SHAREHOLDERS' VALUE IN INDIAN PHARMACEUTICAL INDUSTRY: AN EMPIRICAL ANALYSIS

Dr. N.Sakthivel,
Assistant Professor,
PG & Research Dept. of Commerce,
Gobi Arts & Science College (Autonomous),
Gobichettipalayam, Erode, Tamilnadu, India.

ABSTRACT

The equity shareholders are real owners of company form of business organizations. They all invest their money in equity shares of a company with the primary motive of achieving good capital appreciation and regular & stable return (i.e., dividends). The investors' objectives are purely based on the profitability and financial performance of the company. So, investors before taking their investment decisions, they consider several factors which influence the corporate performance. For measuring the corporate financial performance, there are accounting profitability measures and shareholders' value based measures. Accounting profitability measures include ROI, ROE, EPS, ROCE and DPS etc., Shareholders valued based measures include EVA and MVA. Maximizing the shareholder value is considered as one of the fundamental goals of all businesses. In United States, top management is expected to maximize shareholder value. To help corporates to generate value for shareholders, value based management systems have been developed. Indeed, value based management, which seeks to integrate finance hypothesis with strategic economic philosophy, is considered as one of the most significant contribution to corporate financial planning in the last two decades or so. For measuring the corporate financial performance, there are accounting profitability measures and shareholders' value based measures. Accounting profitability measures include ROI, ROE, EPS, ROCE and DPS etc., Shareholders valued based measures include EVA and MVA. This study is an attempt to analyze the trend and growth of Shareholders' Value in terms of EVA and MVA in Indian Pharmaceutical Industry from 1997-98 to 2006-07.

Key Words: EVA, MVA, Shareholders' Value, Value Based Management.

1. INTRODUCTION

The equity shareholders are real owners of company form of business organizations. They all invest their money in equity shares of a company with the primary motive of achieving good capital appreciation and regular & stable return (i.e., dividends). The investors' objectives are purely based on the profitability and financial performance of the company. So, investors before taking their investment decisions, they consider several factors which influence the corporate performance. For measuring the corporate financial performance, there are accounting profitability measures and shareholders' value based measures. Accounting profitability measures include ROI, ROE, EPS, ROCE and DPS etc., Shareholders valued based measures include EVA and MVA.

Maximizing the shareholder value is considered as one of the fundamental goals of all businesses. In United States, top management is expected to maximize shareholder value. There are a number of value based management (VBM) frameworks, shareholder value analysis (SVA) Rapport (1986) and Economic Value Analysis (EVA) developed by Stern Stewart (1990) are the two well-known ones. Maximizing shareholders value is becoming the new corporate standard in India. The corporates, which gave the lowest preference to the shareholders' inquisitiveness, are now bestowing the utmost inclination to it. Shareholders' wealth is measured in terms of the returns they receive on their investment. The returns can either be in the form of dividends or in the form of capital appreciation or both. Capital appreciation in turn depends on the subsequent changes in the market value of shares. This market value of shares is influenced by a number of factors, which can be company specific, industry specific and macro-economic in nature.

To help corporates to generate value for shareholders, value based management systems have been developed. Indeed, value based management, which seeks to integrate finance hypothesis with strategic economic philosophy, is considered as one of the most significant contribution to corporate financial planning in the last two decades or so. For measuring the corporate financial performance, there are accounting profitability measures and shareholders' value based measures. Accounting profitability measures include ROI, ROE, EPS, ROCE and DPS etc., Shareholders valued based measures include EVA and MVA. This study is an attempt to analyze the trend and growth of Shareholders' Value in terms of EVA and MVA in Indian Pharmaceutical Industry from 1997-98 to 2006-07.

2. ECONOMIC VALUE ADDED (EVA)

The concept of Economic Value Added was introduced by a New York based consulting firm M/s Stern Stewart & Co in early eighties. The corporate sector in India is gradually recognizing the importance of EVA as a result of which some Indian companies viz., Ranbaxy Laboratories, Samtel India Ltd.etc., have started calculating EVA. Infosys Technologies Ltd is the first Indian company to report its EVA in the annual report. EVA attempts to measure true economic profit as it compares actual rate of return as against the required rate of return.

EVA is an excess profit of a firm after charging cost of capital. EVA essentially seeks to Measure Company's actual rate of return as against the required rate of return. To put it simply, EVA is the difference between Net Operating Profit after Tax (NOPAT) and the capital charge for both debt and equity (WACC- Weighted Average Cost of Capital). If NOPAT exceeds the capital charge (WACC), EVA is positive and if NOPAT is less than capital charge, EVA is negative.

Computation of EVA:

While computing EVA, capital employed represents capital invested at the beginning of the year. The logic behind taking beginning capital for computing EVA is that a company would take at least one year time to earn a return on investment. It may be mentioned here that calculation of EVA involves some

tricky issues. Each element of EVA, therefore, has been discussed individually. EVA requires three different inputs for its computation. They are given below: (A) NOPAT (Net Operating Profit after Tax) (B) Invested Capital (C) Weighted Average Cost of Capital (WACC).

$$EVA = NOPAT - (WACC \times Invested\ Capital)$$

- **Net Operating Profit after Tax (NOPAT):**

Stewart (1991) defined NOPAT as the "Profits derived from company's operations after taxes but before financing costs and non-cash book keeping entries. Such non-cash book keeping entries do not include depreciation since depreciation is considered as a true economic expense. In other words, NOPAT is equal to the income available to shareholders plus interest expenses (after tax).

- **Invested Capital / Capital Employed:**

Invested capital or capital employed refers to total assets net of non-interest bearing liabilities. From an operating perspective, invested capital can be defined as Net Fixed Assets plus Investments plus Net current assets. Net current assets denote current assets net of non-interest bearing current liabilities. From a financing perspective, the same can be defined as Net Worth plus total borrowings. Total borrowings denote all interest bearing debts

- **Weighted Average Cost Of Capital (WACC):**

For calculating WACC, cost of each source of capital is calculated separately then weights are assigned to each source on the basis of proportion of a particular source in the total capital employed. Weights can be assigned on market value basis or book value basis. Stewart suggested market value basis. WACC can be calculated as below:

$$WACC = E/CE \times Ke + LTB/CE \times Kd$$

Where E = Equity Capital, CE = Capital Employed, LTB = Long Term Borrowings,
Ke = Cost of Equity Capital, Kd = Cost of Debt Capital
WACC includes two specific costs viz., (i) cost of equity (Ke), (ii) cost of debt (Kd).

- ***Calculation of Cost of Debt (Kd):***

Cost of debt is calculated by multiplying the pre-tax debt cost by (1–t), Where't' refers the effective tax rate. This will furnish the post tax cost of debt. The post tax cost of debt is calculated because debt cost enjoys tax shield. In other words, tax reduces the effective cost of debt. Cost of debt can be calculated by applying the following formula:

$$Cost\ of\ Debt = (Total\ Interest\ Expense / Beginning\ Total\ Borrowings) \times (1-t) \times 100$$

$$Kd = (TIE / BTB) \times (1-t) \times 100$$

➢ ***Calculation of Cost of Equity (Ke):***

The cost of equity can be calculated by the Capital Asset Pricing Model (CAPM). The CAPM is normally used to determine minimum required rates of return from investment in risky assets. Stewart also used CAPM consistently as a measure for cost of equity in his methodology for computing EVA. The expected return on equity can be calculated under CAPM by applying the formula given below:

$$Rj = Rf + \beta (Rm - Rf)$$

Where **Rj** = Expected Return on Scrip j, **Rf** = Risk free rate of return, **β** = Beta representing the volatility of scrip j against market volatility. **Rm** = Expected stock market return.

3. MARKET VALUE ADDED (MVA)

With a view to measure shareholders' value, Stewart invented the term Market Value Added (MVA). Market Value Added (MVA) is defined as "the difference between market value of invested capital and book value of invested capital of a company at a given period of time". Market value of invested capital refers the market value of equity capital and debt capital, but the market value of debt is not easily available as debts are not generally traded. Thus, the definition of MVA can be stated as market capitalization less net worth. Market capitalization is the product of closing share price and number of out standing shares as on that date (i.e., date of balance sheet). Whereas, net worth is the sum of equity capital, reserves and surplus net of revaluation reserve less accumulated losses and miscellaneous expenditure.

MVA = Market Capitalization – Net Worth

Market Capitalization = Closing Share Price × Number of Outstanding Shares.

Net Worth:

1.Equity Share Capital	**xxxx**
2.Reserve and Surplus (net of revaluation reserve)	**xxxx**
Total	**xxxxx**
Less:	
1.Accumulated Losses	**xxx**
2.Miscellaneous Expenditure	**xxx**
Net Worth	**xxxx**

MVA is considered as a measure of shareholders' wealth. MVA denotes the extent to which the market has added value to the net worth of a company. An increase in MVA infers maximization of shareholders' wealth. This is because shareholders want to see appreciation in stock price. MVA can improve if market capitalization increases for the same level of net worth or if net worth of a company decreases. MVA provides the stock market's assessment of how efficient a company is in using capital. A positive MVA indicates that a company is building value for its shareholders and a negative MVA indicates that a company is destroying shareholders' value.

4. PHARMACEUTICAL INDUSTRY AND ITS IMPORTANCE

With 14% of annual growth the Pharmaceutical Companies in India is worth USD 3.1 billion. It is the largest standard drugs producer in the world and has substantial contribution towards meteoritic growth of India. The pool of 'Pharmaceutical Company' is dominated by standard manufacturers. Although, some

first line companies are slowly shedding 'Generic' tag and dawning 'Innovator' tag to get a global footage, but still generic drugs accounts for 80% of revenue. 'Pharmaceutical Companies in India ' is getting technologically strong and self reliant. 'Pharmaceutical Companies in India ' are armed with:

- Low costs of production & R&D costs (around 70% less than their Western counterparts).
- Highly innovative scientific manpower.
- Hosts of national and private laboratories.
- A strong IPR regime following WTO and WIPO norms.

Pharmaceutical Market in India is actively partnering with Government, NGOs and other Healthcare providers to improve the health and quality of life by innovating and developing safe, cost-effective and quality medicines. It also aims to increase the access of medicines to people in rural areas and those living at or below the poverty line. Companies like Ranbaxy, Dr. Reddy's Lab, Lupin Lab, Torrent Pharmaceuticals, Glen mark etc are performing excellently at the global level also. Ranbaxy has recently won a fierce battle against infringement (Norway) involving key Norwegian patents on Atorvastatin (a cholesterol-lowering drug marketed by Pfizer). MNC ' Pharmaceutical Companies in India ' are aggressively forging collaboration, acquisitions and even cross- licensing with foreign firms for greater reach, both in domestic and world market. 'Pharmaceutical Company in spite of registering fabulous growth is still laced with some negative market imperatives. 'Pharmaceutical Companies Operating in India ' is a pool representing about 250 large Pharmaceuticals manufacturers, suppliers and about 8000 Small Scale Pharmaceutical & Drug Units. To be one of the largest and most advanced in the world ' Pharmaceutical Market in India ' must address the issues of exporters, manufacturers and suppliers. 'Pharmaceutical Companies in India ' offers tremendous growth opportunities in years to come especially in the areas of Biological Sciences Research (particularly genomics and proteomics), Clinical Research & Development and Innovative Process Chemistry.

5. LITERATURE REVIEW

Lehn and Makhija (1996) stated that EVA and Market Value Added (MVA) are increasingly being eyed as alternative measures of business performance and strategic development. Despite the attention, however, the empirical research has been devoted to these two metrics. To provide clarifications on the subject, the study which examines the effectiveness of EVA and MVA as measures of performance, as signals of strategic change in these metrics of strategic development was conducted. The study used data from 241 firms for the time slap 1987-96, showed that EVA and MVA effectively measured the quality of strategic decisions and served as signals of strategic change. They were found to be significantly correlated with stock price performance and inversely related to turnover. Firms having greater focus in their business activities had higher MVA than less focused counterparts.

Kramer and Pushner (1997) tested the hypothesis that EVA is highly correlated with MVA. The study concluded that no clear evidence to support the contention that EVA is the best internal measure of corporate success in adding value to shareholder investments. On the contrary, the market seems more focused on 'Profit' than EVA. The study found that there is no clear advantage to shareholders in looking at EVA, as the accounting return on their investment is NOPAT.

Banerjee (1997) has conducted an empirical research to find the superiority of EVA over other traditional financial performance measures. Ten industries have been chosen and each industry is represented by four/five companies. ROI and EVA have been calculated for sample companies and a

comparison of both has been undertaken, showing the superiority of EVA over ROI. Indian companies are gradually recognizing the importance of EVA. Some of such companies are Ranbaxy Laboratories, Samtel India Ltd and Infosys Technologies Ltd.

KPMG-BS Study (1998) assessed top companies on EVA, sales, PAT (Profit after Tax), and MVA criteria. The survey has used the BS 1000 list of companies using a composite index comprising sales, profitability and compounded annual growth rate of those companies covering the period 1996-97. Sixty companies have been found able to create positive shareholder value whereas 38 companies have been found to destroy it. Accounting numbers have failed to capture shareholder value creation or destruction as per the findings of the study. 24 companies have destroyed shareholder value by reporting negative MVA.

Pattanayak and Mukherjee (1998) discussed that there are traditional methods to measure corporate income or known as accounting concept and there is also a modern method to measure corporate income or known as economic concept. EVA, which is based on economic concept, is professed to be a superior technique to identify whether the organization's NOPAT (Net Operating Profit after Tax) during a period is covering its WACC (Weighted Average Cost of Capital), thus generating value for its owners. But it is very tricky to calculate EVA. Companies trying to implement EVA are asked to incorporate 164 amendments to their financial accounts.

Banerjee and Jain (1999) carried out a research based on empirical data. Among the selected independent variables (EPS, EVA, Kp, Lp and ARONW), EVA has proved to be the most explanatory variable, when MVA was taken as the dependent variable and Backward Elimination method was applied to find the most explanatory independent variable. For this purpose, the time frame was of eight years and all the variables were calculated over this period for the sample companies.

Anand, et.al. (1999) revealed that EVA, REVA (Refined Economic Value Added) and MVA are better measures of business performance than NOPAT and EPS in terms of shareholders' value creation and competitive advantage of a firm. Since conventional management compensation systems emphasize sales / asset growth at expense of profitability and shareholders' value. Thus, EVA is a measure that shifts focus on an organizational culture of concern for value.

Ashok Banerjee and Jain (1999) examined the relationship between shareholder wealth and certain financial variables. This study was conducted with a sample of top 50 companies from Drugs and Pharmaceutical industry. This study concluded that out of select independent variables, EVA has proved to be the most explanatory variable and the capital productivity is a predictor of shareholder wealth.

Madhu Malik (2004) examined the relationship between shareholder wealth and certain financial variables like EPS, RNOW and ROCE. By using correlation analysis, it was found that there was positive and high correlation between EVA and RONW, ROCE. There was a positive but low correlation between EVA and EPS. By using co – efficient of determination (r^2), EVA was compared with Traditional performance measures and it was found that not a single traditional performance measure explains to the fullest extent variation in shareholder wealth.

Karam Pal Singh and Mahesh Garg (2004) examined the disclosure of EVA in Indian corporates. The study revealed that out of 50 companies, only 32 companies have generated positive EVA and 18 companies have destroyed their shareholders' wealth in 1998. In 2000, only 29 companies have generated positive EVA. In 2001, only 34 companies have generated positive EVA. And the same trend continued in 2002. The study also found that one – third of total companies are reporting negative EVA throughout the period and another one – third companies are generating positive EVA. It also revealed that only two – three industries are reporting negative EVA and rest are generating positive EVA.

Venkateswarlu and Nitesh Kumar (2004) investigated the relationship between non – market performance measures and true market value of selected firms from four industries viz., FMGC, Health Care, IT Industry and Public Sector Units in India. It was found that cash flow per share (CFPS) plays an important role in the market return of any company. In case of FMGC sector, EPS and ROS have

appreciable correlation with the market return, incase of IT sector, it was found that the ROIC has significant relation with the value. Heath Care and Public Sector Units are similar to the FMGC sector with regard to the relationship between market returns and performance measures. By using multi – variate analysis, it was found that ROE, ROIC, CFPS, and GRCE contribute significantly to the market value and similarly, ROE, CFPS and CFROS play significant role in FMGC sector. In case of IT sector, significant relation was observed among EPS, ROE, ROIC and CFROS. But, it is surprising to know that in case of PSU sector, no significant relation was observed between market return and other non – market value performance measures .

Panigrahi (2005) examined how the Economic Value Added (EVA) is superior to Market Value Added (MVA). This has been examined by financial performance of ITC Ltd, which has adopted the EVA as its performance measurement. This study found that by increasing Economic Value Added (EVA), Shareholder Wealth is created and established the fact that the Economic Value Added (EVA) is superior to the Market Value Added (MVA).

Singh (2005) examined an appropriate way of evaluating bank's performance and also found out which Indian banks have been able to create (or destroy) shareholders' wealth since 1998-1999 to 2002-2003. This study is based on 28 Indian private and public sector banks that are listed on the Bombay Stock Exchange (BSE). The study suggested that the relationship between EVA and MVA is statistically significant. The study showed impressive performance in terms of EVA by banks such as State Bank of Bikaner and Jaipur, Jammu and Kashmir Bank, Global Trust Bank and Indusind Bank.

Ghanbari and Sarlak (2006) studied economic value added in Indian automobile industry. The objectives of the study are: to compute and analyze Economic Value Added (EVA) of firms in the automobile industry and to identify the EVA trend of the industry the period of the study. The study found that the Economic Value Added (EVA) of only 30 % of the selected companies is positive and 70 % of the selected companies have destroyed their shareholders wealth by negative EVA. The study concluded that there has been a significant increasing trend in EVA of the Automobile Industry firms which means that companies have a positive trend to improve their firm values.

Ramachandra Reddy and Yuvaraja Reddy (2007) examined the effect of selected variables on MVA. This study was conducted with 10 cement companies in India and the objective of this study was to examine the effect of select variables on MVA. For this purpose, Multiple Regression technique has been used to test the effect of select variables on MVA. The study found that none of the factors is found to have impact on MVA and EPS is found to have negative and significant impact on MVA. The study concluded that the performance of select cement companies in terms of profitability cannot be increased unless the improved problems like modernization, cost reduction, control taxes etc., are solved.

6. OBJECTIVES OF THE STUDY

- To analyze the trend and growth of shareholders' value in Indian Pharmaceutical Industry in terms of EVA (Economic Value Added) and MVA (Market Value Added) .

7. RESEARCH METHODOLOGY

Sources of Data:

This study is based on the secondary data. To analyze the trend and growth of value addition in terms of EVA and MVA in Indian Pharmaceutical Industry, Required financial data of sample companies were collected from ***"Capitaline Plus"*** Database of Capital Market Publishers India (Pvt) Ltd.

Sample Design:

The sample size of the present study is '15' pharmaceutical companies from Indian Pharmaceutical Industry. These companies were selected as sample companies by considering the

availability of financial data for computing EVA, components of EVA (NOPAT, WACC) and MVA, components of MVA (Market Capitalization, Net Worth) for the study period from 1997-98 to 2006-07.

Data Analysis:

For analyzing the trend and growth of value addition in terms of EVA and MVA in Indian Pharmaceutical Industry, the present study used statistical tools like mean, standard deviation, CV, LGR (Linear Growth Rate) and 't' statistic for analyzing the financial data of sample cement companies.

8. SHAREHOLDERS' VALUE IN INDIAN PHARMACEUTICAL INDUSTRY

The economic and business environments have changed dramatically after economic liberalisation in India. Business become competitive and business executives are faced with an increasingly competitive and complex environment. Also, the need for creative leadership to handle the new developments in global business, technology, mergers, E-commerce and innovations is accelerating. Various developments in business industry call for a strategic management control system using accounting based performance measures as its central component. Given these developments in the business environment, companies need more powerful and sophisticated financial and non-financial indicators that measure performance. The traditional metrics, such as Earning per share (EPS), Return on Assets (ROA), Return on Sales (ROS), Cash Flow, etc, used by managers over the years have become inadequate to run any business under this new environment. However, these measures will not deliver much about creation of value to their shareholders.

On the other hand, first class metrics, that is, value based metrics like Economic Value Added (EVA), Market Value Added (MVA) are being introduced and greater attention is being paid to getting the accountants and the finance executives involved in planning, decision making and performance evaluation in recent times as these metrics explicitly discloses the value of the firms. These value based metrics are widely used by the management of a business in order to look for a way to link earnings and related investment, not just for the company as a whole, but for the individual parts of the business as MVA and EVA are an effective measure of the quality of managerial decisions as well as a reliable indicator of an enterprise's value growth in future. So, management of business has now started investigating ways to link its own interest to the interest of the shareholders. Due to the above developments, economic value added (EVA) and market value added (MVA) are given the most attention and most of the companies in India, either MNC or Indian have now adopted use of above first class metrics in recent times. So, the present study uses the MVA and EVA as metrics for evaluating the shareholders' value in pharmaceutical industry in India.

Economic Value Added in Indian Pharmaceutical Industry

Economic value added (EVA) is a value based financial performance measure, an investment decision tool and a performance measure reflecting the absolute amount of shareholder value created. It is computed as the product of the "excess return" made on an investment or investments and the capital invested in that investment or investments. EVA is the net operating profit minus an appropriate charge for the opportunity cost of all capital invested in an enterprise or project. It is an estimate of true economic profit, or the amount by which earnings exceed or fall short of the required minimum rate of return investors could get by investing in other securities of comparable risk (Stewart, 1990).

The results of the analysis of the trend and growth in EVA for Pharmaceutical industry are provided in Table 1.

Table 1 Trend and Growth in Economic Value Added (EVA) for Pharmaceutical Industry

Year	Net Operating Profit after Tax (NOPAT) Crores	Invested Capital Crores	Weighted Average Cost of Capital (WACC) %	Economic Value Added (EVA) Crores
1997-98	264.87	2068.55	104.74	125.01
1998-99	376.66	2360.70	155.44	128.25
1999-00	409.34	3177.54	123.14	181.21
2000-01	504.00	3122.79	126.90	255.70
2001-02	572.06	3985.39	130.75	227.84
2002-03	805.58	5046.35	96.76	503.61
2003-04	1164.15	5901.53	143.10	533.81
2004-05	1116.14	6962.80	88.04	759.45
2005-06	1327.42	7108.24	74.48	1011.24
2006-07	1112.83	10655.20	51.52	855.36
Mean	765.31	5038.91	109.49	458.15
SD	387.92	2677.32	32.34	325.37
CV	50.69	53.13	29.54	71.02
LGR	121.42***	841.43***	-7.31**	101.55***
t Value	(8.40)	(8.75)	-(2.66)	(8.17)

**Significant at 5% level. ***Significant at 1% level.

It is clear from the table that NOPAT and Invested Capital with average of Rs765.31 crores and Rs.5038.91 crores has recorded positive significant growth during the study period (LGR = 121.42, t = 8.40, $p < 0.01$ for NOPAT and LGR = 841.43, t = 8.75, $p < 0.01$ for IC). From CV values, it is clear that the volatility has been at same level for both NOPAT and IC for pharmaceutical industry. The WACC, on the other hand, has been more than 100 per cent in 6 out of 10 years leading to the average of 109.49 per cent for all 10 years. However, it has exhibited significant decline at the rate of 7.31 per cent on an average

every year (LGR = -7.31, t = -2.66, p < 0.05) to stay at 51.52 per cent in 2006-07 from 104.74 per cent in 1997-98.

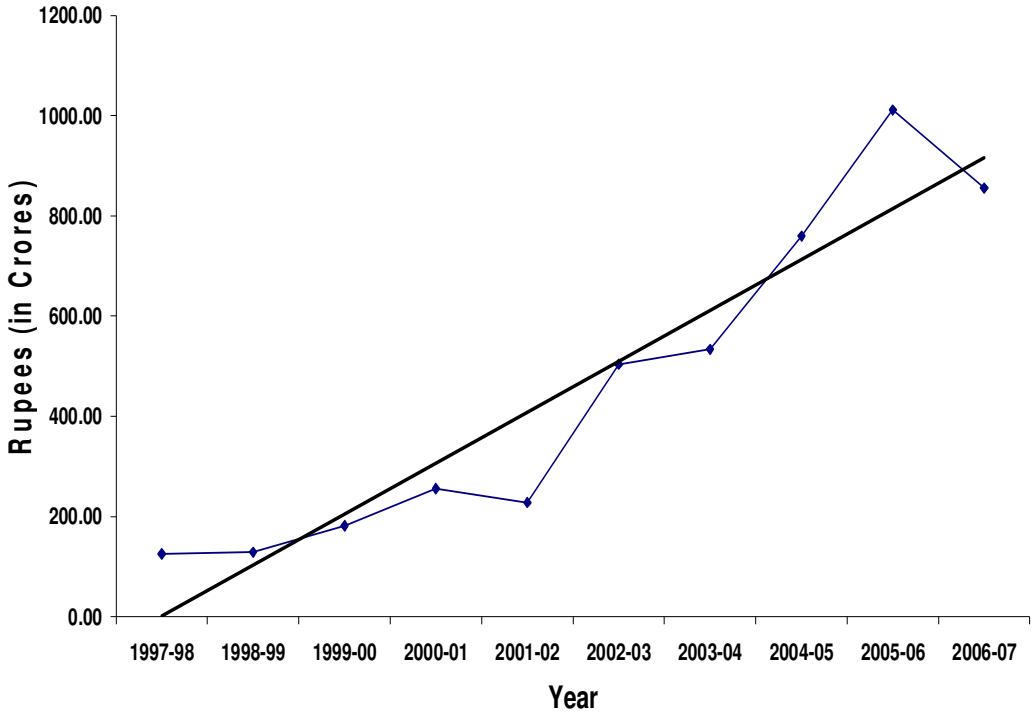

FIGURE.1 TREND IN EVA FOR PHARMACEUTICAL INDUSTRY

The significant decline WACC has increased the value creation in terms of EVA for Pharmaceutical industry. The positive significant LGR of 101.55 (t = 8.17, p< 0.01) has evidenced the up trend in value creation for companies under this industry. The positive EVA in all years has also revealed that the companies under this industry have been highly valued over time and wealth creation for shareholders' has increased. The slope line of EVA is straight and in the upward direction according to line chart presented in Figure 1. Further, in 4 years the actual EVA is above the trend and in 1 year, it is equal to trend value. This in turn shows that the companies under pharmaceutical industry has succeeded to meet public expectations in terms of value creation through EVA either by increasing operating income from assets in place through reducing cost of production or increasing sales, or reducing the cost of capital by changing the financing mix in capital structure.

Market Valued Added in Indian Pharmaceutical Industry

Market value added (MVA) is the excess of market value of capital (both debt and equity) over the book value of capital. If the MVA is positive, the company has created wealth for its shareholders. If the market value of capital is greater than its book value, the company has created wealth. In the following section, MVA data is analyzed along with its primary components Market Capitalization and Net worth

for the selected industries during the study period from 1997-98 to 2006-07. The result of the trend and growth analysis of MVA for pharmaceutical industry is exhibited by Table 2.

Table 2 shows the market capitalization, net worth and market value added for Pharmaceutical industry for the study period.

Table 2 Trend and Growth in Market Value Added (MVA) for Pharmaceutical Industry

(Rupees in Crores)

Year	Market Capitalization	Net Worth	Market Value Added (MVA)
1997-98	1542.23	1771.15	-228.92
1998-99	1328.13	2178.60	-850.47
1999-00	1947.96	2489.63	-541.67
2000-01	4035.01	2914.34	1120.67
2001-02	8515.03	3596.78	4918.25
2002-03	6437.81	4320.31	2117.50
2003-04	12971.07	5388.81	7582.26
2004-05	12585.30	6415.37	6169.93
2005-06	20634.63	7363.05	13271.58
2006-07	51239.39	8576.40	42662.99
Mean	12123.66	4501.44	7622.21
SD	15078.46	2345.50	13088.76
CV	124.37	52.11	171.72
LGR t Value	4002.05*** (3.82)	759.48*** (14.06)	3242.57** (3.21)

**Significant at 5% level. ***Significant at 1% level.

It can be observed from table that there has continuous linear trend in market capitalization (without any zigzag movement during the period) from Rs.1542.33 crores in 1997-98 to Rs.51239.39 crores in 2006-07 with mean value Rs.12123.66 crores. It has grown significantly at the rate of Rs.4002.05 crores on an average every year (LGR = 4002.05, t = 3.82, $p < 0.01$). The net worth of pharmaceutical industry has also exhibited continuous upward trend over the period. The net worth, which has been Rs.1771.15 crores in 1997-98, has increased to Rs.8576.40 crores in 2006-07. From linear growth rate (LGR = 759.48, t = 14.06, $p < 0.01$), which is significant at 1 per cent level, it is understood that there has been an increase of Rs.759.48 crores every year on an average. From CV values, 124.37 for market

capitalization and 52.11 for net worth, it is apparent that volatility in market capitalization has been much higher than that of net worth.

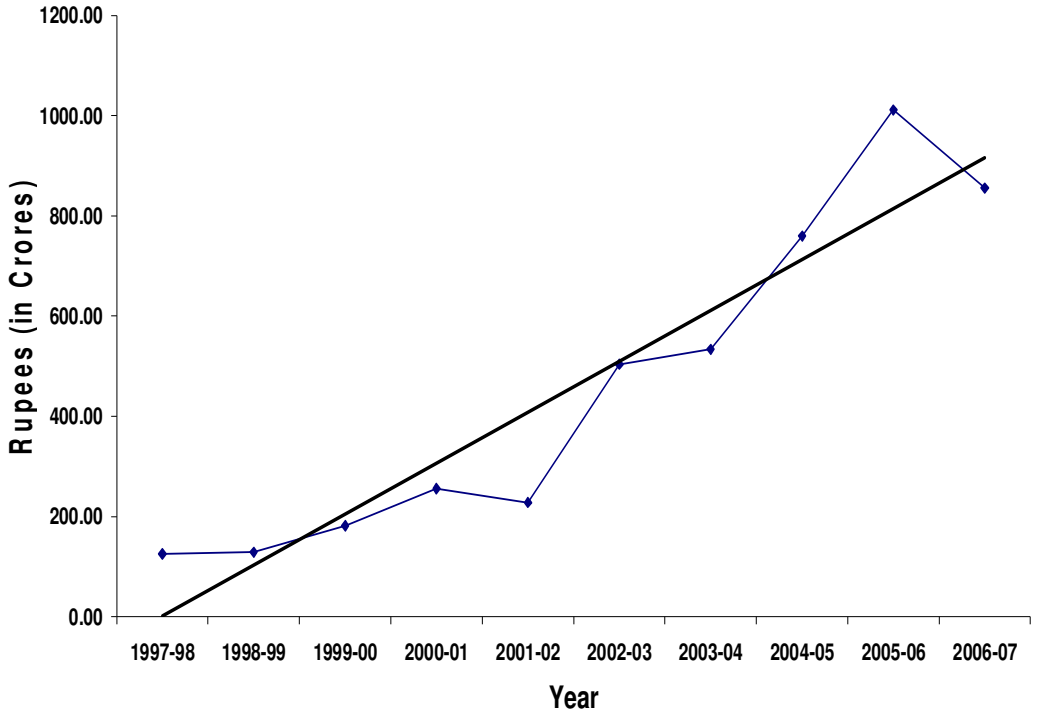

FIGURE.2 TREND IN MVA FOR PHARMACEUTICAL INDUSTRY

Due to volatility in market capitalization, there has been high heterogeneity in market value added. The MVA with negative values in the first three years, become positive from 2000-01. But, there has been upward / downward movement in it, before showing continuous upward trend from 2004-05 to 2006-07. The MVA has been at its maximum of Rs.42662.99 in 2006-07. Further, the rate of growth in MVA is positive and significant at 5 per cent level (LGR = 3242.57, $t = 3.21$, $p < 0.01$). This shows that value creation tend to go up every year for pharmaceutical industry since 2000-01. The graphical presentation of trend using line chart (Figure. 2) has further given evidence in visual form that MVA has trended positively with curve linear in shape and actual positive MVA has been greater than or equal to expected value in most of the years since 2000-01.

9. CONCLUSION

It is concluded that the companies under pharmaceutical industry has succeeded to meet public expectations in terms of shareholders' value creation through EVA either by increasing operating income from assets in place through reducing cost of production or increasing sales, or reducing the cost of capital by changing the financing mix in capital structure. This study showed that shareholders' value creation tend to go up every year for pharmaceutical industry since 2000-01. To sum up, from the interpretation of

the results so far in this article, it is concluded that pharmaceutical in India has succeeded in shareholders' value creation to the expectation of the public through MVA and EVA

10. REFERENCES

Lenn, K., Makhiija, A.K. (1996), "EVA and MVA as performance measures and signals for strategic change", Strategy and Leadership, Vol.24, May/June, 1996, pp. 34 - 38.

Kramer, K. Jonathan and Pushner, George (1997), "An Empirical Analysis of Economic Value Added as a Proxy for Market Value Added", Financial Practice and Education, Spring / Summer 1997, pp. 41-49.

Banerjee, Ashok (1997), "Economic Value Added (EVA): a better performance measure", The Management Accountant, December 1997, pp. 886 – 888.

KPMG-BS, (1998), "Corporate India: An Economic Value Scoreboard", The Strategy, January-March 1998, pp. 22-25.

Pattanayak, J.K., Mukherjee, K. (1998), "Adding Value to Money", The Chartered Accountant, February 1998, pp. 8-12.

Banerjee, Ashok and Jain (1999), "Economic Value Added and Shareholder Wealth: An Empirical Study of Relationship", Paradigm, Vol. 3, No. 1, January-June, 1999, pp. 99-133.

Anand, Manoj, Garg, Ajay, and Arora, Asha (1999), "Economic Value Added: Business performance measure of shareholders' value", The Management Accountant, May 1999, pp. 351-356.

Banerjee, Ashok and Jain (1999), "Economic Value Added and Shareholder Wealth: An Empirical Study of Relationship", Paradigm, Vol. 3, No. 1, January-June, 1999, pp. 99-133.

Malik, Madhu, (2004), "EVA and Traditional Performance Measures: Some Empirical Evidence", The Indian Journal of Commerce, Vol. 57, No. 2, April-June 2004, pp. 32-37.

Pal Singh, Karam and Garg.C. Mahesh, (2004), "Disclosure of EVA in Indian Coporates", The Indian Journal of Commerce, Vol. 57, No. 2, April-June 2004, pp. 39-49.

Venkateshwarlu, M. and Nitesh Kumar, (2004), "Value Creation in Indian Enterprises – An Empirical Analysis", The ICFAI Journal of Applied Finance, Vol. 7, No. 1, December 2004, pp. 18-31.

Panigrahi, Anupam (2005), "Supremacy of Economic Value Added (EVA) Over Market Value Added (MVA)", ABHIGYAN, Vol. XXIII, No. 1, April-June 2005, pp. 26-35.

Singh, Prakash (2005), "EVA in Indian Banking: Better Information content, More Shareholder Value", ABHIGYAN, Vol. XXIII, No. 3, October-December 2005, pp. 40-49.

Ghanbari, M. Ali and Sarlak, Narges (2006), "Economic Value Added: An Appropriate Performance Measure in the Indian Automobile Industry", The Icfain Journal of Management Research, Vol. V, No. 8, 2006, pp. 45-57.

Ramachandra Reddy, B. and Yuvaraja Reddy, B, (2007), "Financial Performance through Market Value Added (MVA) Approach", The Management Accountant, January 2007, pp. 56-59.
