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**EQUITY VALUE ADDED, MARKET VALUE ADDED AND DECIDING  
TIMING OF INVESTMENT- A CASE STUDY OF TATA STEEL**

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**ABSTRACT**

Normally profitability of a company is taken as yard stick for measuring its financial performance. However, information provided by the statement of profit and loss fails to disclose the real value added by the business towards its equity share holders. Economic value added statement as developed by Stern and Stewart, a New York based consulting firm is a measure of a company's financial performance based on the residual wealth calculated by deducting cost of capital from its net operating profit after taxes. However Economic value added only computes value added by the business as a whole for its fund providers including the equity share holders, further it fails to reflect whether the business is able to add the minimum value that equity shareholders may earn by investing their funds at the risk free rate. The Equity value added is based on the premise that every company should increase the net wealth of its shareholders. The objective of this research paper is to develop a new model for testing whether the company is able to generate minimum required rate of return on its equity or not and further to evaluate the right timings for investment in shares based on the combination of Equity Value Added and Market Value Added. For better understandability this paper has applied this model on Tata steel.

**Key words:** Value Added, EPS, Yield, P/E Ratio, NOPAT

## THE CONCEPT OF ECONOMIC VALE ADDED

The concept of value added has been derived from economics. It has been severally applied for measuring national income under production method. Value added in economics means value of output minus intermediate consumption. The concept of value added in finance was introduced by Stern and Stewart, a New York based consulting firm in the form of Economic value added. EVA is a measure of a company's financial performance based on the residual wealth calculated by deducting cost of capital from its operating profit. EVA is based on the notion that just profit is not sufficient for the growth and survival of a business firm unless it could add value to the net wealth of fund providers. EVA is computed by deducting the cost of capital from net operating profit after taxes of the business enterprise. Mathematically,  $EVA = \text{Net Operating Profit after Taxes (NOPAT)} - (\text{Capital} * \text{Cost of Capital})$ . If EVA is positive, it is a positive indicator of growth in net wealth of Stake holders of the Company. However Economic value added only computes value added by the business as a whole for its fund providers including the equity share holders, further it fails to reflect whether the business is able to add the minimum value that equity shareholders may earn by investing their funds at the risk free rate.

## THE CONCEPT OF EQUITY VALUE ADDED

Normally profitability of a company is taken as yard stick for measuring the performance of company. Every company should increase the net wealth of its shareholders. Increase in net wealth demands creating value for its shareholders. Equity value added =  $(PAT - \text{Preference dividend}) - (\text{Equity}^1 * \text{Risk free rate})$ . The basic philosophy of Equity Value Added is that company's invested amount in equity should at least generate return equal to risk free rate for its shareholders, otherwise it will be better off for the shareholders to invest at risk free rate rather than in risky equity. For creating wealth for the shareholders, Equity Value Added should be positive and growing. If Equity Value Added is positive, it shows that Rate of Return on Equity of the company is greater than Risk free rate of return.

## THE CONCEPT OF MARKET VALUE ADDED

Market value added explains whether the Earnings yield<sup>2</sup> of the company is greater than risk free rate of return. Market value added is computed as:  $PAT - (\text{Market value of shares} * \text{Risk free rate})$ . For a better investment opportunity, Market Value Added should be positive.

<sup>1</sup>Equity is also called net worth and it means equity share capital + reserve & surplus.

<sup>2</sup>Earnings yield means  $EPS/MPS * 100$

If Market Value Added is positive, it shows that Earnings yield of the company is greater than risk free rate of return and thus shares are undervalued.

If Market price per share is decreasing, it will show an increasing trend and vice versa. Growing Market Value Added shows that there is great fear in the market and on the other hand, declining Market Value Added shows increasing greed for the shares of the company. If Market Value Added is negative, it shows that Earnings yield of the company is lesser than risk free rate of return and thus shares are overvalued.

### **DECIDING TIMING OF INVESTMENT THROUGH EQUITY VALUE ADDED AND MARKET VALUE ADDED.**

For deciding any investment in shares of a company, other things remaining constant, the following conditions should be satisfied as an ideal situation:

The Equity Value Added of the company should be growing consistently

The Equity Value Added as well as Market value added both should be positive and

Equity Value Added cuts Market Value Added from below

If all above three conditions satisfy, it shows that

Return generating capacity of the company is increasing;

Rate of Return on Equity of the company is greater than Risk free rate of return;

Earnings yield of the company is greater than Risk free rate of return;

Earnings yield of the company is greater than or equal to Return on Equity of the company

If Equity Value Added cuts Market Value Added from above, it gives sell signal.

### **OBJECTIVES OF THE STUDY**

To develop a new model for testing whether the company is able to generate minimum required rate of return on its equity or not

To evaluate the right timings for investment in shares based on the combination of Equity Value Added and Market Value Added

### **RESEARCH METHODOLOGY**

Data is basically collected from secondary sources like annual reports of companies. To analyze the data both Financial and Statistical pools have applied. Ten years financial statements of Tata Steel has been taken into consideration for the study.

## LITERATURE REVIEW

Raluca- AndreeaTrandafir, worked on EVA in their paper titled “The economic value added (EVA) - A measurement indicator of the value creation within a company from the Romanian seaside hotel industry, (2015)”. The purpose of their research was to highlight the role of EVA – an indicator measuring the financial performance of a hotel company from the Romanian seaside. They performed a case study on a representative hotel company that got positive financial results pursuant to conventional methods. They highlighted the importance of EVA.

SalagaJakub, BartosovaViera and Kicova in their paper on “Eva, Economic Value Added as a measurement tool of financial performance, (2015)” presented one of the possible methods of calculating the EVA indicator in conditions of Slovak companies and accounting legislation in Slovakia. Primary data as well as secondary data were used for the purpose of this paper, along with various methods such as analysis, synthesis, deduction, etc

Sarbapriya Ray in his article “Efficacy of Economic Value Added Concept in Business Performance Measurement, (2012), tried to assess the efficacy of Economic Value Added concept in business performance measurement. This paper analyzed the notion of Economic Value Added (EVA) that is gaining attractiveness in India and also examines whether EVA is a better business performance measure or not.

Adnan M. Abdeen, worked on EVA in his paper titled “A Fresh Look at Economic Value Added: Empirical Study Of The Fortune Five-Hundred Companies, (2011). As per this Paper the main problem with EVA is the calculation of its various elements, particularly the net operating in-come after tax and the average cost of capital.

KonecnyZdenek, worked on the paper titled “Economic Value Added as a Dependence on the Corporate- and Market-life Cycle, (2011)” In this research, the model by Reiners (2004) was used to identify the phases of corporate- and market life cycle and the method provided by the “Czech Ministry of Industry and Trade” was used to calculate EVA. However, there is a consideration of the relativity of EVA in the form of “spread” because of the intercompany comparison. The study found that, the highest spread is achieved by companies that are in the phase of expansion and phase of market expansion.

Shil, Nikhil Chandra in his paper titled “Performance Measures: An Application of Economic Value Added (2009)” explained EVA as a Management tool. This paper has worked on both

advantages and limitations of EVA. As per the Author, using EVA only is no case a good decision. Rather, it should be used with other to take decisions more effectively

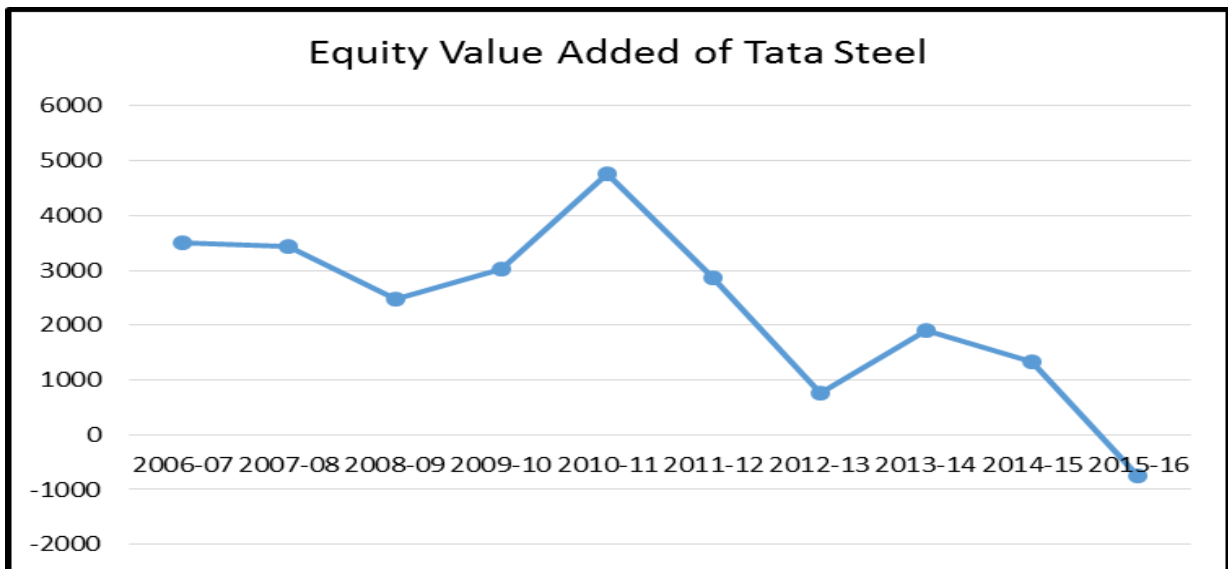
N Zafiris, R Bayldon, in his paper titled "Economic value added and market value added: A simple version and application, (1999)" illustrated the model by applying the proposed 'EVA' formula to a mixed set of accounting and stock market data from a sample of UK companies.

### **CASE STUDY OF TATA STEEL THROUGH EQUITY VALUE ADDED AND MARKET VALUE ADDED.**

**Table: 1 – Computation of Equity Value Added of Tata Steel**

Year	06-07	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16
PAT	4222.15	4687.03	5201.74	5046.8	6865.69	6696.4	5062.97	6412.19	6439.12	4900.95
Net worth	14096.2	27300.7	30176.3	36961.8	46944.6	52217	55209.7	61148	66663.9	70476.7
Average Net worth	11925.7	20698.4	28738.5	33569.1	41953.2	49581	53713.1	58178.9	63906	68570.3
FD Rate for one year (Risk free rate) <sup>3</sup>	0.06	0.06	0.095	0.06	0.05	0.0775	0.08	0.0775	0.08	0.0824
Net worth * Risk free rate of return	715.544	1241.91	2730.16	2014.14	2097.66	3842.5	4297.05	4508.86	5112.48	5650.19
Equity Value Added	3506.61	3445.12	2471.58	3032.66	4768.03	2853.9	765.922	1903.33	1326.64	-749.24

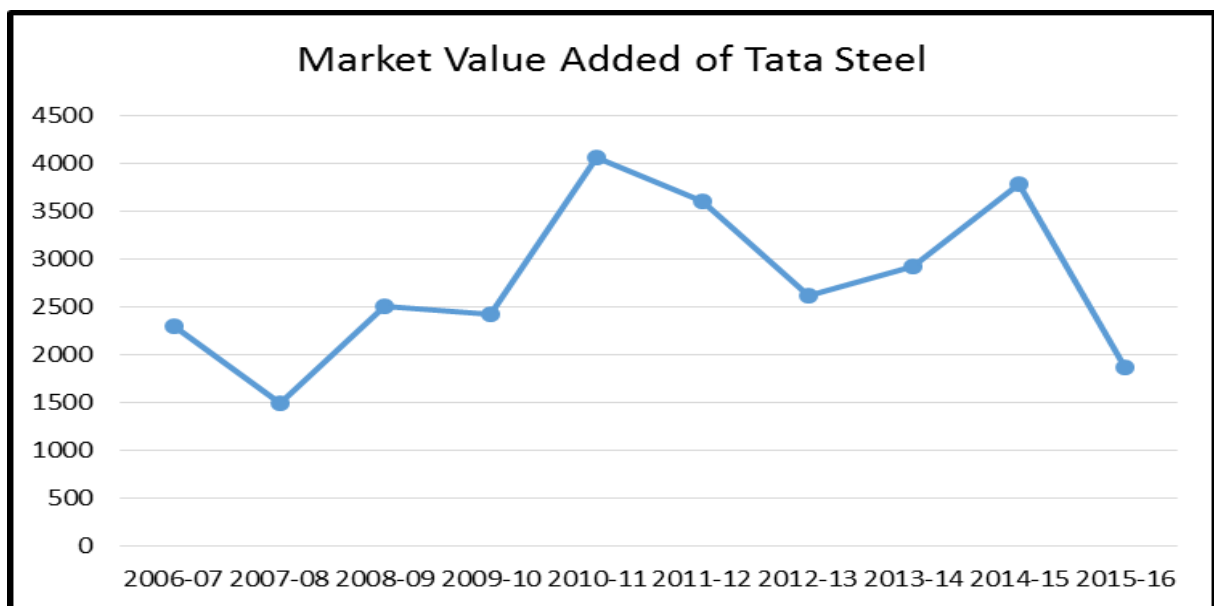
<sup>3</sup> FD rate of SBI as prevailing after date of Annual Results has been taken as risk free rate

**Chart 1: Trend of Equity Value Added of Tata Steel**

The Equity Value Added of Tata Steel which was growing since financial year 2006-07 and up to financial year 2010-11. Further, it is showing a declining trend after reaching its peak in financial year 2010-11. Again, it has become negative in financial year 2015-16. So now the Return on Equity of Tata Steel has been reduced from the Risk free rate of return.

**Table: 2 – Computation of Market Value Added of Tata Steel**

Year	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
PAT	4222.15	4687.03	5201.74	5046.8	6865.69	6696.42	5062.97	6412.19	6439.12	4900.95
Market price per share <sup>4</sup>	550.5	726.8	388.6	492.4	585.2	410.3	314.6	462.55	341.3	379.55
Number of Equity Shares	58.047	73.058	73.059	88.741	95.941	97.121	97.121	97.121	97.121	97.121
Market value of shares <sup>5</sup>	31954.9	53098.6	28390.7	43696.1	56144.7	39848.7	30554.3	44923.3	33147.4	36862.3
Market value of shares * risk free rate of return	1917.29	3185.91	2697.12	2621.76	2807.23	3088.28	2444.34	3481.56	2651.79	3037.45
Market Value Added	2304.86	1501.12	2504.62	2425.04	4058.46	3608.14	2618.63	2930.63	3787.33	1863.5

**Chart 2: Trend of Market Value Added of Tata Steel**

<sup>4</sup> Market price per share as prevailing one day after declaration of result has been taken.

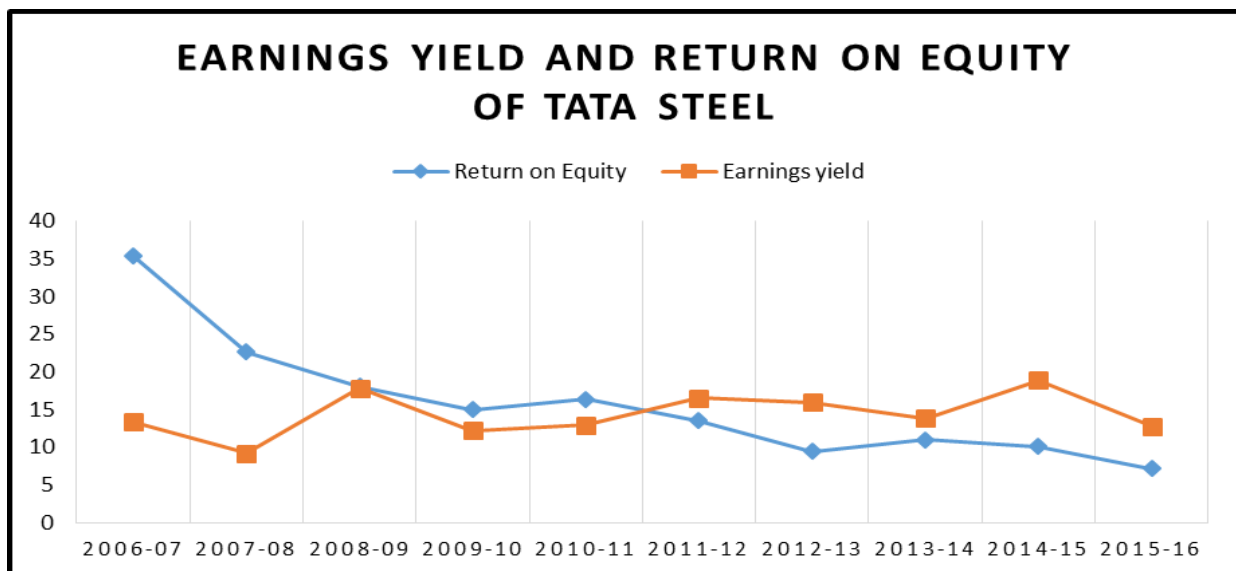
<sup>5</sup> Market value of shares is also called Market Capitalisation.

The Market Value Added of Tata Steel is showing a haphazard trend and somewhat growing since financial year 2006-07. However, since, financial year 2014-15 and onwards, it is showing a declining trend. Very surprisingly, now the fear of the investors is turning out into greed.

**Table: 3 – Table showing P/E Ratio, Return on Equity and Earnings Yield of Tata Steel**

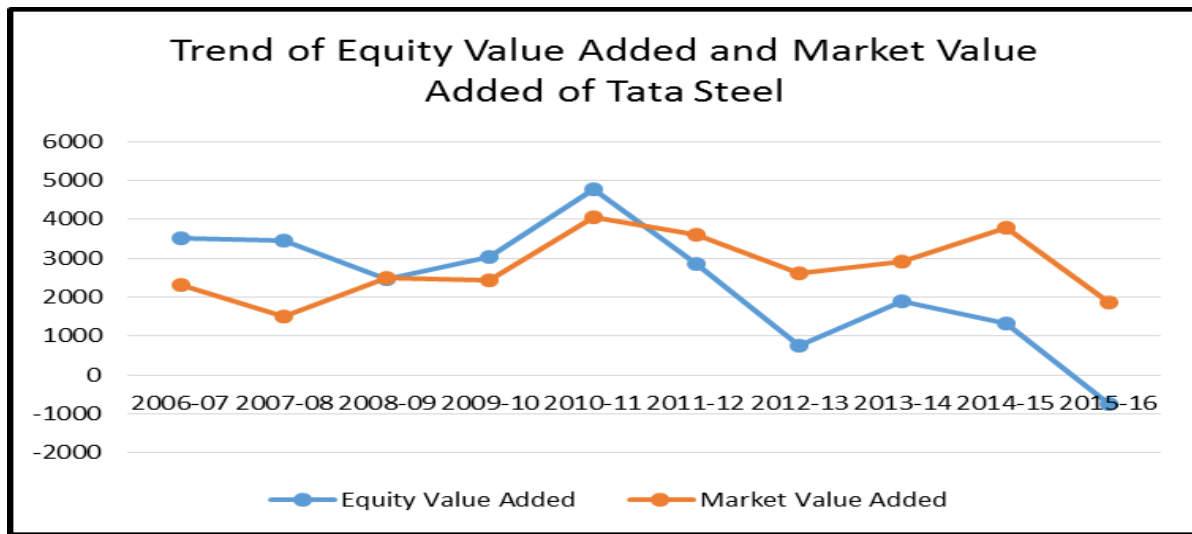
Year	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Earnings per share	73.76	67.17	69.45	60.26	75.63	67.84	50.28	64.21	64.49	48.67
P/E Ratio	7.4634	10.8203	5.59539	8.17126	7.73767	6.04805	6.25696	7.20371	5.29229	7.79844
Return on Equity	35.4037	22.6444	18.1002	15.0341	16.3651	13.506	9.42595	11.0215	10.0759	7.14734
Earnings yield	13.3987	9.24188	17.8718	12.238	12.9238	16.5342	15.9822	13.8817	18.8954	12.8231

**Chart 3: Trend of P/E Ratio, Return on Equity and Earnings Yield of Tata Steel**



The Return on Equity of the Tata Steel is consistently declining since financial year 2006-07 and Earnings yield is following the just reverse trend, however, in a haphazard way.



**Chart 4: Trend of Equity Value Added and Market Value Added of Tata Steel**

Up to financial year 2010-11, both Equity value added and Market value added is following the same increasing trend. For a better investment opportunity, following three conditions should be satisfied:

The Equity Value Added of the company should be growing consistently

The Equity Value Added as well as Market value added both should be positive and

Equity Value Added cuts Market Value Added from below

The Equity Value Added of the Company was growing up to financial year 2010-11 and so feasible investment opportunity was available only up to financial year 2010-11. As far as the second condition is concerned, both are positive right from 2006-07 to 2014-15. And finally, the Equity Value Added cuts Market Value Added from below, which only happened somewhat in financial year 2008-09. So best timing for entering into Equity shares of Tata Steel was only financial year 2008-09, when all three conditions are satisfying. In this year the Company has maintained lowest P/E ratio of 5.59 and highest Return on equity of 17.23% and highest Earnings Yield of 17.87%. However, the bestselling point is during year 2010-11 to year 2011-12, when Equity Value Added is cutting Market Value Added from above.

## CONCLUSIONS

Equity Value added shows return generating capacity of a company on its net worth in excess of Risk free rate of return. So positive Equity Value added creates value for its shareholders. Conversely, if Equity Value added is negative, it erodes the value of its shareholders, since profit generated by the company is not sufficient even to cover risk free rate of return on its Equity. However, Market Value Added is one of the tools that signify whether it is worth buying the shares of a company or not. If Equity Value added is growing and positive and further the Market Value added is more than Equity Value added, the shares are undervalued and gives a buy signal. When Equity Value Added is falling but lying above the Market value added, it gives a sell signal.

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