Research Paper Commerce

Analysis of Financial Performance Using Market Value Added Approach

* Dr.K.NIRMAL KUMAR REDDY

* Department of Commerce, SV University, Tirupathi.

ABSTRACT

Market Value Added Approach to the mix of various components in the Financial Performance. The present paper is an attempt to study Financial performance using and its impact on Market Value Added Approach in select software companies in South India. In South India there are 20 software companies that are listed in Bombay Stock exchange. Out of these 10 companies were purposively chosen to study the Market value Added of the individual companies and its impact on Market Value Added of the said companies. The companies selected are HEXAWARE TECHNOLOGIES LTD, MICRO TECHNOLOGIES (INDIA) LTD, KPIT CUMMINS INFOSYSTEMS LIMITED, ZENSAR TECH, INFOTECH ENTERPRISES LTD, CMC LTD, WIPRO LTD, TATA ELXSI, POLARIS LAB LTD, and FINANCIAL TECHNOLOGIES (INDIA) LTD for a period of ten years from 2002 to 2011. The MVA and seven independent variables were calculated for all the companies. MVA refers to the value added to the share holders' wealth by the firm. If MVA is positive, it implies that the firm added value to the shareholders' wealth. If negative it indicates that the firm is destroying the shareholders' wealth. The MVA is positive in the case of all the companies is good. So the performance of these companies is satisfactory

Keywords :

1. INTRODUCTION

One of the external indicators that gives the utmost satisfaction to the investors is share price and, truly speaking, the Market Value Added. From the investors' view point, the investor is always interested in increase in the share prices. The most reliable measure of management's long – run success in adding value is known as "Market Value Added" (MVA). MVP is the difference between company's current market value as determined by its stock price and economic book value. Economic value of the company can be determined as the amount of capital that shareholders have committed to the firm throughout its existence, including earnings that have been retained in the business. MVA is the best external performance measure as it indicates the market assessment of the effectiveness with which a company's managers have used the scarce resources under their control. Hence, it is very significant and important to analyze and identify the internal indicators that are related to with Market Value Added.

1.1 MARKET VALUE ADDED APPROACH

The present study is undertaken to examine the effect of selected variables on MVA. Thus, the objective of the study is to know one of the internal measures, which can influence the MVA. Here, MVA is taken as a dependent variable and the seven other variables are selected as independent variables. The independent variables chosen in this study are:

- Return on Net Worth
- Capital productivity
- Earnings Per Share
- Economic Value Added
- Return on Sales
- Return on Total Assets.
- Cash Profit.

One year period has been taken i.e. from 01-04-2010 to 31-03-2011, for computing the above variables and also for analysis. A brief description of each variable is given below.

1.1.1 Market Value Added (MVA)

MVA is derived by deduction the book value of the firm from its market capitalization. The book value of the firm is equity share capital plus reserves and surplus, minus any revaluation reserve and miscellaneous expenses. Market value of the firm can be determined dividing Earning Before Interest and Taxes (EBIT) by weighted average cost of capital.

Market value Added = Market value of the firm- Book value of the firm

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

Where K_o = Weighted Average Cost of Capital.

Book value of the firm = Equity share capital + Reserves and surplus – Revaluation reserves – miscellaneous expenses.

1.1.2 Return on Net worth

It can be derived by profit after taxes (PAT) minus preference share dividend divided by average net worth.

$$\text{RONW} = \frac{\text{PAT} - \text{Preference share dividend}}{\text{Average Net worth}}$$

1.1.3 Capital Productivity

Value added is net sales plus changes in stocks minus raw material consumed and power and fuel cost. Capital is treated as net fixed assets. This is considering the fact that efficient utilization of assets is the sine qua non for improving the productivity. Thus

$$\text{Capital productivity} = \frac{\text{Value added}}{\text{Capital}}$$

1.1.4 Earning Per Share

It can be derived by dividing net profit after taxes and preference dividend by the number of common shares i.e.,

$$EPS = \frac{(EBIT - I)(1 - t) - PD}{N}$$

Where,

EBIT = Profit before interest and taxes
I = Interest
t = Tax rate
PD = Preference dividend
N = Number of Common Shares outstanding

1.1.5 Economic Value Added (EVA)
For the purpose of analysis, EVA is derived as follows:

EVA = (r – c) x Invested capital

$$r = \frac{NOPAT}{\text{Invested capital}}, \quad c = \frac{\text{Cost of capital}}{\text{Invested capital}}$$

For derivation of Weighted Average Cost of Capital (WACC), invested capital is divided into three parts, equity, preference and debt. WACC is the combination of cost of equity, cost of preference share capital and cost of debt.

1.1.6 Return on Sales

$$\text{Return on sales} = \frac{PBIT}{Sales}$$

1.1.7 Return on Total Assets
This gives productivity of all taken together. This is considered on after tax basis.

$$\text{Return on Total Assets} = \frac{PBIT - \text{Tax provision}}{\text{Total Assets}}$$

1.1.8 Cash Profit
Cash profit is derived as profit after taxes plus depreciation plus expenses amortized.

The results of the MVA and other seven independent variables for select software Companies in south India as on 31-03-2011 are presented in Table 1.1.

1.1 MARKET VALUE ADDED AND OTHER INDEPENDENT VARIABLES OF SELECT SOFTWARE COMPANIES AS ON 31-03-2011

S.NO.	ITEMS	HEXAWARE	MICRO	KPIT	ZENSAR	INFOTECH	CMC	WIPRO	TATA	POLARIS	FINANCE
1	MVA*	3197.5	1104	8302.5	1478.5	3116	20695.5	23815	2441	3677	43245
2	RONW	0.42	0.27	0.24	0.4	0.22	0.7	0.41	0.17	0.06	-0.27
3	CAP	2.56	1.79	2.41	2.08	1.9	6.26	3.12	2.48	2.36	0.8
4	EPS	9.13	57.71	11.78	30.47	12.56	118.42	21.72	10.44	20.43	29.69
5	EVA*	4.16	0.27	0.67	0.45	2.19	11.22	0.91	0.41	3.48	-0.19
6	ROS	0.21	0.17	0.11	0.13	0.13	0.19	0.2	0.08	0.02	-0.54
7	ROTA	0.43	0.24	0.21	0.21	0.19	0.91	0.62	0.25	-0.02	-0.48
8	C P*	0.2	0.22	0.13	0.14	0.15	0.18	0.2	0.12	0.19	-0.41

Rupees in Crores.
Source: Compiled from the annual reports of sample companies.
The Market Value Added (MVA) and other seven independent variables such as Return on Net worth (RONW), Capital Productivity (CAP), Earning Per Share (EPS), Economic Value Added (EVA), Return On Sales (ROS), Return On Total Assets (ROTA) and Cash Profit (CP) of all the companies are calculated.

Market value added refers to the value added to the share holders' wealth by the firm for the period 31-03-2011. If market value added is positive, it implies that the firm added value to the shareholders' wealth. If market value is negative, it indicates that the firm is destroying the shareholders' wealth. The market value added is positive in the case of all the companies. Therefore, the performance of all the companies is good. Hence, the performance of all companies is satisfactory.

Regressions are run of MVA on seven variables mentioned above individually to examine the effect of each variable on MVA. The results are shown in Table 1.2.

Table 1.2 REGRESSIONS OF MVA ON SELECT INDEPENDENT VARIABLES

S.No.	Variable	R	R^2	t- value
1.	Return on Net Worth	0.311	0.009	-0.09*
2.	Capital Productivity	0.034	0.0012	0.092*
3.	Earning per share	0.211	0.044	0.571*
4.	Economic Value Added	0.968	0.0093	0.257*
5.	Return on Sales	0.697	0.487	-2.578*
6.	Return on Total Assets	0.207	0.043	-0.562*
7.	Cash Profits	0.765	0.586	-3.148*

NS : Not Significant
* Significant at 1 % level. ** Significant at 5 % level.

It is inferred from the above analysis that seven variables like RONW, CAP, EPS, EVA, ROS, ROTA and Cash Profit are found to have significant effect on MVA.

Further, an attempt is also made to examine the relative financial performance of select software companies in south India for the period of ten years from 2001-02 to 2010-11 in terms of profitability, leverage and liquidity. The data has been selected from Annual Reports of select Software companies in South India. The following twenty two financial ratios have been used as variables or inputs in the analysis.

1. Current Ratio (CR) = $\frac{\text{Current Assets}}{\text{Current Liabilities}}$

2. Absolute liquidity Ratio (ALR) = $\frac{\text{Absolute Liquidity Assets}}{\text{Liquid Liabilities}}$

3. Current Assets to Working capital (CA/WC) = $\frac{\text{Current Assets}}{\text{Working Capital}}$

4. Fixed Assets to Current Liabilities (FA/CL) = $\frac{\text{Fixed Assets}}{\text{Current Liabilities}}$

5. Fixed Assets to working capital (FA/WC) = $\frac{\text{Fixed Assets}}{\text{Working Capital}}$

6. Debt Equity Ratio (DER) = $\frac{\text{Debt}}{\text{Equity}}$

7. Current liabilities to proprietary Funds (CL/PF) = $\frac{\text{Current Liabilities}}{\text{Proprietary Funds}}$

8. Current Assets to proprietary Funds (CA/PF) = $\frac{\text{Current Assets}}{\text{Proprietary Funds}}$

9. Reserve on Equity Ratio (R-E) = Reserves / Equity

10. Gross Profit Ratio (GPR) = Gross Profit / Net Sales

11. Net Profit Ratio (NPR) = Net Profit / Net Sales

12. Return on Assets (ROA) = EBIT / Fixed Assets

13. Margin Before Interest and Tax (MBIT) = EBIT / Sales

14. Net Profit to Fixed Assets (NPFA) = Net Profit / Fixed Assets

15. Net Profit to Total Asset (NPTA) = Net Profit / Total Assets

16. Cash Turnover Ratio (CTR) = Sales / Opening cash Balance

17. Debtors Turnover Ratio (DTR) = Credit Sales / Average Debtors

18. Cash Profit Ratio (CP) = Cash Profit / Sales

19. Return on Shareholders' Funds (ROSF) = Net Profit / Shareholders Fund

20. Proprietary Ratio (P-R) = Proprietary Funds / Total Assets

21. Debt to Total Assets (DTA) = Debt / Total Assets

22. Capital Turnover Ratio (CPTR) = Sales / Average Capital Employed

For the purpose of the analysis, above, average of each ratio for ten years i.e., 2001-02 to 2010-11, is calculated for each software company separately. The average ratios of ten software companies in south India are shown in Table 1.3.

Gross profit ratio is the ratio of gross profit to net sales and expressed as a percentage. It reveals the amount of gross profit for each rupee of sale. The higher the ratio, the greater will be the margin. It is very useful as a test of profitability and management efficiency. 20 per cent to 30 per cent gross profit ratio may be considered normal. Table 1.3 shows the average ratios of ten companies. The performance of select software companies in south India in terms of Gross Profit Ratio (GPR) is shown in table 1.3. It reveals that the gross profit ratio is the highest in the case of Micro Tech Ltd., with 31.45 per cent followed by Wipro Ltd., at 21.80 per cent. Info tech Ltd's gross profit ratio is 21.46 per cent. The performance of these companies in terms of relationship between gross profit and sales is satisfactory. The GPR in the case of Hexaware, CMC, Zensar, Polaris, Kpit and Tata Elxsi Ltd lies between 10 and 20 per cent but below the standard norm. However, the companies' performance in terms of GPR is quite acceptable. But the GPR of Finance Tech is very low which indicates that its performance is not satisfactory.

Net profit ratio measures the relationship between net profit and net sales and is also expressed as a percentage. It indicates the amount of sales left for shareholders after all the costs and expenses have been met. The higher the ratio, the greater will be the profitability and the higher will be return to the shareholders. Five per cent to 10 per cent may be considered as normal. The NPR of Micro Tech Ltd occupied the first place among the select software companies with 22.79 per cent. Wipro Ltd occupies second position with 18.08. In the case of Hexaware, CMC, Infotech, Zensar, and Kpit, the NPR is more within the acceptable norms of 5 per cent and 10 percent. It reveals that the performance of these companies is satisfactory in terms of payment of more returns to their equity shareholders (Owners). Polaris Ltd and Finance Tech Ltd's NPR is below the standard norm which indicates poor performance.

The Absolute liquidity Ratio of all sample companies is more than the standard norm of 1:1 except in Tata Elxsi Limited and CMC Ltd. This stood at 0.85:1. Therefore, the liquidity and solvency position in terms of liquid ratio is good. Thus, the working capital performance of these companies during the period of study is also satisfactory.

Table 1.3
AVERAGE RATIOS OF SELECT SOFTWARE COMPANIES IN SOUTH INDIA

S.NO	RATIOS	HEXWARE	MICRO	KPIT	ZENSAR	INFOTECH	CMC	WIPRO	TATA ELX	POLARIS	FINANCE
2	ALR	1.37	3.45	1.41	1.35	1.57	0.85	1.29	0.75	1.69	1.7
3	CAWC	1.9	1.36	2.11	1.75	1.48	3.01	2.51	2.74	1.66	2.07
4	FACL	1.73	5.75	1.88	1.51	2.82	0.45	1.14	1.41	2.45	1.16
5	FAWC	1.34	1.4	1.4	1.17	1.33	0.9	1.53	2.25	1.5	3.2
6	DER	0.02	0.18	0.47	0.17	0.04	0.23	0.15	0.11	0	0.27
7	CLPF	0.34	0.15	0.12	0.47	0.24	1.55	0.4	0.77	1.48	0.44
8	CAPF	1.37	2.25	0.84	0.93	1.35	0.57	1.36	0.8	1.45	2.24
9	P-R	0.92	1.15	0.57	0.67	0.92	0.49	1	0.54	1	1.4
10	R-E	16.7	15.92	13.35	7.34	14.47	17.99	48.94	2.14	12.68	26.63
11	GPR	13.78	31.45	13.51	13.06	21.46	11.83	21.8	17.9	16.76	0.13
12	NPR	9.57	22.79	9.3	8.73	11.66	8.32	18.08	12.8	1.95	0.07
13	ROA	0.15	0.18	0.15	0.18	0.18	0.17	0.3	0.24	0.06	0.15

14	MBIT	0.11	0.25	0.04	0.1	0.14	0.11	0.2	0.15	0.1	0.2
15	NPFA	0.13	0.17	0.14	0.15	0.14	0.13	0.28	0.21	0.03	0.16
16	NPTA	0.07	0.16	0.17	0.2	0.18	0.14	0.1	0.12	0.15	0.12
17	CTR	8.3	153.33	9.19	9.45	7.54	24.3	5.18	17.85	10.63	2.42
18	DTR	5.17	3.87	4.75	5.76	4.02	3.98	5.72	4.35	5.6	7.86
19	CPR	12.56	28.91	12.46	11.47	18.62	9.39	21.11	16.01	18.71	41.16
20	ROSF	0.14	0.16	0.25	0.24	0.16	0.26	0.27	0.39	0.03	0.1
21	DTA	0.02	0.13	0.22	0.09	0.02	0.06	0.1	0.05	0	0.26
22	CPTR	19.73	2.6	5.29	8.12	15.12	30.29	18.16	6.52	21.74	0.77

Source: Appendix – II

The current ratio explains the firm's ability to meet current obligations. In the present study out of ten sample companies, the current ratio is more than the standard norm of 2:1 in the case of Micro Technologies Limited, Infotech Enterprises Ltd, Polaris, Hexaware, Wipro, Financial Technologies Ltd and Kpit Cummins Infosystems Limited. In the case of other companies, it is less than the standard norm which indicates that their short term solvency in terms of meeting short term obligation is not satisfactory.

Proprietary ratio reveals the relationship between the owners equity and the total of assets. This is no standard norm but 0.60 to 0.75 should be treated as reasonable. Too high a ratio implies that the external equities are not utilized properly and not good in the firm and shareholders point of view. Table 1.3 we can reveals that out of 10 select companies viz., Hexaware, Wipro, Infotech, Polaris, Financial Tech and Micro Tech Ltd., shows too high proprietary ratio, other companies is low. That indicates these companies acquiring the assets out of owned funds rather than borrowed funds. Too much reliance on the equity reduces the shareholders returns. Therefore, these companies should try to reduce the contribution of the equity which improves dividend pay out ratio. In the case of the other companies this ratio stood below the generally accepted norm which reveals that these companies are showing too much reliance on borrowed funds through equity. That is also in not good in the firm's point of view as well as shareholders point of view, as it reduces the profitability of company and affects the dividend pay out ratio.

Debt equity ratio expresses the relationship between borrowed capital and owner's capital. It is a measure of the long term solvency of the firm. The standard norm of this ratio is 2:1. The higher the ratio, the greater will be risk to the creditors. A lower ratio indicates a high margin of safety to the creditors. The long term debt equity ratio is below the standard norm of 2:1 in the case of select companies. It reveals that these companies are much dependent on equities rather than on debt. Usage of debt capital ensures the maximization of wealth of the shareholders. But select companies are not depends on debt capital. High proportion debt capital in the capital structure of select software companies indicates unsound capital structure system.

Return on shareholders' Investment is applied for testing profitability. The higher the ratio, the better is the return for the shareholders. The performance of Tata Elxsi Limited, Wipro Limited, CMC Limited, Kpit Cummins Infosystems Limited and Zensar Limited in terms of return on share holders' Investment is satisfactory with 39 %, 27 %, 26 %, 25 % and 24 %. Hexaware, Polaris Financial Technologies Ltd and Financial Technologies Ltd showed the lowest Return on Shareholders' Investment. This reveals that these companies should try to improve their operational efficiency.

Capital turnover ratio measures the relationship between net sales and capital employed. It indicates the firm's ability to generate sales per rupee of capital employed. The higher the ratio the more efficient the management in utilization of capital employed. Low ratio indicates the inefficiency of management in terms of utilization of capital employed. Capital turnover ratio is the highest in the case of CMC Ltd, Tata Elxsi Ltd. In the case of other companies it is moderate.

ANOVA (one way analysis of variance) is used to test whether these ratios differ significantly among different software companies. Krushkal Wallies Test is applied (use in order to overcome the pre condition of normal distribution in the case of ANOVA.)

1.2 LIQUIDITY RATIOS
Current Ratio (CR)
1. Absolute Liquidity Ratio (ALR)
2. Current assets to Working Capital Ratio (CA/WC)
3. Fixed assets to Current Liabilities (FA/CL)
4. Fixed assets to Working Capital Ratio (FA/WC)

1.3 SOLVENCY RATIO
1. Debt – Equity Ratio (DER)
2. Current Liabilities to Proprietary Funds (CLPF)
3. Current Assets to Proprietary Funds(CAPF)
4. Reserves to Equity Ratio (RE)
5. Proprietary Ratio (P-R)
6. Debt to Total Assets Ratio (DTA)

1.4 PROFITABILITY RATIOS
1. Gross Profit Ratio (GPR)
2. Net Profit Ratio (NPR)
3. Margin Before Interest and tax Ratio(MBITR)
4. Return On Assets (ROA)
5. Net Profit to Fixed Assets Ratio (NPFA)
6. Net Profit to Total Assets Ratio (NPTA)
7. Cash Profit Ratio (CPR)
8. Return On Shareholders' Investment (ROSI)

1.5 TURNOVER RATIOS
1. Cash Turnover Ratio (CTR)
2. Debtors Turnover Ratio (DTR)
3. Capital Turnover Ratio (CPTR)

ANOVA results are presented in Table 1.4. They show whether there is a significant difference among different Software Companies or not.

It can be observed from Table 1.4 that the calculated value of F is less than the table value at 5 per cent level of significance in the case of four out of the 23 ratios. This implies that for these four ratios there is no significant difference in ratios among software companies in south India. These four ratios are: 1) Long Term Debt – equity ratio, 2) Return on shareholder's equity 3) Net profit to Fixed Assets Ratio and 4) Working capital turnover ratio. For all other ratios it is found that the computed value of F is higher than the table value of F. Hence, null hypothesis is rejected. This indicates that the majority of the selected ratios for this study differ significantly among different software units.

Table 1.4
ONE WAY ANALYSIS OF VARIANCE BETWEEN ALL SAMPLE COMPANIES

Sl. No	Ratio	Source of Variation	SS	df	MS	F
1	CR	Between Groups	137.38	9	15.26	10.92*
		Within Groups	125.81	90	1.40	
		Total	263.20	99		
2	ALR	Between Groups	49.58	9	5.51	9.70*
		Within Groups	51.09	90	0.57	
		Total	100.66	99		
3	CAWC	Between Groups	26.79	9	2.98	1.50 NS
		Within Groups	179.10	90	1.99	
		Total	205.89	99		
4	FACL	Between Groups	194.40	9	21.60	17.48*
		Within Groups	111.24	90	1.24	
		Total	305.64	99		
5	FAWC	Between Groups	38.81	9	4.31	0.90 NS
		Within Groups	433.49	90	4.82	
		Total	472.30	99		
6	DER	Between Groups	1.76	9	0.20	6.35*
		Within Groups	2.78	90	0.03	
		Total	4.54	99		
7	CLPF	Between Groups	24.25	9	2.69	14.36*
		Within Groups	16.89	90	0.19	
		Total	41.14	99		
8	CAPF	Between Groups	29.44	9	3.27	6.81*
		Within Groups	43.25	90	0.48	
		Total	72.69	99		
9	P-R	Between Groups	7.77	9	0.86	13.37*
		Within Groups	5.81	90	0.06	
		Total	13.58	99		
10	R-E	Between Groups	14638.62	9	1626.51	8.87*
		Within Groups	16495.85	90	183.29	
		Total	31134.48	99		
11	GPR	Between Groups	5948.23	9	660.91	31.94*
		Within Groups	1862.23	90	20.69	
		Total	7810.46	99		
12	NPR	Between Groups	4068.04	9	452.00	29.89*
		Within Groups	1360.98	90	15.12	
		Total	5429.02	99		
13	ROA	Between Groups	0.36	9	0.04	8.75*
		Within Groups	0.41	90	0.00	
		Total	0.76	99		
14	MBIT	Between Groups	0.35	9	0.04	0.68 NS
		Within Groups	5.07	90	0.06	
		Total	5.42	99		
15	NPFA	Between Groups	8.81	9	0.98	5.21*
		Within Groups	16.90	90	0.19	
		Total	25.70	99		
16	NPTA	Between Groups	0.36	9	0.04	9.94*
		Within Groups	0.36	90	0.00	
		Total	0.72	99		
17	CTR	Between Groups	187041.02	9	20782.34	2.58*
		Within Groups	724924.44	90	8054.72	
		Total	911965.47	99		
18	DTR	Between Groups	132.80	9	14.76	3.48*
		Within Groups	381.26	90	4.24	
		Total	514.06	99		
19	CPR	Between Groups	8362.46	9	929.16	0.73 NS
		Within Groups	115159.39	90	1279.55	
		Total	123521.85	99		
20	ROSI	Between Groups	0.94	9	0.10	9.23*
		Within Groups	1.02	90	0.01	
		Total	1.97	99		
21	DTA	Between Groups	0.67	9	0.07	7.19*
		Within Groups	0.93	90	0.01	
		Total	1.59	99		
22	CPTR	Between Groups	8343.91	9	927.10	3.92*
		Within Groups	21265.12	90	236.27	
		Total	29609.03	99		

*** Significant at 5% level.**
NS : Not Significant
Source: Appendix - II

To overcome the assumption of normal distribution in the case of ANOVA, Krushkal Wallies test is also applied. The computed values of Chi square for this test for each ratio are presented in Table 1.5.

Table 1.5
KRUSHKAL WALLIES TEST

Ratios	Chi-Square
CR	47.63*
ALR	43.85*
CAWC	45.34*
FACL	64.10*
FAWC	21.08*
DER	38.86*
CLPF	74.49*
CAPF	62.92*
R-E	44.28*

GPR	68.86*
NPR	73.42*
ROA	40.67*
MBIT	53.08*
NPFA	42.85*
NPTA	44.79*
CTR	57.21*
DTR	40.47*
CPR	51.52*
ROSI	53.94*
PPR	61.23*
DTA	41.67*

***Significant at 5% level of significance.**

It is interesting to note that when the Krushkal Wallies Test is applied for all the selected ratios for this study differ significantly among the Software companies. On the basis of this study, it can be concluded that there exists significant difference in liquidity, leverage, activity and profitability ratios among different Software companies in South India.