



FINANCIAL PERFORMANCE EVALUATION OF LISTED OIL DRILLING AND EXPLORATION COMPANIES IN BOMBAY STOCK EXCHANGE (BSE) BASED ON ECONOMIC VALUE ADDED (EVA)



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ABSTRACT:

Economic value added (EVA) is a modern measure of financial performance evaluation of a company based on the residual wealth calculated by deducting its cost of capital from its operating profit, adjusted for taxes on a cash basis (Investopedia.com, 2016). The purpose of this paper is to calculate EVA of select oil drilling and exploration companies listed on Bombay Stock Exchange (BSE) between 2007 and 2016. The required data for calculation of EVA of select companies were obtained from the financial statements of the companies. This study uses descriptive statistics for analysis of data. This study evidenced that sample company created shareholders' value for the period from 2007 to 2016. Moreover, the overall trend of mean EVA showed a fluctuated trend during the period of the study which supports the cyclical behaviour of EVA in oil drilling and exploration companies during the period under study. Finally, the results of the study also discovered that among sample companies, Oil and Natural Gas Corporation (ONGC) had the best financial performance in terms of value creation through EVA during the period of the study.

KEY WORDS: - EVA, financial performance, oil drilling and exploration companies, BSE, India.

INTRODUCTION:

In recent years, corporates have considered maximizing shareholders wealth as their primary objectives. The shareholders and investors wealth are calculated in terms of returns generated from their investments. Economic value added is a value-based measure for evaluating the financial performance of corporates based upon the residual wealth measured by deducting its cost of capital from its operating profit, adjusted for taxes on a cash basis (Investopedia.com, 2016).

EVA was developed and introduced by Stern Stewart & Co, is used to eliminate the limitations of accounting-based metrics of performance evaluation and can also be stated as economic profit which aims at capturing the true economic profit of a firm (Joibary & Nagaraja, 2012).

EVA is the incremental difference in the rate of return on a company's cost of capital. Essentially, it is used to measure the value a company generates from funds invested in it. If a company's EVA is negative, it means the company is not generating value from the funds invested in the business. Conversely, a positive EVA shows a company is producing value from the funds invested in it (Investopedia.com, 2016).

This study attempts to calculate the Economic Value Added (EVA) of select oil drilling and exploration companies listed on Bombay Stock Exchange (BSE) and comparing the amount of value created by the individual company during 2007 to 2016.

STATEMENT OF THE PROBLEM

Critical role of Indian petroleum industry in the economic development of the country has fascinated attention of researchers, investors, economists, government and etc. As the largest proportion (around 65%) of the required oil of the country is imported, this proportion can be decreased only when Indian drilling and exploration companies perform outstandingly. The financial performance of these companies can be investigated through EVA, the new value-based method of evaluation, in order to show how much value has been created by these companies.

RESEARCH OBJECTIVES

The main objective of this study is to evaluate the financial performance of selected oil drilling and exploration companies in India.

The specific objectives are:

- To present the concept of Economic Value Added (EVA) as a market-based value measure;
- To calculate the Economic Value Added (EVA) of selected oil drilling and exploration companies listed on Bombay Stock Exchange (BSE) between 2007 and 2011; and
- To study the trends in Economic Value Added (EVA) of selected oil drilling and exploration companies.

RESEARCH QUESTIONS

Based on the objectives of the study, the research questions of the study are:

- 1) Do Indian oil drilling and exploration companies create any EVA? If yes, to what extent?
- 2) Does financial performance of oil drilling and exploration companies behave cyclically?

SIGNIFICANCE OF THE STUDY

In recent year's huge capital have been invested in petroleum industry due to the critical role of this sector in the economic development of the country and its impacts on other Indian industries. Additionally, only a few types of research may have examined the financial performance of this sectors' firms based on economic value added. Therefore, evaluation of the financial performance of this sectors' firms has absorbed the attention of economists, researchers, investors, State, and Central government, etc.

SCOPE OF THE STUDY

The scope of this study is limited to eight oil drilling and exploration companies including Oil and Natural Gas Corporation (ONGC), GAIL India, Indraprastha Gas (IGL), Gujarat State Petronet, Jindal Drilling Industries, Selan Exploration Technology, Petronet LNG and Deep Industries over a period of 10 years from 2007. The required data was obtained from annual reports and financial statements of the selected oil drilling and exploration companies through Moneycontrol website.

LITERATURE REVIEW

George R. (2005) investigated the complication of EVA in 21 Indian commercial banks consisting of eight public sector banks and thirteen private sector banks for a period of two years from 2001. The required data for the study was collected from Capital Market Publisher Ltd database. The main purposes of this study were to calculate the EVA; to evaluate the relationship between EVA and non-performing assets; and the relationship between employee productivity and EVA. To test the hypotheses Mann-Whitney U test (a Non-parametric test) was conducted, moreover correlation was used to measure the magnitude of the relationship between two variables. This study discovered that Indian banks are improving their performance in EVA and making the profit as well. Moreover, both private and public sectors banks created

shareholder's value. Finally, this study also evidenced that there is a positive relationship between productivity and EVA, and a negative relationship between non-performing assets and EVA.

Rana Amisha S. (2011) prepared a thesis on shareholder value creation in the Automobile Industry in India. The two automobile industries namely, Tata Motorist. And Mahindra and Mahindra have been selected covering a period of 2003-04 to 2007-08. The study found that both the companies have negative EVA during the study period. It means that both the companies would not be able to create any wealth for their shareholders because of several reasons i.e. higher cost of capital, sometimes more than one beta in both the companies and the proportion of profit which is lower than the proportion of the increase in the capital.

Vijayakumar (2012) conducted an empirical analysis of EVA and some of the traditional performance indicators in 20 automobile companies in India from 1996 to 2008. The secondary data for the study was collected from PROWESS database, CMIE database and annual reports of the companies under the study. Various statistical tools such as Descriptive statistics, Kurtosis factor analysis and multiple regression used for analysis of data. This study evidenced that 53% to 76% of the selected companies created negative EVA after 2006. The results of factor analysis revealed that three extracted variables out of eight variables, put together could explain about 70% of total variance. The multiple regression analysis results revealed that four variables namely EPS, Sales, MVA and PAT better describe the EVA.

Rajesh Patel and Mitesh Patel (2012) examined shareholder value in the terms of Economic Value Added of selected private sector banks and its impact on share price. The study utilized data from seven private sector banks from 2004-05 to 2009-10. The data analysis was carried out by adopting descriptive statistics, correlation and regression analysis. It was concluded that the correlation between EVA and stock price for Kotak Mahindra Bank was somewhat positive where the correlation between EVA and market value of Axis Bank, HDFC Bank, ICICI Bank, ING Vyasaya Bank, Indusland bank and Karnataka Bank was negative.

M. Rajesh, Ramana Reddy and T. Narayana Reddy (2012) presented empirical study focused on new innovative corporate financial metrics EVA and MVA. It was examined that financial performance of ten selected cement industries in India and rank them based on their EVA and MVA. The ten years study period has been covered (2001-02 to 2010-11). The data was analyzed with the help of mean, variance, standard deviation and coefficient of variance. By using the coefficient of correlation between EVA and MVA, it was proved that ACC Ltd and Grasim Cements Ltd. we're having a satisfactory performance with consistent returns to the shareholders. The EVA and MVA are a relative performance to measure the performance of the company.

Pratapsinh Chauhan (2012) studied the shareholder's value creation in Indian Petroleum Industry. The seven companies in those three public sectors and four private sectors had been selected for the period of ten years (2001-02 to 2010-2011) for the purpose of the study. For the empirical analysis EVA, MVA, NOPAT, PAT, Market Capitalization and EPS data were used and for analysing the trend and growth of value addition in terms of EVA and MVA in petroleum industry, statistical tools like mean, standard deviation, correlation, chi-square test and T-test were used for analysing the financial data of sample petroleum firms. From the analysis, it was observed that both public and private petroleum industries revealed positive EVA and MVA. The researcher found that the performance of both the petroleum industry was satisfactory during the study period and the private sector petroleum firm's trend of EVA and MVA was higher than public sector petroleum firm.

Naghshbandi, Chouhan, and Jain (2016) evaluated EVA and some traditional performance measures in ten selected companies of different sectors in BSE and NSE by using Convenience Sampling. The required data was collected from companies' annual reports between 2007 and 2011. Different statistical tools and techniques such as F test, T-test, Chi-square test, Correlation, Regression, ANOVA, Balance scorecard, CFROI and Cash Value Added were used for analysis of data. This study revealed that in spite of different accounting measures, there is a significant difference in disclosing the selected items for the selected

companies under study. Moreover, CA's and accounting experts should consider the disclosure of non-financial items in annual reports and make necessity guidelines available for disclosure.

RESEARCH DESIGN

This section presents information concerning population, sampling and methods of data collection, hypothesis testing and model specification.

➤ *Statistical Society and Sample*

Statistical society of this study includes sixteen oil drilling and exploration companies listed on Bombay Stock Exchange (BSE). The sample size of this study consists of eight oil drilling and exploration companies based on the availability of data and the company's income¹ over the period of 10 years from 2007. The sample companies under the study are Oil and Natural Gas Corporation (ONGC), GAIL India, Indraprastha Gas (IGL), Gujarat State Petronet, Jindal Drilling Industries, Selan Exploration Technology, Petronet LNG and Deep Industries. The sample suggests a suitable way to evaluate the financial performance of oil drilling and exploration companies based on EVA by providing 50% of the population of listed oil drilling and exploration companies on BSE.

➤ *Methods of data collection and information*

The present study used secondary data. The required financial information of sample companies extracted from annual reports and financial statements of sample companies. The companies' financial statements have been obtained from "Moneycontrol" and companies' official websites as well. Additionally, the sample period spans 10 years, from 2007 to 2016.

➤ *Methods of Data Analysis*

This paper has used a descriptive statistic method for answering the research questions and determination of value creation by the sample companies.

➤ *Calculation of Economic Value Added (EVA)*

Economic Value Added (EVA) is a value-based financial performance measure that determines the true economic profit of an enterprise. Moreover, EVA is the performance measure most directly linked to the creation of shareholders wealth over time (Shil, 2009)¹¹. The present study calculated EVA as follow:

$$EVA = NOPAT - (WACC \times IC);$$

Where:

$$NOPAT = \text{Net Operating Profit after Taxes} = EBIT \times (1 - \text{Tax Rate})$$

$$IC = \text{Invested Capital}$$

$$WACC = \text{Weighted Average Cost of Capital} = (k_e \times W_e) + (k_p \times W_p) + (k_d (pt) [1 - t] \times W_d)$$

Where:

$$k_e = \text{Cost of Common Equity Capital} = (\text{Dividends per share} / \text{Price per share in beginning year}) + \text{growth rate}$$

$$W_e = \text{Percentage of common equity in the capital structure, at market value}$$

$$k_p = \text{Cost of preferred equity} = \text{Dividends per Share} / \text{Price per Share in the beginning of year}$$

$$W_p = \text{Percentage of preferred equity in the capital structure, at market value}$$

¹Sample companies under this study should not have a negative net income, negative EBIT, and negative NOPAT.

k_d (pt) = Cost of debt (pretax) = interest expense / debt

t = Tax rate

Wd = Percentage of debt in the capital structure, at market value

This study calculates the cost of equity (Ke) by using the Dividend Discount Model (DDM). Dividend Discount Model (DDM) is company valuing method based on the theory that a stock is worth the discounted sum of all of its future dividend payments.

ANALYSIS, INTERPRETATION AND FINDINGS

The Statistical Package for Social Sciences (SPSS) was used to analyse the data. This section provides a year-wise descriptive statistical analysis of EVA for all sample companies and individual companies as well. The EVA for all the sample companies has been calculated in Indian rupees in order to make comparison among the companies and make the analysis easier.

➤ *Descriptive Statistic of EVA for the sample companies Individually*

Table 1 shows the amount of EVA created per share by each individual company along with the average of EVA per share during the period of the study for individual companies. According to the table 2, all selected oil drilling and exploration companies have created positive EVA for their shareholders in all the years under study except in 2016. Moreover, Oil and Natural Gas Corporation (ONGC) created the highest amount of EVA for their shareholders by mean EVA value of 46.17 during the period of the study. In a descending order Jindal Drilling, IGL, GAIL, Petronet LNG were the second to fifth oil drilling and exploration companies by creating positive EVA value of 34.57, 16.49, 13.13 and 6.41 respectively. And Gujarat State Petronet, Deep Industries and Selan Explore are sixth to eighth oil drilling and exploration companies by creating negative EVA value of -0.70, -8.09 and -12.57 respectively.

Table 1
EVA of Selected Oil Drilling and Exploration Companies Individually

Name of the Company	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2007-16 AVG
ONGC	65.99	59.24	60.71	71.96	35.63	49.31	39.37	41.56	30.07	7.85	46.17
GAIL	24.54	24.4	21.65	11.97	23.84	-11.31	-4.2	4	21.94	14.47	13.13
IGL	9	10.72	11.04	14.43	16.97	17.62	20.41	21.96	28.08	14.71	16.49
GUJ. ST.PET.	-1.3	-2.25	-1.81	2.35	2.33	1.49	0.45	-2.38	-2.88	-3.03	-0.70
Jindal Drilling	16.46	12.22	32.01	73.09	87.26	43.77	50	32.43	26.05	-27.6	34.57
Selan Explore	-1.67	-2.74	12.27	-7.89	-10.12	-10.21	-12.78	-17.23	-31.7	-43.61	-12.57
Petronet LNG	3.07	4.54	5.48	3.35	5.93	11.74	13.3	6.88	7.52	2.33	6.41
Deep Ind.	-4.29	-5.02	-5.29	-3.77	-7.4	-9.54	-11.82	-10.84	-11.28	-11.63	-8.09

*Numbers are per share and in rupees

➤ *Descriptive Statistic of EVA for all Sample Companies (Pooled Analysis)*

Table 2 presents the descriptive statistic results of EVA per share for all sample companies from 2007 to 2016.

Table 2
Descriptive Statistic of EVA in Selected Oil Drilling and Exploration
Companies listed on BSE (Pooled Analysis)

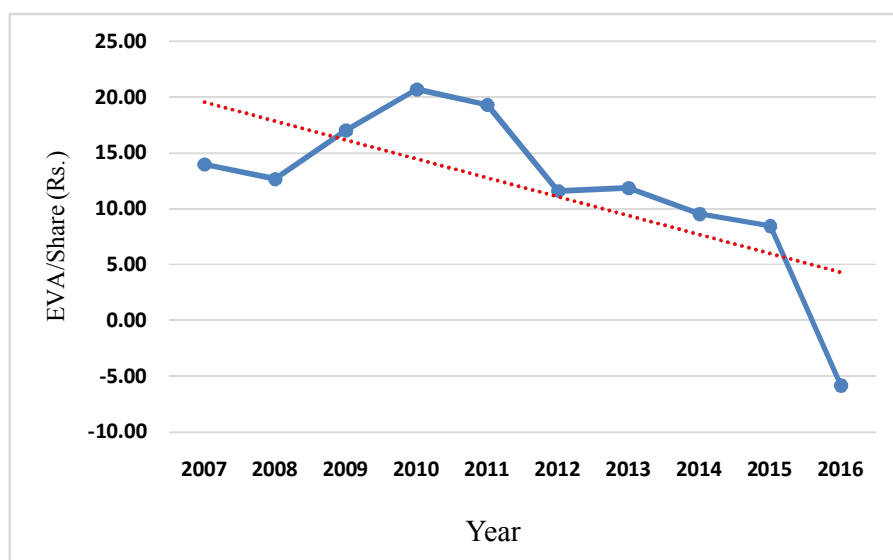
Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2007-2016
Mean	13.98	12.64	17.01	20.69	19.31	11.61	11.84	9.55	8.48	-5.81	11.93
Std Error	8.21	7.50	7.56	11.60	11.15	8.50	8.28	7.34	7.88	7.36	2.70
Median	6.04	7.63	11.66	7.66	11.45	6.62	6.88	5.44	14.73	-0.35	7.2
Std Deviation	23.23	21.21	21.38	32.82	31.52	24.03	23.43	20.75	22.28	20.81	24.13
Range	70.28	64.26	66	80.98	97.38	60.62	62.78	58.79	61.77	58.32	130.87
Min	-4.29	-5.02	-5.29	-7.89	-10.12	-11.31	-12.78	-17.23	-31.7	-43.61	-43.61
Max	65.99	59.24	60.71	73.09	87.26	49.31	50	41.56	30.07	14.71	87.26

*Numbers are in rupees.

According to this table, average EVA of select oil drilling and exploration companies in 2007 is 13.98 with the minimum and maximum -4.29 and 65.99 respectively. In 2008, the average EVA is 12.64 with the minimum and maximum -5.02 and 59.24 respectively. EVA in 2009 ranges from -5.29 to 60.71 with an average value of 17.01. In 2010, EVA has a minimum value of -7.89 and a maximum value of 73.09 and standard deviation of 32.82. In 2011, the mean EVA is 19.31, with the minimum and maximum -10.12 and 87.26 respectively. The results of descriptive statistic also discovered that in 2012 the average EVA is 11.61 with the minimum and maximum -11.31 and 49.31 respectively. EVA in 2013 ranges from -12.78 to 50 with an average value of 11.84. In 2014, EVA has a minimum value of -17.23 and a maximum value of 41.56, the mean EVA is 9.55. In 2015, the mean EVA is 8.48, with the minimum and maximum -31.7 and 30.07 respectively. The minimum and maximum of EVA in 2016 ranges from -43.61 to 14.71 with an average value of -5.81. The mean Economic Value Added (EVA) throughout the ten year period is 11.93 with the minimum and maximum -43.61 and 87.26 respectively. Additionally, the deviation from the average EVA is 24.13.

Figure 1 shows the mean EVA per share in oil drilling and exploration companies under study between the years 2007 and 2016. As an overall trend, the mean EVA has decreased during the period under study, and it fluctuated between -43.61 and 87.26. Therefore, EVA behaves cyclically in oil drilling and exploration companies during the period under study as shown in the following the figure.

Figure 1: Mean EVA Created by Oil Drilling and Exploration Companies



CONCLUSION OF STUDY

Overall, from the inferences of the results of the study, it was discovered that the average EVA for 62.5% sample companies was positive and 37.5% sample companies was negative which means these companies have created shareholders' value for the period from 2007 to 2016. Moreover, the overall trend of mean EVA showed a fluctuated trend during the period of the study which supports the cyclical behaviour of EVA in oil drilling and exploration companies during the period under study. The results of this study is consistent with findings of George R. (2005), M. Rajesh, et. al. (2012), Pratapsinh Chauhan (2012) and Naghshbandi, et. al. (2016), however it was inconsistent with the findings of Rana Amisha S. (2011), Vijayakumar (2012) and Rajesh Patel and Mitesh Patel (2012). Finally, the results of the study also discovered that ONGC had the best financial performance in terms of value creation through EVA during the period of the study.

REFERENCE

1. George, R. (2005). Computation of EVA in Indian Banks. *The IUP Journal of Bank Management*, 4(2), 30-44.
2. <https://www.investopedia.com/terms/e/eva.asp>
3. Joshi, S. (2011). Relationship between EVA, MVA and other accounting measures of fertilizer companies in India. *International Journal of Research in IT and Management*, 1, 1-14.
4. M. Rajesh, Dr. NRV Ramana Reddy & Dr. T. Narayana Reddy (2012), An empirical study of EVA and MVA approach, *International Journal of Marketing, Financial Services & Management Research*, Vol. 1, No. 3, pp 87-97.
5. Naghshbandi, N., Chouhan, V., & Jain, P. (2016). Value based measurement of financial performance. *International Journal of Applied Research*, 2(2), 365-369.
6. Patel, R. J., & Patel, M. (2012). Impact of Economic value added (EVA) on Share price: A study of Indian Private Sector banks.
7. Pratapsinh Chauhan (2012), Shareholder's Value creation in Indian Petroleum Industry: An Empirical Analysis, *International Conference on Business, Economics, Management and Behavioural Sciences*, January 7-8, 2012, Dubai, pp483-486.
8. Rajesh Patel & Mitesh Patel (2012), Impact of Economic Value Added (EVA) on share price: A study of Indian private sector banks, *International Journal of Contemporary Business Studies*, Vol. 3, No. 1, pp 24-34.
9. Rana Amisha S. (2011), Share Holders Value Creation in the Automobile Industry in India, *Ph.D. Thesis, Saurashtra University*.
10. Shil, N. C. (2009). Performance measures: An application of economic value added. *International Journal of business and Management*, 4(3), 169.
11. Vijayakumar, A. (2012). Economic value added (EVA) and other accounting performance indicator: An empirical analysis of Indian automobile industry. *International Journal of Marketing and Technology*, 2(3), 131.



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