

A STUDY ON THE RELATIONSHIP BETWEEN ECONOMIC VALUE ADDED AND PROFITABILITY MEASURES WITH REFERENCE TO HINDUSTAN ORGANIC CHEMICALS LIMITED, KOCHI.

Mary Antony

Asst. Professor, Rajagiri College of Management and Applied Sciences, Rajagiri Valley, Ernakulum, Kerala

Bridin Rocha

Asst. Professor, Rajagiri College of Management and Applied Sciences, Rajagiri Valley, Ernakulum, Kerala

Ashish C Pius

Asst. Professor, Rajagiri College of Management and Applied Sciences, Rajagiri Valley, Ernakulum, Kerala

Abstract

EVA is an estimate of a firm's true economic profit that differs from accounting profits in the following three ways. Firstly, EVA integrates operating efficiency and asset management into one measure that can be easily understood by operating personnel. Secondly, EVA is charged for capital at a rate that compensates investors for providing the capital needed for operations. Finally, EVA adjusts reported accounting results in order to eliminate distortions. EVA differs from traditional measures mainly by including the cost of equity.

Keywords: Economic Value Added(EVA), Profitability Measures

Introduction

Economic value added is a concept defined to measure the performance of a firm's management in creating value or wealth for the shareholders. It can be calculated using a simple formula where cost of capital is deducted from Net Operating Profit after Tax (NOPAT). This is also known as economic profit or residual profit. It also has various advantages and disadvantages of EVA as a performance metric.

Economic value added (EVA) is a theory developed and trademarked by Stern Steward and Co. According to this model of EVA, a firm should also deduct the cost of equity capital from the accounting profits to arrive at a value which is the actual wealth created for the investors. This is also known as economic profit or residual profit.

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Objectives

- To study the characteristics, uses and concept of Economic Value Added.
- To analyze the trend of the following profitability measures:

RESEARCH DESIGN

A research design is a systematic plan to study a scientific problem. Research design is the framework that has been created to seek answers to research questions.

Descriptive research design is used in this study to describe the characteristics of a population or phenomenon under study and is qualitative in nature.

SOURCES OF DATA COLLECTION

A researcher can collect his required information from two sources namely, primary data and secondary data.

Secondary data is used for this study. It includes the balance sheet and the Profit and Loss statements of Hindustan Organic Chemicals Limited, Kochi.

SAMPLING TECHNIQUE

The technique used in this study is convenience sampling technique.

STATISTICAL TOOLS FOR ANALYSIS

- Area charts
- <u>Trend analysis</u> –. Investors use this analysis tool to determine the financial position of the business. In a trend analysis, statements of the company are compared with each other for several years after converting them into percentage by taking the first year as the base year.
- <u>Correlation</u>- Correlation analysis is a measure of that relationship or association between two continuous numeric variables that indicates both the direction and degree to which they co-vary with one another from case to case, without implying that one is causing the other.

When $\gamma = 0$, there is no correlation between the variables

When $\gamma = -1$, there is negative perfect correlation

When $\gamma = 1$, there is perfect positive correlation

When $\gamma = 0.2$, there is very low positive correlation

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When $\gamma = 0.9$, there is high positive correlation

When $\gamma = 0.52$, there is moderate positive correlation

Theoretical Framework

EVA versus Profit based measures of performance

A successful performance measure evaluates how well an organization performs in relation to its objectives. Since the primary objective of commercial organizations is normally assumed to be the maximization of the wealth of its shareholders, it follows that performance measures should evaluate this.

In practice, many organizations use profit-based measures as the primary measure of their financial performance. Two problems relating to profit in this area are:

- Profit ignores the cost of equity capital. Companies only generate wealth when they generate a return in excess of the return required by providers of capital both equity and debt. In financial statements, the calculation of profit takes into account the cost of debt finance, but ignores the cost of equity finance.
- Profits calculated in accordance with accounting standards do not truly reflect the wealth that has been created, and are subject to manipulation by accountants.

Economic Value Added – or EVA – is a performance measurement system that aims to overcome these two weaknesses. EVA was developed by the US consulting firm Stern Stewart & Co, and it has gained widespread use among many well-known companies such as Siemens, Coca Cola and Herman Miller.

EVA is based on the residual income technique that has been used since the early 20th century. Residual income is a performance measure normally used for assessing the performance of divisions, in which a finance charge is deducted from the profits of the division. The finance charge is calculated as the net assets of the division, multiplied by an interest rate – normally the company's weighted average cost of capital.

EVA is used by over 300 successful companies like Coco-Cola, Quaker oats etc. Every company should make sure that business returns a profit that is greater than its cost of capital to operate at profit which is taken care of and monitored by Economic Value Added.

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Table showing the correlation between EVA and Sales

(Rs.in lakhs)

YEAR	EVA	SALES	X- X1	Y-Y1	(X-X1)^2	(Y-Y1)^2	(X-X1) (V-V1)
	(X)	(Y)	ΔΙ				(1-11)
2014-	7390	46530	2192	800	4804864	640000	1753600
2015							
2015-	1888	42796	-3309	-2934	1094981	69755904	9708606
2016							
2016-	1350	38033	-3847	-7697	14799409	20142144	29610359
2017							
2017-	12901	58121	7704	12391	59351616	224640144	95460264
2018							
2018-	2455	43170	2742	2560	7518564	446899600	7019520
2019							
TOTAL	25984	228650	0	0	97423934	22858264	143552349

 $\gamma = \underline{\sum(X-X1)(Y-Y1)} \\ \sqrt{(X-X1)^2} * \sqrt{(Y-Y1)^2}$

 $\gamma = 143552349$

 $\sqrt{97423934} * \sqrt{22858264}$

143552349

149229479

= 0.96

=

Interpretation: The correlation between EVA and Sales is positive and the

Coefficient of correlation is 0.96

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Table showing the correlation between EVA and Capital Employed

(Rs.in.lakhs)

YEAR	EVA	CAPITAL	Х-	Y-	(X-	(Y-	(X-X1) *
		EMPLOYED(Y)	X1	Y1	X1)^2	Y1)^2	
	(X)						(Y-Y1)
2014-	7390	16210	2192	518	4804864	268324	1135456
2015							
2015-	1888	16141	-	448	1094981	200704	1482432
2016			3309				
2016-	1350	14520	-	-	14799409	1373584	4508684
2017			3847	1172			
2017-	12901	16286	7704	594	59351616	352836	4576176
2018							
2018-	2455	15304	-	-388	7518564	150544	1063896
2019			2742				
TOTAL	25984	78461	0	0	97423934	2345992	9801780

$$\gamma = \frac{\sum (X-X1)(Y-Y1)}{\sqrt{(X-X1)^2} * \sqrt{(Y-Y1)^2}}$$

 $\gamma = 9801780$

 $\sqrt{97423934} * \sqrt{2345992}$

9801780

15118035

= 0.64

=

Interpretation: The correlation between EVA and Capital employed is positive

and the coefficient of correlation is 0.64.

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Table showing the correlation between EVA and Net Worth

(Rs.in lakhs)

YEAR	EVA	NET	X-X1	Y-Y1	(X-	(Y-Y1)^2	(X-X1)
	(X)	WORTH(Y)			X1)^2		(Y-Y1)
2014	5200	(10.5.5	0100	0000	100.10.51	(50)5(0)	15004120
2014-	7390	61255	2192	-8209	4804864	6/38/681	-17994128
2015							
2015-	1888	63255	-	-6208	1094981	38539264	20542272
2016			3309				
2016-	1350	64730	-	-4734	14799409	22410756	18211698
2017			3847				
2017-	12901	77738	7704	8274	59351616	68459076	63742896
2018							
2018-	2455	80340	-	10877	7518564	118309129	-2982473
2019			2742				
TOTAL	25984	347318	0	0	97423934	315105906	54678004

 $\gamma = \underbrace{\sum (X-X1)(Y-Y1)}_{\sqrt{(X-X1)^2} * \sqrt{(Y-Y1)^2}}$

 $\gamma = 54678004$

=

 $\sqrt{97423934} * \sqrt{315105906}$ 54678004

175210932

0.31

Interpretation: The correlation between EVA and Net worth is limited but

=

positive and the Coefficient of correlation is 0.31.

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Table showing the correlation between EVA and Earnings Per Share

YEAR	EVA	EPS	X-X1	Y-Y1	(X-X1)^2	(Y- V1)^2	(X-X1)
	(X)	(Y)				11) 2	(Y-Y1)
2014- 2015	7390	22	2192	6	4804864	36	13152
2015- 2016	1888	6	-3309	-10	1094981	100	33090
2016- 2017	1350	4	-3847	-12	14799409	144	46164
2017- 2018	12901	39	7704	23	59351616	529	177192
2018- 2019	2455	9	-2742	-7	7518564	49	19194
TOTAL	25984	80	0	0	97423934	858	288792

 $\gamma = \sum (X-X1)(Y-Y1) \\ \sqrt{(X-X1)^2} * \sqrt{(Y-Y1)^2} \\ \gamma = 288792 \\ \sqrt{97423934} * \sqrt{873} \\ = 288792 \\ 291570 \\ = 0.99$

Interpretation: The correlation between EVA and Earnings per share is highly

Positive and the coefficient of correlation is 0.99

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FINDINGS

- The sales of the company generally showed a decreasing trend during the period of study
- The capital employed of the company is not showing much fluctuation and generally showed a decreasing trend during the period of study.
- The return on capital employed of the company showed a decreasing trend during the period of study
- The net worth of the company showed an increasing trend during the period of study
- The return on net worth of the company showed a decreasing trend during the period of study.
- The EPS of the company showed a decreasing trend during the period of study
- The correlation between EVA and Sales is positive and the coefficient of correlation is 0.74 i.e., as Sales decreases, EVA also decreases.
- The correlation between EVA and Capital employed is positive and the coefficient of correlation is 0.64 i.e., as Capital employed decreases, EVA also decreases.
- The correlation between EVA and Return on Capital Employed is positive and the coefficient of correlation is 0.99 i.e., as Return on Capital Employed decreases, EVA also decreases.
- The correlation between EVA and Net Worth is limited but positive and the coefficient of correlation is 0.31 i.e., as Net worth increases EVA decreases as the value of " γ " lies between 0 and 1 numerically.
- The correlation between EVA and Return on Net Worth is high and positive and the coefficient of correlation is 0.96 i.e., as Return on Net Worth increases, EVA decreases almost at the same rate as Return on Net Worth increases.
- The correlation between EVA and EPS is high and positive and the coefficient of correlation is 0.99 i.e., as EPS decreases, EVA also decreases almost at the same rate as that of EPS.



SUGGESTIONS

- The company can make better use of the capital provided by the shareholders to ensure returns to them as well as offer bonuses to managers who effectively utilize the capital for acquisition of profits.
- Profit maximization can be achieved through increasing the production capacity.
- Wealth maximization can be achieved by adopting EVA as a performance measurement tool.
- EVA for the company has been showing a decreasing trend throughout the period of study. There is a need for the company to maintain an increasing trend for EVA to create wealth for its shareholders.
- As the profitability measures have a positive correlation with the Economic Value Added, the company management can include EVA as a performance measure as well as a management evaluation tool in addition to the traditional accounting measures such as capital employed, return on capital employed etc.

CONCLUSION

The main purpose of any firm is to increase the value of the firm and EVA measures value creation for shareholders and investors. EVA as a strategy formulation and financial performance management tool helps corporations to make greater than their cost of capital.

Unlike conventional profitability measures, EVA helps the management and other employees to understand the cost of equity capital. The key feature of this concept is that for the first time any measure takes care of the opportunity cost of capital invested in business.

A positive correlation between EVA and the profitability measures implies that the creation of shareholder value can be used to reward managers accordingly. Thus, EVA is suitable for use as a measure of annual performance, related to executive pay, unlike traditional measures of performance.

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