The Relationship between EVA, MVA and Dividend Paid -An Empirical Study

**Dr. N.R.V. Ramana Reddy*
***M. Rajesh*

INTRODUCTION:

The traditional measures such as Earnings per Share (EPS), P / E ratio, Return on Capital Employed (ROCE) take into account only the loan interest as cost of capital, even though a company had a reasonable mix of debt and equity in the capital structure. EVA overcomes this limitation of accounting based measures of financial performance. Economic Value added (EVA) is a single value – based measure that is intended to evaluate business strategies, Capital projects and to maximize long – term share holder's wealth. It sets managerial performance target and links it to reward systems.

Unlike simple traditional budgeting, EVA focuses on ends and not means as it does not state how a manager can increase a company's value as long as the shareholders' wealth is maximized. This allows managers to have discretion and free range creativity, avoiding any potential dysfunctional short – term behavior. Rewards such as bonuses from the attainment of EVA target level are usually paid fully at the end of three years as the workers' performance is monitored and will only be rewarded when this target is maintained consistently, hence, leading to long – term shareholders wealth.

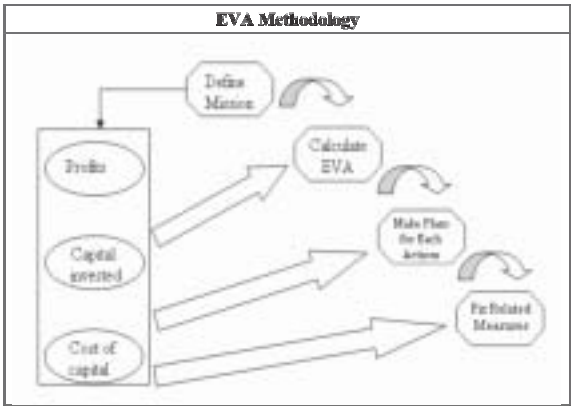
THE EVA AS A CONCEPT OF PROFITABILITY:

EVA is based on the concept that a successful firm should earn at least its cost of capital. Firms that earn higher returns than financing costs benefit shareholders and account for increased Shareholder value. In its simplest form, **EVA = Net Operating Profit after tax (NOPAT) – Cost of Capital** EVA is an attempt to measure the true economic profit. It measures whether the operating profits are sufficient enough to cover the cost of capital. EVA takes cost or equity as a notional cost along with the cost of debt. The residual profit after charging the overall cost or capital including the notional cost represents economic value added. From the Company's perspective, EVA is a useful tool because it focuses attention on the management of Capital as well as management of profit. If EVA is positive, then the firm has created value for the shareholders over the period and if the EVA is negative, it connotes the firm(s) is destroying shareholders' wealth even though it may be reporting a positive and growing EPS and ROCE. One of the tools for studying shareholder's value theory in EVA and the most important feature of this theory is it discourages payment of dividend to shareholder; because a higher dividend payment implies inefficiency on the part of management to deploy the dividend paying fund in a project which can earn more than WACC (Weighted Average Cost of Capital).

EVA METHODOLOGY

For the purpose of calculating EVA, information is required regarding the profits, capital, cost of capital, etc., which are based on the mission and objectives of an organization. The EVA, in turn, is linked with various plans formed for each particular action and defines the measures to be applied for achieving the value creation objective. The measures defined for each activity are: profit, cost, capital and cost of capital.

The study of the above mentioned EVA methodology helps in identifying the drivers for value creation in an organization.



* Director, School of Management Studies, Annamacharya Institute of Technology & Sciences, Rajampet, Kadapa, A.P. E-mail : aitsap@yahoo.co.in
** Assistant Professor, Annamacharya Institute of Technology & Sciences, Rajampet, Kadapa, Andhra Pradesh. E-mail : raaz.mba@gmail.com

The segregation of all the financial and non-financial components helps in identifying the drivers of value creation and value enhancement in a company.

Regular Vs. EVA Balance Sheet

Regular Balance Sheet

Cash	Short-term Debt
Receivables + Inventories + Prepaid Expenses	Short-term Interest Bearing Liabilities
	Long-term Debt
Fixed Assets	Other Long-term Liabilities
	Shareholder's Equity

The EVA Balance Sheet

Net Assets	Sources of Finance
Non-Operating Cash	Short- term Debt
Working Capital Requirements	Long-term Debt
Fixed Assets	Other Long-term Liabilities
	Shareholder's Equity

EVA Adopting Companies:

EVA is a financial measure based on accounting data and is historical in nature. Due to its historical nature managers can benefit in terms of rewards (David 1999). Most companies refer to stock price increase as an outcome of implementing EVA.

Name	Time frame	Use of EVA
IBM	1999	Conducted a study with Stern Stewart that indicated that outsourcing IT often led to short-term increases in EVA
AT &T Corp.	1994	Used EVA as the lead indicator of a performance measurement system that included "people value added" and "customer value added" IBM 1999
Herman Miller Inc.	1990	Tied EVA measure to senior managers' bonus and compensation system
The Coca – Cola Co.	1980	Focused business managers on increasing shareholder value

MARKET VALUE ADDED (MVA)

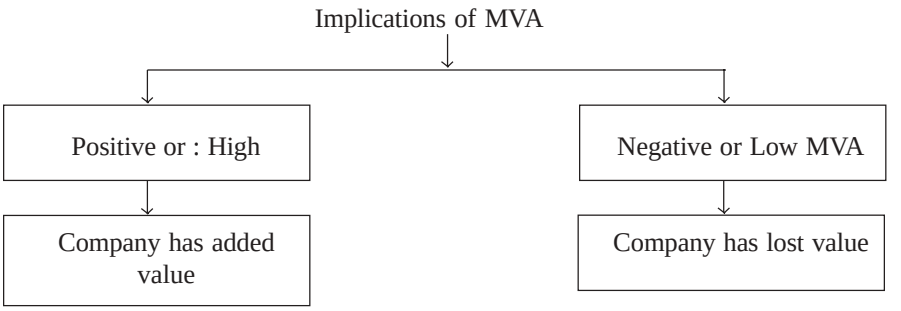
Stewart (1991) defined MVA as the excess of market value of capital (both debt and equity) over its book value. If MVA is positive, the company has created wealth for its shareholders. To determine the market value, equity is taken at the market price on the date the calculation is made, and debt is taken at book value. The total investment in the company, since day one, is then calculated as interest-bearing debt and equity including the retained earnings. Present market value is then compared with total investment. If the total investment is greater than the present market value, the company has created wealth.

IMPLICATIONS OF MVA

MVA of a company is an indicator of its performance. It is generally considered that higher MVA is favorable on part of the company's performance. Higher the MVA, better it is for the company.

A high MVA is an indicator that a company has created ample amount of wealth for its shareholders, whereas a low of negative MVA is an indicator of less investment value as compared with the capital contributed by the investors. In other words, low or negative MVA indicates that a company's wealth is destroyed. It can be depicted as below:

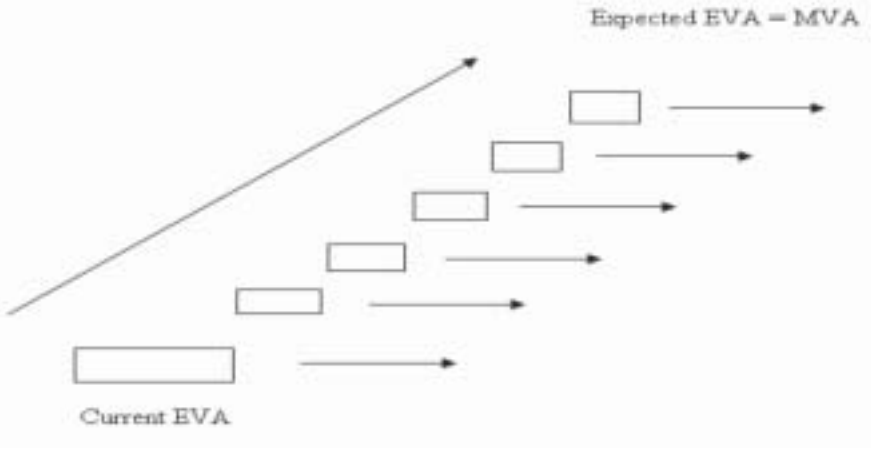
Implications of MVA



RELATION BETWEEN MVA AND EVA:

Basically, MVA is nothing but present value of future expected EVAs.

EVA and its Link to MVA



REVIEW OF LITERATURE

A number of studies have been conducted to establish the relationship between EVA and MVA. O 'Byrne (1996) studied the information content of EVA and NOPAT and argued that EVA, unlike other earning measures like NOPAT of EPS, is systematically linked to market value, and concluded that the EVA outperforms earnings in explaining firms values. Milunovich and Tsuei (1996) reviewed the correlation between MVA and several conventional performance measures, in the computer industry. They found EVA to correlate somewhat better with MVA, than the other measures. Lehn and Makhija (1997) studied the relationship between several measures and stock return and found that correlation between EVA and stock return was higher than that of their indicators.

Banerjee (1999) made a study of nine industries in India over a period of six years (1992 – 93 to 1997 – 98). He tested the relationship of MVA with variables such as EVA, adjusted Return on Net Worth (RoNW), EPS, Capital productivity (Cp) and Labor productivity (Lp). The study failed to conclude convincingly about the superiority of EVA over other independent variables in explaining MVA. The study, however, singled out EVA as the most common significant variable across the industries. Banerjee (2000) conducted a second study based on a sample of 200 firms over a period of five years. The study shows that market value of a firm can be well predicted by estimated future EVA streams.

Stewart (1991) had first studied the relationship with market rate of 618 US companies. It was observed that the relationship between EVA and MVA is highly positive among US companies. Lehn and Makhija (1996) observed that EVA explains better the variation in stock returns compared to traditional measures, such as Return on Assets (RoA), Return on

Equity (RoE). Several other studies viz. Uyemura, Kantor and Pettit; McCormack and Vytheswaran(1998); O'Byrne (1996) have found that EVA is better correlated with MVA or shareholder wealth than other traditional parameters like RoCE, RoNW, EPS etc. Stern, Stewart, and Chew (1995) concluded that changes in EVA over a five-year period explained 509 percent of the change in MVA over the same period.

Therefore an attempt is made in this study to identify the degree of relationship between EVA and MVA and Dividend paid of Shilpa Medicare Ltd, Raichur.

SOURCE OF DATA

The data were collected from the financial reports of Shilpa Medicare Ltd, Raichur, a manufacturing and exporting of bulk drugs, for the period of 2002-2007.

TOOLS OF ANALYSIS

EVA	=	NOPAT – COCE
NOPAT	=	Net operating profits after tax
COCE	=	$W_1 . K_d + W_2 . K_e + W_3 (K_R)$
W_1, W_2, W_3	=	Weight assigned to individual sources in the capital structure
K_d	=	I (1-t)
K_d	=	Cost of Debt
I	=	Interest rate
t	=	tax rate
K_e	=	$\frac{\text{Dividend}}{\text{Po}} + g$
K_e	=	Cost of Equity
P_o	=	Price of share
g	=	growth in a share
g	=	K_e X Retention Ratio (b)
b	=	$\frac{\text{Earnings Per Share - Dividend Per Share}}{\text{Earnings Per Share}}$
K_R	=	Ke (1 – B)
K_R	=	Cost of Reserves & surplus.
B	=	Brokerage cost
MVA	=	(Shares outstanding) (stock price) – (Total common equity)

EMPIRICAL ANALYSIS

The performance measure, EVA has attracted much attention in both as a management innovation as well as a stock market analysis. This study empirically tests the relationship between EVA, MVA and Dividend paid in Shilpa Medicare Ltd., for the period 2002 – 2007.

The following table shows the calculation of EVA and MVA values and its relationship with Dividend paid.

Calculation of EVA, MVA and its Relation with Dividend paid

Particulars	2002	2003	2004	2005	2006	2007
Equity (Rs. in Crs)	2.594	3.006	2.656	2.656	3.471	3.471
Reserves and Surplus (Rs. in Crs)	3.652	4.374	6.585	9.416	31.546	37.738
Capital employed (Rs. in Crs)	6.246	7.38	9.24	12.07	35.01	41.21
Cost of Equity (%)	17.69	18.67	26.39	25.97	10.24	16.09
Cost of Retained Earnings (%)	16.81	17.74	25.08	24.67	9.73	15.28
WACC (%)	17.17	18.12	25.45	24.96	9.78	15.34
COCE (Rs. in Crs)	1.07	1.337	2.35	3.01	3.42	6.32
NOPAT (Rs. in Crs)	0.50	1.021	2.496	3.30	3.975	7.09
No. of Shares	3006500	3006500	2656100	2656100	3471500	3471500
Market price (Rs)	8.55	12.70	34.15	76.05	408.15	341.15
Total Common Equity (Rs. In Crs)	6.34	7.06	9.32	12.07	35.02	41.21
EVA (Rs. in Crs)	-0.57	-0.316	0.146	0.29	0.555	0.77
MVA (Rs in Crs)	–3.77	–3.24	–0.26	8.04	106.67	77.22
Dividend paid Rs.	1.00	1.00	1.50	1.50	1.80	2.00
Co-efficient of correlation, $r_{EVA, MVA} = 0.78$, $r_{EVA, DP} = 0.98$, $r_{MVA, DP} = 0.76$.						

From the above table, it is observed that the EVA of the company is increasing during the study period. The EVA Values are ranging from Rs. -0.57Crs to 0.77 Crs because of increasing of capital employed and NOPAT. In the year 2002 and 2003, the EVA values are negative (–0.57 and –0.316) which indicate that the company did not effectively utilize the share holders funds. From 2004 to 2007, the EVA values are positive, which show the efficient use of share holder's funds.

From the above table, it is also observed that the MVA of the company is fluctuating during the study period. It is ranging from Rs. –3.24 crs to Rs. 106.67 crs because of increase in number of shares of the company and market price during the period of study. The total common equity also increased from the year 2002 to 2007 which acts as a factor to support the increasing of MVA. The negative MVA of 2002, 2003 & 2004 (–3.77, –3.24 & –0.26) indicate that of less investment value as compared with the capital contributed by the investors.

When EVA was compared with MVA, both showed negative values in the year 2002 and 2003. From the year 2004, EVA values were positive because NOPAT was greater than COCE where as MVA values were positive from the year 2005 because of increase in stock price of the company. The share price of the company decreased in the year 2007 and also the total common equity increased and due to that reason, the MVA of the company decreased in 2007.

The calculated co-efficient of correlation between EVA and MVA (0.78) shows that there is a positive relationship between EVA and MVA .It is inferred that both EVA and MVA were strongly associated with each other during the study period.

Co-efficient of correlation between EVA and Dividend paid is also positive (0.98).This shows a strong association between EVA and Dividend paid.

The co-efficient of correlation between MVA and Dividend paid (0.76) shows a positive association between MVA and Dividend paid.

CONCLUSION:

EVA is the performance measure that is tied most directly to the creation of shareholder wealth but MVA is the difference between current market value of a firm and the capital contributed by the investors. Both EVA and MVA are two financial keys to create shareholders wealth and the true indicator of a company's financial performance.

The calculated co-efficient of correlation are 0.78, 0.98 and 0.76 between EVA and MVA; EVA and Dividend paid, MVA and Dividend paid respectively. It clearly indicates a strong positive association between the variables. Since the year 2005, the positive EVA and MVA values of a company depicts that value is being added to the investors.It is also evident that the dividend paid is also moderate during the study period.

BIBLIOGRAPHY:

1. Chandra Prasanna, 'Investment Analysis and Portfolio Management', ed. 5, Tata McGraw Hill, New Delhi, 2004.
2. Vanhorne, James.C, 'Financial Management and Policy', ed12, Pearson Education Asia.
3. Dr. V.Balachandran, M.Sriram "Economic Value Added" journal of Management and Accounting Research (January 2004 – June 2005) PP.113 – 122.
4. Lal, Jawahar and Malik, Madhu, 'Economic Value Added and Corporate Performance'. The Management Accountant, Vol 36, N0.7, July, 2001, PP.532-534.
5. Stem, Joel, 'What is EVA?', Management Review, Sep. 2001.
6. Karampal, "Appearance of EVA in Indian Corporate", The Business Review, Vol.II Sept.2004.
7. Landesman E (1997), Corporate Financial Management, Strategies for Maximizing Shareholder Wealth, John Wiley, N Y.
8. Banerjee Ashok (1997), "Economic Value added (EVA): A Better Performance Measure", The Management Accountant, December.
9. David Young S and O'Byrne Stephen F (2003), EVA and Value-based Management (A Practical Guide to Implementation), Tata McGraw Hill Publishing Company Ltd.
10. www.sternstewart.com

(Cont. from page 37)

BIBLIOGRAPHY

1. Agarwal N P and Agarwal S (2002) Value Added Tax – Theories of justification. Chart Acctt 50 : 1295-99.
2. Chanchawat K L (2004) Value Added Tax – Some key aspects. Chart Acctt 53 : 812-17.
3. Dasgupta A (2005) Will State VAT Deliver? Economic and Political Weekly. XL : 3917-19.
4. Jain K (2006) Impact of Value Added Tax (VAT) on Hosiery Industry of Ludhiana. Research Project Report, Department of Business Management, PAU, Ludhiana.
5. Kumar R (2002) Value Added Tax – Issues and concerns. Chart Acctt 51 : 250-52.
6. Panthaki M K (2005) What is VAT? The Indian Textile Journal CXV : 81-83.