Bell (2004) analysed the financial impact of EVA adoption and observed that operating performance witnessed a strong improvement in the post-adoption period. Firms adopting EVA increased their annual RoA by 2.68 per cent when compared to firms not using EVA whose RoA declined by 0.58 per cent during the period of study. Firms adopting EVA outperformed the market by 25.66 per cent in three years post-adoption during which non-adopters underperformed by 21.10 per cent. Hamilton, Rahman and Lee (2009) observed the impact of EVA adoption on the performance of firms over a long-term horizon and found that EVA adopters showed a lesser negative performance compared to the non-adopting peer group. Firms using EVA further showed higher growth in their earnings and higher returns. Studies have been conducted to understand the impact of EVA on market value. Chen and Dodd (1997) compared the informational use of EVA with that operating income and showed that EVA is superior to accounting profit in explaining stock returns. Misra and Kanwal (2007) studied whether the stock prices reflect EVA. The study studied the relationship between EVA absolute, EVA percentage, EPS, RoNW, RoCE, RoTA and NOPAT and the dependent variable MVA. The results showed that EVA percentage was the most significant determinant of MVA, better than the traditional measures of performance. Nagar (2007) attempted to find the relationship of RoNW and EVA on MVA and found that while RoNW explains about 35 per cents of change in MVA and EVA explains about 29 per cent of the change. Other measures like EPS, DPS and cash flow from operations were found to have an insignificant relationship with MVA.

However, there are several studies which show that EVA usage has no significant financial impact. Tortella and Brusco (2000) studied the reaction of the market to the implementation of EVA. The study found that the EVA adoption does not provide significant abnormal returns – that is, the market does not react to the news of adoption. Biddle, Bowen and Wallace (1997) tested whether EVA is more correlated to stock returns than earnings computed in the conventional manner. The results showed that conventional earnings are more associated with market returns (r^2 of 12.8 per cent) than residual income (r^2 of 7.3 per cent) and EVA (r^2 of 2.8 per cent). The test suggested that EVA adds only a marginal informational utility over and above conventional earnings. Eljelly and Alghurair (2001) studied the relationship between the various performance measures and shareholder wealth. The performance measures used were EPS, ROE, and EVA. The results indicated that MVA and stock returns are correlated with the traditional measures and not with EVA. Among the traditional measures, EPS is observed to be the strongest in terms of its relationship with stock returns and MVA.

Finally there are research studies of adoption of EVA on individual performance and compensation. Riceman, Cahan and Lal (2002) studied the impact of EVA on performance of individual managers. The findings showed that managers under the EVA bonus schemes perform better than managers under traditional bonus plans. The study observed that the better performance resulted from a consistent evaluation and reward mechanism. Fatemi, Desai and Katz (2003) studied the relationship between executive compensation and EVA and MVA. The results showed a significant relationship between change in MVA and executive compensation. However, the relationships between compensation and RoE and EVA were found to be weak.

An analysis of the above studies shows that a study of the financial impact of EVA adoption on Indian firms through a comparison of similar firms not adopting EVA is yet to be done. The current study is an attempt to fill this research gap.

4. Method of study:

Objective: The objective of the study is to compare the financial performance of firms using EVA with similar firms not using EVA and understand whether EVA firms perform better than non-EVA firms.

Hypotheses: The null hypothesis of the study is that there is no significant difference in the financial performance of firms using EVA and those not using EVA. Based on the Du-Pont approach to financial analysis, this would contain the following sub-hypotheses:

- Raw material costs as a percentage of sales, of firms using EVA is not significantly different from firms not using EVA.
- Power and fuel costs as a percentage of sales of firms using EVA is not significantly different from firms not using EVA.
- Employee costs as a percentage of sales of firms using EVA is not significantly different from firms not using EVA.

- Other manufacturing expenses as a percentage of sales of firms using EVA is not significantly different from firms not using EVA.
- Selling and administration expenses as a percentage of sales of firms using EVA is not significantly different from firms not using EVA.
- Miscellaneous expenses as a percentage of sales of firms using EVA is not significantly different from firms not using EVA.
- Current assets turnover ratio of firms using EVA is not significantly different from firms not using EVA.
- Fixed assets turnover ratio of firms using EVA is not significantly different from firms not using EVA.
- Inventory turnover ratio of firms using EVA is not significantly different from firms not using EVA.
- Debtors turnover ratio of firms using EVA is not significantly different from firms not using EVA.
- Net profit margin of firms using EVA is not significantly different from firms not using EVA.
- Return on investment of firms using EVA is not significantly different from firms not using EVA.
- Return on equity of firms using EVA is not significantly different from firms not using EVA.

Sample of study: An extensive review of financial statements, news reports and journals showed that 28 companies in India have been publishing their EVA figures for a long period of time. Of these, 21 firms were selected for a comparative study on the basis of availability of a similar firm not using EVA. The list of firms using EVA along with their comparison firms is given in Table 1.

Table-1: List of firms using EVA and the chosen comparison firm

Data Collection: Data of financial statements of the firms analysed were collected from the Capitaline Database for the period 2004-05 to 2013-14.

Data analysis methods: Two methods of analysis were adopted for the study as follows:

- *Case by case comparative analysis:* Comparative Du-Pont analysis of the financial statements was performed for the selected firms using EVA and the comparison firms for a case by case comparison. T-tests were performed for each of the financial variables to analyse whether the EVA firm performed better than the non-EVA firm.
- *Consolidated analysis:* The mean values of the financial parameters of all EVA firms were

consolidated and compared against the comparison firms using the Du-Pont framework. T-tests were employed to study whether EVA firms as a whole performed better than non-EVA firms.

5. Results of the study:

Case by case comparative analysis: Table 2 gives the aggregate results of the case by case comparative analysis.

Table-2 : Results of case by case comparative analysis

Particulars	No of cases in which EVA firms perform significantly better	%
Expenses (% of sales):		
Raw materials	5	24
Power and fuel	7	33
Employee costs	6	29
Other manufacturing expenses	6	29
Selling and administration expenses	7	33
Miscellaneous expenses	3	14
Turnover ratios:		
Current Assets Turnover	6	29
Fixed Assets Turnover	11	52
Inventory Turnover	6	29
Debtors Turnover	7	33
Profitability:		
Net profit margin	7	33
RoI	5	24
RoE	4	19

The above table shows that in relation to fixed assets turnover, EVA firms performed significantly better than non-EVA firms in majority cases. Other financial parameters in which EVA firms showed significantly better performance in many cases are power and fuel costs,

selling and administration expenses, debtors turnover and net profit margin.

Consolidated analysis: Table 3 provides the results of the consolidated analysis of the financial performance of EVA firms in comparison to non-EVA firms as a whole.

Table-3: Results of Comparative analysis of financial performance

Particulars	Mean - EVA firms	Mean – NonEVA firms	p value
Expenses: (% of sales)			
Raw materials	43.10%	44.43%	0.02
Power and fuel	6.78%	4.80%	0.95
Employee costs	20.06%	20.29%	0.45
Other manufacturing expenses	3.82%	3.32%	0.92
Selling and administration expenses	15.56%	14.75%	0.80
Miscellaneous expenses	4.51%	3.34%	0.93
Turnover ratios:			
Current assets turnover	2.47	1.74	0.00
Fixed assets turnover	6.18	4.99	0.11
Inventory turnover	5.80	6.63	0.96
Debtors turnover	13.99	11.52	0.16
Profitability:			
Net profit margin	14.13%	13.49%	0.78
RoI	16.50%	16.10%	0.48
RoE	18.89%	20.72%	0.06

* The highlighted cells represent values which are significant at 95% confidence level

An analysis of the above consolidated analysis shows that current assets turnover ratio of firms using EVA are significantly greater than those of firms not using EVA. The analysis also shows that the raw material costs are significantly lower for EVA firms when compared with non-EVA firms. However, there are no significant differences between the profitability of firms using EVA as compared to non-EVA firms as measured by net profit margin, RoI and RoE. Therefore only 2 out of the 13 sub-hypotheses stated earlier are not accepted.

6. Conclusions

Based on the results presented in the previous section, the following are the conclusions and implications of the study:

1. EVA firms perform better than non-EVA firms on some important financial parameters on a case by case basis. However, on a consolidated basis EVA firms do not perform significantly better than non-EVA firms on profitability parameters like net profit margin, RoI and RoE.
2. The study has shown that, in the Indian context, EVA adoption is not seen as a serious driver of profitability and value. Corporates should take to EVA adoption in a serious manner so that parameters like RoI and RoE can improve significantly as compared to non-EVA adopters.
3. Currently EVA disclosure is optional. Legal provisions can be made to make the disclosure of EVA mandatory.
4. One of the reasons of non-adoption of EVA is the lack of standardization. It would be useful to make the computation of EVA more simple and standardized. This would bring in uniformity and comparability.

Dedication: The authors humbly dedicate the paper to Bhagawan Sri Sathya Sai Baba, the Revered Founder Chancellor of Sri Sathya Sai Institute of Higher Learning, Prasanthinilayam.

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