



A Study of Economic Value Added (EVA) & Market Value Added (MVA) of Hindustan Petroleum Corporation Limited

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Abstract: This study shows the importance of analysis of financial performance of Public Sector Undertaking. The concept of economic value added was given by the Stern Stewart & Co. in order to measure the surplus value created by investment in 1991. EVA is a modern technique to evaluate the financial performance of an entity. MVA is the sum total of all present values of future EVAs. This study measure the impact of liquidity, profitability and solvency on Economic Value Added and Market Value Added of Hindustan Petroleum Corporation Limited. This study is based on the secondary sources of data. The financial data of fifteen years of the HPCL has been taken for an appropriate analysis and interpretation of data to get conclusion for the present study as well as to forward the suggestions for the greater interest of the stakeholders. The independent variables of the study are current ratio, liquid ratio, gross profit ratio, net profit ratio, debt-equity ratio and interest coverage ratio. On the other hand economic value added and market value added are considered as dependent variables. In this study, researcher has used simple regression analysis on SPSS. It is concluded that gross profit ratio, net profit ratio, debt equity ratio and interest coverage ratio have a statistically significant influence on economic value added except liquidity ratios. The MVA was not found satisfactory during the study period. High fluctuations were recorded in MVA.

Keywords: EVA, MVA, WACC, NOPAT & Capital Employed

JEL code: A11, G14, L11, M21



1. Introduction

In the era of 21 century, thousands of companies are hunting to create wealth of the shareholders, on the other hand, many companies are failed to create the same (Grant 2003). Wealth creation is the essential part for the survival of the company. Otherwise, company will have lost their image in the eyes of the shareholders (Panigrahi et. Al 2014). Economic value added and market value added are considered as essential principle for the evaluation of company performance in terms of return of shareholders. It measures the true economic performance of a company. Moreover, it plays a vital role for making the strategy for the creation of the wealth of the shareholders. The annual sales of HPCL was recorded Rupees (Rs.), 217061 crores in the year financial year 2014-15. And, HPCL secures the 20 per cent market share of the public sector undertakings of India. The same company operates two refineries which is producing different variety of petroleum fuels. One of the refinery at Mumbai (West Coast) has a capacity of 6.5 million metric tonnes per annum. On the other hand, the refinery of Vishakapatnam (East Coast) has an ability to produce 8.3 million metric tonnes per annum. Moreover, HPCL refinery has an ability to produce 9 million metric tonnes per annum at Bathinda in Punjab with the joint venture of Mittal Energy Investment Private Limited.

Economic Value Added

In the era of 21st century, economic value added plays a significant role for assessing the financial position of the business entity in an effective manner. This term first time used by Stern Stewart & Co. to examine that the surplus value is created through this or not. Before this traditional methods were used. This method taken into account return on investment and return on assets. The positive EVA sends the sign wealth creation for the shareholders (Sharma & Gupta 2014).

$$\text{EVA} = \text{NOPAT} - (\text{WACC} \times \text{Capital Employed})$$

Weighted Average Cost of Capital

It indicates the average costs of capital of different sources of finances are used in the business entity.

$$\text{WACC} = \frac{\sum XW}{\sum W}$$

Where,

X = Cost of specific source

W = Proportion of specific source

Net Operating Profit after Tax

It designates the difference between EBIT and adjusted tax. The adjusted tax means cash taxes paid with tax advantage on interest. In other words, NOPAT worked as an instrument which is measured that part of the profit that excludes the costs and tax benefits of debt financing.

$$\text{Adjusted Tax} = \text{Cash Taxes Paid} + \text{Tax Advantage on Interest}$$

Capital Employed

The capital employed is the combination of fixed as well as current assets which are used in the enterprise.

Market Value Added

It is a calculation that shows the difference between the market value of a company and capital contributed by the investors. And, it indicates the sum of all capital claims held against the company plus the market value of debt and equity.

$$\text{MVA} = \frac{\text{EVA1}}{(1+C)1} + \frac{\text{EVA2}}{(1+C)2} + \frac{\text{EVA3}}{(1+C)3} \dots \dots \dots \frac{\text{EVAn}}{(1+C)n}$$

2. Objectives of the Study

- [1] To examine the impact of liquidity, profitability and solvency on Economic Value Added of HPCL.
- [2] To measure the impact of liquidity, profitability and solvency on Market Value Added of HPCL.

3. Review of Literature

Lehn and Makhija (1996) found that positive correlation of EVA and MVA with stock returns. And, they found better correlation of EVA and MVA with stock returns in comparison with traditional indicators of financial evaluation.

Milunovich and Tsuei (1996) submitted high association in a market value added with economic value added than earning per share, earning per share growth and return on equity. **Byrne** (1996) examined the relationship between market value and economic value added and net operating profit

after tax (NOPAT). He has unveiled that EVA and NOPAT had similar explanatory power when no control variables were included in the regression models.

Uyemura, Kantor and Petit (1996) have revealed strong association between MVA and EPS, NI, ROE and ROA. **Biddle, Bowen and Wallace** (1997) found that traditional accounting measures outperformed EVA in explaining stock returns. **Lehn and Makhija** (1997) found that economic value added and market value added are positively correlated with stock returns. **Kangarlouei, Azizi, Farahani and Motavassel** (2012) found that Refine Economic Value Added (REVA) and Market Value Added has more correlation than Economic Value Added and other indices of traditional financial performance measurement during the study period of 2005-2010. **Khan, Chouhan, Chandra and Goswami, S.** (2012) examined the EVA of the listed companies creating value of shareholders. Moreover, profitability, net worth (size), sales growth influence on EVA is checked. It was found that EVA and MVA both are proactive approach which provides the indication of the value of shareholders earned. **Chauhan** (2012) recommended that EVA and MVA are considered effective indicator of shareholder value creation. **Bhanuben N. Parmar 2015** examined the trend of EVA and computed the same. He has found negative EVA during the study period of cement industry. **Kumar & Subramanyam 2017** suggested that value analysis and value creation of a company is essential part for every financial manager in different situations. Therefore, it is critical to know whether modern techniques are supportive in creating value to the shareholders or not. This study found that EVA is the best superior measure for creating value to its shareholders in relation to stock market returns. **Panigrahi (2017)** discussed that traditional accounting measures and economic measures are failed to reflect a company's true value due to the lack of long term sustainability of a business concern. Researcher has found that shareholder wealth increased when there is an increment in the stock market value and efficiency.

4. Research Gap

This study reveals the relation between traditional and modern performance indicators. And, the same study also highlighted the impact of liquidity, profitability and solvency on shareholder's wealth.

Hypotheses of the Study

H₀1: There is no significant impact of liquidity, profitability and Solvency on Economic Value Added of Hindustan Petroleum Corporation Limited.

H₀1a: There is no significant impact of Current Ratio on Economic Value Added.

H₀1b: There is no significant impact of Liquid Ratio on Economic Value Added.

H₀1c: There is no significant impact of Gross Profit Ratio on Economic Value Added.

H₀1d: There is no significant impact of Net Profit Ratio on Economic Value Added.

H₀1e: There is no significant impact of Debt-Equity Ratio on Economic Value Added.

H₀1f: There is no significant impact of Interest Coverage Ratio on Economic Value Added.

H₀2: There is no significant impact of liquidity, profitability and Solvency on Market Value Added of Hindustan Petroleum Corporation Limited.

H₀2a: There is no significant impact of Current Ratio on Market Value Added.

H₀2b: There is no significant impact of Liquid Ratio on Market Value Added.

H₀2c: There is no significant impact of Gross Profit Ratio on Market Value Added.

H₀2d: There is no significant impact of Net Profit Ratio on Market Value Added.

H₀2e: There is no significant impact of Debt-Equity Ratio on Market Value Added.

H₀2f: There is no significant impact of Interest Coverage Ratio on Market Value Added.

5. Research Methodology

The data of the study is collected from published annual reports of the Hindustan Petroleum Corporation Limited, annual reports of the Ministry of Petroleum, CMIE Prowess, Ace Equity, NSE and BSE website. The independent variables of the study are current ratio, liquid ratio, gross profit ratio, net profit ratio, debt-equity ratio and interest coverage ratio. On the other hand economic value added and market value added are considered as dependent variables. In this study, researcher has used simple regression analysis on SPSS.

Table(1): Economic Value Added of HPCL

(Rs. in Crore)

Year	NOPAT (Rs.)	WACC (%)	Capital Employed (Rs.)	EVA (Rs.)
2000-01	140799.13	0.78	5702.3	136351.3
2001-02	116031.46	7.83	3633.38	87582.09
2002-03	178274.87	12.76	-335.12	182551
2003-04	226935.47	3.04	1495.51	222389.1
2004-05	145752.81	7.66	1770.21	132193
2005-06	53445.21	9.03	6543.58	-5643.32
2006-07	163018.06	6.11	9678.28	103883.8
2007-08	122757.71	5.25	13679.88	50938.34
2008-09	204019.10	3.85	21074.21	122883.4
2009-10	211812.34	7.09	16152.82	97288.85
2010-11	229975.99	5.34	13307.45	158914.2
2011-12	308900.29	5.97	12077.58	236797.1
2012-13	247772.91	4.89	18424.11	157679
2013-14	351085.04	4.97	18635.97	258464.3
2014-15	372634.95	6.33	1583.81	362609.4

Source: Calculation is based on annual reports of HPCL and website of NSE and BSE from 2000-01 to 2014-15

Interpretation

The above table demonstrate the Economic Value Added of HPCL from 2000-01 to 2014-15. It defines that the company has added value in the shareholder's wealth. The shareholders are the real owners of the company. In the very first year, it was found that company added Rs. 1,36,351.3 crores. In the next year, it reduced to Rs. 87,582.09 crores. It means that company added less value as compared to the previous year. After this year company again managed to add more value to its company by contributing Rs. 1,82,551 crores and Rs. 2,22,389.1 crores in the next two financial years. In the year 2004-05, the company's EVA reduced to Rs. 1,32,193 crores. Further in the next year, it was found that the EVA crossed to minus Rs.5,643.32 crores. It was not a healthy sign for the company. The last year of the study found high fluctuations in EVA. Moreover, in the year 2006-07, the company again added the value and contributed an EVA of Rs. 1,03,883.8 crores. Further, the economic value added reduced by Rs. 50,938 crores. And, in the year 2008-09 EVA again increases to Rs. 1,22,883.4 crores then it reduced to Rs. 97,288.85 in 2009-10. Thereafter, in the next two years it continuously increased. In the last three year EVA was recorded Rs.1,57,679, Rs.2,58,464.3 and 3,62,609.4 crores in the year 2012-13, 2013-14 and 2014-15 respectively. The highest EVA was recorded in the year 2014-15 at Rs. 3,62,609.4 crores.

Results of Hypotheses Testing

Table(2): Descriptive Statistics of EVA

Particulars	N	Mean	S.D. + or -
EVA	15	153658.67	90560.162

Source: Table 1.1 by using SPSS

The above table (2) highlights statistical interpretation of economic value added of HPCL from the year 2000-01 to 2014-15. It indicates that whether the company is contributing in the shareholder's wealth or not. Upon analysing the above table of descriptive statistics, it has been found that the mean value for economic value added is 153658.67. The standard deviation of economic value added is 90560.162. It depicts the variation from the mean value.

Table(3): Model Summary of EVA

Model		R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
I.V.	D.V.					
CR	EVA	.354 ^a	.126	.058	5.78802	1.234
LR	EVA	.220 ^a	.049	-.025	6.03766	1.273
GPR	EVA	.707 ^a	.499	.461	4.37945	1.939
NPR	EVA	.704 ^a	.496	.457	4.39538	1.723
DER	EVA	.835 ^a	.697	.674	3.40569	1.899
ICR	EVA	.936 ^a	.875	.866	2.18688	1.196

Source: Table ----- by using SPSS

a. Predictors (Constant): CR, LR, GPR, NPR, DER & ICR b. Dependent Variable: EVA

The above table (3) reveals the result of regression analysis which are used to determine the impact of CR and LR on EVA, GPR and NPR on EVA and DER and ICR on EVA. The correlation was recorded positive between CR – EVA, LR – EVA, GPR – EVA, NPR – EVA, DER – EVA and ICR – EVA with .354, .220, .707, .704, .835 and .936 respectively. It also show the results of regression analysis which are used to determine the impact of CR on EVA. The value of R^2 i.e. .126 which means that there is only 12.6 per cent variance in EVA which is explained by CR. It indicates that 87.4 per cent is unexplained. The results of regression analysis which are used to determine the impact of LR on EVA, the value of R^2 is .049 which means that there is only 4.9 per cent variance in ROI which is explained by LR. It highlights that 95.1 per cent is unexplained.

The above table highlights the result of regression analysis which are used to determine the impact of GPR on EVA. The value of R^2 i.e. .499 which means that there is only 49.9 per cent variance in EVA which is explained by GPR. It indicates that 51.1 per cent is unexplained. On the other hand, the results of regression analysis which is used to determine the impact of NPR on EVA. The value of R^2 is i.e. .496 which means that there is only 49.6 per cent variance in EVA which explained by NPR. It highlights that 51.4 per cent is unexplained. It also indicates the results of regression analysis which is used to determine the impact of DER on EVA. The value of R^2 i.e. .697 which means that there is only 69.7 per cent variance in EVA which explained by DER. It indicates that 30.3 per cent is unexplained. In the case of impact of ICR on EVA, the value of R^2 i.e. .875 which means that there is only 87.5 per cent variance in EVA which is explained by ICR. It indicates that 12.5 per cent is unexplained.

Table(4): Results of Regression Analyses Impact of Liquidity, Profitability & Solvency on EVA

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
CR- EVA	Constant	26.893	10.245	-.354	2.625	.021
	CR	-15.980	11.695		-1.366	.195
LR	Constant	17.347	5.510	-.220	3.148	.008

EVA	LR	-9.028	11.087		-.814	.430
GPR-	GPR	19.667	2.159	-.707	9.109	.000
EVA	Constant	-5.282	1.467		-3.601	.003
NPR-	NPR	10.376	1.358	.704	7.639	.000
EVA	Constant	.317	.089		3.575	.003
DER-	Constant	5.625	1.616	.835	3.481	.004
EVA	DER	2.740	.501		5.472	.000
ICR-	Constant	4.679	1.042	.936	4.489	.001
EVA	ICR	5.559	.582		9.547	.000

Source: Table ----- by using SPSS (a) Predictors (Constant): CR, LR, GPR, NPR, DER & ICR (b) Dependent Variable: EVA

The above table (4) highlights the results of Regression Analysis which reveal the impact of current ratio on economic value added. In the case of current ratio, the regression coefficient known as beta is equal to $-.354$. The regression coefficient or beta indicates that if one unit change takes place in current ratio it may change the economic value added by $-.354$. On the other hand, the intercept was recorded at 26.893 which mean that there are other factors which affect the EVA of the HPCL. Further, it was found that the significant value is $.195$ which is more than 0.05 . Hence, the impact of CR on EVA is insignificant. Therefore, the null hypothesis is accepted. Moreover, it is concluded that the current ratio has an influence on economic value added of the HPCL. In case of liquid ratio, the regression coefficient known as beta is equal to $-.220$. The regression coefficient or beta indicates that if, there is one unit change takes place in liquid ratio it may change the economic value added by $-.220$. On the other hand, the intercept was recorded at 17.347 which mean that there are other factors which affect the EVA of the HPCL. Further, it was found that the significant value is $.430$ which is more than 0.05 . Hence, the impact of LR on EVA is insignificant. Therefore, the null hypothesis is accepted. It is concluded that the liquid ratio has no impact on economic value added of the HPCL.

The above table 1.4 shows the results of Regression Analysis which reveal the impact of gross profit ratio on economic value added. In case of gross profit ratio, the regression coefficient known as beta is equal to $-.707$. The regression coefficient or beta indicates that if one unit change takes place in gross profit ratio it may change the economic value added by minus $.707$. On the other hand, the intercept was recorded at 19.667 which mean that there are other factors also affect the EVA of the HPCL. Further, it was found that the significant value is $.003$ which is less than 0.05 . Hence, the impact of GPR on EVA is significant. Therefore, the null hypothesis is rejected. Moreover, it is concluded that the gross profit ratio has an influence on economic value added of the HPCL. In case of net profit ratio, the regression coefficient known as beta is equal to $.704$. The regression coefficient or beta indicates that if one unit change takes place in net profit ratio it may change the return on asset by $.704$. On the other hand, the intercept was recorded to be -10.376 which mean that there are other factors which affect the EVA of the HPCL. Further, it was found that the significant value is $.003$ which is less than 0.05 . Hence, the impact of GPR on EVA is significant. Therefore, the null hypothesis is rejected. Moreover, it is concluded that the net profit ratio has an impact on return on asset of the HPCL.

The above table 1.4 depicts the results of Regression Analysis which reveal the impact of debt equity ratio on economic value added. In the case of debt equity ratio, the regression coefficient known as beta is equal to $.835$. The regression coefficient or beta indicates that if one unit change takes place in debt equity ratio it might have changed the return on equity by $.835$. On the other

hand, the intercept was recorded to be 5.625 which mean that there are other factors which affect the EVA of the HPCL. Further, it was found that the significant value is .000 which is less than 0.05. Hence, the impact of debt equity ratio on EVA is significant. Therefore, the null hypothesis is rejected. Moreover, it is concluded that the debt equity ratio has an influence on return on equity of the HPCL. In case of interest coverage ratio, the regression coefficient known as beta is equal to .936. The regression coefficient or beta indicates that if one unit change takes place in interest coverage ratio it may change the economic value added by .936. On the other hand, the intercept was recorded to be 4.679 which mean that there are other factors also affect the EVA of the HPCL. Further, it was found that the significant value is .000 which is less than 0.05. Hence, the impact of ICR on EVA is significant. Therefore, the null hypothesis is rejected. Moreover, it is concluded that the interest coverage ratio has an impact on economic value added of the HPCL.

Table(5): Market Value Added of HPCL

(Rs. in Crore)

Year	Market Capitalisation	Book Value of Equity & Reserve	Market Value Added
2000-01	5449.64	6486.27	-1036.63
2001-02	9859.23	5897.68	3961.55
2002-03	9982.52	6678.85	3303.67
2003-04	17209.12	7742.81	9466.31
2004-05	10327.51	8440.85	1886.66
2005-06	10853.47	8735.74	2117.73
2006-07	8408.59	9598.65	-1190.06
2007-08	8682.22	10563.29	-1881.07
2008-09	9136.46	10730.63	-1594.17
2009-10	10809.36	11557.97	-748.61
2010-11	12098.81	12545.81	-447
2011-12	10302.06	13122.52	-2820.46
2012-13	9677.69	13726.4	-4048.71
2013-14	10512.44	15012.16	-4499.72
2014-15	22049.66	16022.09	6027.57

Source: Calculation is based on annual reports of HPCL and website of NSE and BSE from 2000-01 to 2014-15

Interpretation

The table (5) reveals that the company has negative MVA of Rs. 1036.63 in the very first year of the study 2000-01. It indicates that the book value of equity is more than market value of HPCL. It raised the point of poor market performance of the company. In the next year, it was found that the company raised up the market value of Rs. 3961.55 crores. It indicates a healthy sign for the company. The data shows positive MVA in the year 2001-02, 2002-03, 2003-04, 2004-05 and 2005-06 with Rs. 3961.55, 3303.67, 9466.31, 1886.66 and 2117.73 crores respectively. In the year 2003-04, MVA was recorded highest during the study i.e. 9466.31 crores. Thereafter, data indicates the negative MVA till 2013-14, which is a negative sign for the company. The following 2006-07, 2007-08, 2008-09, 2009-10, 2010-11, 2011-12, 2012-13 and 2013-14 exhibit negative MVAs of Rs. 1190.06, 1881.07, 1594.17, 748.61, 447, 2820.46, 4048.71 and 4499.72 crores respectively. The last year of the study recorded a positive EVA at Rs. 6027.57 crores.

Results of Hypotheses Testing

Table(6): Descriptive Statistics of MVA

Particulars	N	Mean	S.D. + or -
MVA	15	566.470667	3870.2811843

Source: Table---by using SPSS

The above table (6) reveals statistical interpretation of economic value added of HPCL from the year 2000-01 to 2014-15. The figures indicate that whether the company is contributing to the

shareholder's wealth or not. After analyzing the above table for descriptive statistics, it has been found that the mean value for market value added is 566.470667. The standard deviation of market value added is 3870.2811843. It depicts a variation from the mean value.

Table(7): Model Summary of MVA

Model		R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
I.V.	D.V.					
CR	MVA	.354 ^a	.126	.058	5.78802	1.234
LR	MVA	.220 ^a	.049	-.025	6.03766	1.273
GPR	MVA	.707 ^a	.499	.461	4.37945	1.939
NPR	MVA	.704 ^a	.496	.457	4.39538	1.723
DER	MVA	.835 ^a	.697	.674	3.40569	1.899
ICR	MVA	.936 ^a	.875	.866	2.18688	1.196

Source: Table ---- by using SPSS

- Predictors (Constant): CR, LR, GPR, NPR, DER & ICR
- Dependent Variable: MVA

The above table (7) reveals the result of regression analysis which are used to determine the impact of CR and LR on MVA, GPR and NPR on MVA and DER and ICR on MVA. The correlation was recorded positive between CR – MVA, LR – MVA, GPR – MVA, NPR – MVA, DER – MVA and ICR – MVA with .354, .220, .707, .704, .835 and .936 respectively. It shows the results of regression analysis which are used to determine the impact of CR on MVA. The value of R^2 i.e. .126 which means that there is only 12.6 per cent variance in MVA which is explained by CR. It indicates that 87.4 per cent is unexplained. The results of regression analysis which are used to determine the impact of LR on MVA, the value of R^2 is .049 which means that there is only 4.9 per cent variance in ROI which is explained by LR. It highlights that 95.1 per cent is unexplained.

The above table highlights the results of regression analysis which are used to determine the impact of GPR on MVA. The value of R^2 i.e. .499 which means that there is only 49.9 per cent variance in MVA and is explained by GPR. It indicates that 51.1 per cent is unexplained. Further, the results of regression analysis are used to determine the impact of NPR on MVA. The value of R^2 is i.e. .496 which means that there is only 49.6 per cent variance in MVA which is explained by NPR. It highlights that 51.4 per cent is unexplained. It also indicates the results of regression analysis which are used in determining the impact of DER on MVA. The value of R^2 i.e. .697 which means that there is only 69.7 per cent variance in MVA which is explained by DER. It indicates that 30.3 per cent is unexplained. In the case of impact of ICR on MVA, the value of R^2 i.e. .875 which means that there is only 87.5 per cent variance in MVA which is explained by ICR. It indicates that 12.5 per cent is unexplained.

Table(8): Results of Regression Analyses Impact of Liquidity, Profitability & Solvency on MVA

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig. Value
		B	Std. Error	Beta		
CR-MVA	Constant	26.893	10.245	-.354	2.625	.021
	CR	-15.980	11.695		-1.366	.195
CR-	Constant	17.347	5.510	-.220	3.148	.008

MVA	LR	-9.028	11.087		-.814	.430
GPR-MVA	GPR	19.667	2.159	-.707	9.109	.000
	Constant	-5.282	1.467		-3.601	.003
NPR-MVA	NPR	10.376	1.358	.704	7.639	.000
	Constant	.317	.089		3.575	.003
DER-MVA	Constant	5.625	1.616	.835	3.481	.004
	DER	2.740	.501		5.472	.000
ICR-MVA	Constant	4.679	1.042	.936	4.489	.001
	ICR	5.559	.582		9.547	.000

Source: Table -----by using SPSS

The above table (8) highlights the results of Regression Analysis which reveal the impact of current ratio on market value added. In the case of current ratio, the regression coefficient known as beta is equal to $-.354$. The regression coefficient or beta indicates that if there is one unit change takes place in current ratio it may have change the market value added by $-.354$. On the other hand, the intercept was recorded to be 26.893 which mean that there are other factors which affect the MVA of the HPCL. Further, it was found that the significant value is $.195$ which is more than 0.05 . Hence, the impact of CR on MVA is insignificant. Therefore, the null hypothesis is accepted. Moreover, it is concluded that the current ratio has an influence on market value added of the HPCL. In case of liquid ratio, the regression coefficient known as beta is equal to $-.220$. The regression coefficient or beta indicates that if one unit change takes place in liquid ratio it may change the market value added by $-.220$. On the other hand, the intercept was recorded at 17.347 which mean that there are other factors which affect the MVA of the HPCL. Further, it was found that the significant value is $.430$ which is more than 0.05 . Hence, the impact of LR on MVA is insignificant. Therefore, the null hypothesis is accepted. So, it is concluded that the liquid ratio has no impact on market value added of the HPCL.

The above table 1.8 shows the results of Regression Analysis which reveal the impact of gross profit ratio on market value added. In the case of gross profit ratio, the regression coefficient known as beta is equal to $-.707$. The regression coefficient or beta indicates that if, there is one unit change took place in gross profit ratio it may have changed the market value added by minus $.707$.

On the other hand, the intercept was recorded to be 19.667 which mean that there are other factors also which affect the MVA of the HPCL. Further, it was found that the significant value is $.003$ which is less than 0.05 . Hence, the impact of GPR on MVA is significant. Therefore, the null hypothesis is rejected. Moreover, it is concluded that the gross profit ratio has an influence on market value added of HPCL. In case of net profit ratio, the regression coefficient known as beta is equal to $.704$. The regression coefficient or beta indicates that if one unit change takes place in net profit ratio it may change the return on asset by $.704$. On the other hand, the intercept was recorded at -10.376 which mean that there are other factors which affect the MVA of the HPCL. Further, it was found that the significant value is $.003$ which is less than 0.05 . Hence, the impact of GPR on MVA is significant. Therefore, the null hypothesis is rejected. Moreover, it is concluded that the net profit ratio has an impact on return on asset of the HPCL.

The above table 1.8 depicts the results of Regression Analysis which reveal the impact of debt equity ratio on market value added. In the case of debt equity ratio, the regression coefficient known as beta is equal to $.835$. The regression coefficient or beta indicates that if, there is one unit change took place in debt equity ratio it may have changed the return on equity by $.835$. On the other hand, the intercept was recorded to be 5.625 which mean that there are other factors also affect the

MVA of the HPCL. Further, it was found that the significant value is .000 which is less than 0.05. Hence, the impact of debt equity ratio on MVA is significant. Therefore, the null hypothesis is rejected. Moreover, it is concluded that the debt equity ratio has an influence on return on equity of the HPCL. In case of interest coverage ratio, the regression coefficient known as beta is equal to .936. The regression coefficient or beta indicates that if one unit change takes place in interest coverage ratio it may change the market value added by .936. On the other hand, the intercept was recorded at 4.679 which mean that there are other factors which affects the MVA of the HPCL. Further, it was found that the significant value is .000 which is less than 0.05. Hence, the impact of ICR on MVA is significant. Therefore, the null hypothesis is rejected. Lastly, it is concluded that the interest coverage ratio has an impact on market value added of the HPCL.

Significance of the Study

This study shows the importance of analysis of financial performance of Hindustan Petroleum Corporation Limited. If the proper financial evaluation is done in various aspects like liquidity, profitability, solvency, efficiency, it could play an essential role for its various internal or external users in their decision making. In the era of privatization, it becomes vital to measure their financial performance of the company. Therefore, this study becomes significant and also useful to check the shareholders' wealth. The findings and conclusion is also useful for formulating the policies and strategies of the organization. Moreover, the current study measures the impact of liquidity, profitability and solvency on economic value added and market value added of Hindustan Petroleum Corporation Limited.

Findings and Suggestions

It was found that during the study period company added to the shareholder's wealth except in the year 2005-06. Company didn't generate positive EVA in the year 2005-06. The highest EVA was recorded in the year 2014-15 at Rs. 3,62,609.4 crores. Moreover, negative EVA was recorded in the year 2005-06 at Rs. minus 5643.32 crores. A negative market value added has been found in the year 2000-01, 2006-07, 2007-08, 2008-09, 2009-10, 2010-11, 2011-12, 2012-13 and 2013-14. It means, in these years company added value in the market price of shares. A positive MVA was recorded in the year 2001-02, 2002-03, 2003-04, 2004-05 and 2005-06 with Rs. 3961.55, Rs. 3303.67, Rs. 9466.31, Rs. 1886.66 and Rs. 2117.73 crores respectively. In the year 2003-04, MVA was recorded highest during the study period at Rs. 9466.31 crores. During the study period it was found that in most of these years company did not create MVA. In the year 2003-04, the company registered maximum MVA at Rs. 9,466.31 crores. It can be seen from the table 1.8 that there is no significant impact of current ratio on economic value added. It was found that the significant value at .195 was more than 0.05. Hence, the impact of CR on EVA is statistically insignificant. Moreover, it is concluded that the current ratio has no influence on economic value added of the HPCL. The table no. 1.4 reveal that there is statistically insignificant impact of liquid ratio on economic value added. It was recorded that the significant value at .195 was more than 0.05. Therefore, the impact of liquid ratio on economic value added is statistically insignificant. Moreover, it is concluded that the liquid ratio has no influence on economic value added of the HPCL. It can be observed from table that there is significant impact of gross profit ratio on economic value added. It was found that the significant value at .003 was less than 0.05. Hence, the impact of gross profit ratio on economic value added is statistically significant.

The results of hypothesis testing indicate that gross profit ratio has an influence on economic value added of the HPCL. The table 1.4 show that there is significant impact of net profit ratio on economic value added. It was found that the significant value at .003 was less than 0.05. Hence, the impact of net profit ratio on economic value added is statistically significant.

The results of hypothesis testing reveal that net profit ratio has an influence on economic value added of the HPCL.

The table (4) reveal that there is significant impact of debt equity ratio on economic value added. Hence, it was found that the significant value is .000 was less than 0.05. Therefore, the impact of debt equity ratio on economic value added is statistically significant. Moreover, it is concluded that the debt equity ratio has an influence on economic value added of the HPCL. The table 1.4 highlight that there is statistically significant impact of interest coverage ratio on economic value added. It was recorded that the significant value at .000 was less than 0.05. Therefore, the impact of interest coverage ratio on economic value added is statistically significant. Furthermore, it is concluded that the interest coverage ratio has an influence on economic value added of the HPCL. It can be seen from table (8) that there is insignificant impact of current ratio on market value added. It was found that the significant value at .021 was more than 0.05. Hence, the impact of CR on MVA is statistically insignificant.

Moreover, it is concluded that the current ratio has no influence on market value added of the HPCL. The table (8) reveal that there is statistically insignificant impact of liquid ratio on market value added. It was recorded that the significant value at .430 was more than 0.05.

Therefore, the impact of liquid ratio on market value added is statistically insignificant. Moreover, it is concluded that the liquid ratio has no influence on market value added of the HPCL. It can be observed from the table 1.8 that there is significant impact of gross profit ratio on market value added. It was found that the significant value at .003 was less than 0.05.

Hence, the impact of gross profit ratio on market value added is statistically significant. The results of hypothesis testing indicate that gross profit ratio has an influence on market value added of the HPCL.

Table (8) show that there is significant impact of net profit ratio on market value added. The significant value was found at .003 which is less than 0.05. Hence, the impact of net profit ratio on market value added is statistically significant. The results of hypothesis testing reveal

that net profit ratio has an influence on market value added of the HPCL. Table 1.8 reveal that there is significant impact of debt equity ratio on market value added.

Hence, it was found that the significant value at .000 was less than 0.05. Therefore, the impact of debt equity ratio on market value added is statistically significant. Moreover, it is concluded that the debt equity ratio has an influence on market value added of the HPCL.

Table 1.8 highlight that there is statistically significant impact of interest coverage ratio on market value added. It was recorded that the significant value at .000 was less than 0.05.

Therefore, the impact of interest coverage ratio on market value added is statistically significant. Furthermore, it is concluded that the interest coverage ratio has an influence on market value added of the HPCL.

Suggestions

On the basis of hypothesis testing, it is suggested that in order to increase EVA of HPCL, the company may focus on increasing its gross profit ratio. The HPCL may increase its sale or reduce cost of goods sold.

The results of hypothesis testing highlight that net profit ratio has an impact on economic value added. The company is suggested to focus on increasing net profit by way of increasing the sales or reducing the indirect expenses of the company. On the basis of hypothesis testing, it is suggested that in order to increase MVA of HPCL, the company may focus on increasing its gross profit ratio. HPCL may increase its sales or reduce cost of goods sold. The results of hypothesis testing highlight that net profit ratio has an impact on market value added. In order to increase MVA, it is suggested that HPCL should focus on increasing net profit through of increasing the sales or reducing the indirect expenses of the company.

On the basis of the results of the hypothesis testing, it is found that debt equity ratio has an impact on market value added. In order to increase MVA, it is suggested that HPCL should maintain

the debt equity ratio near about the average of 1.25. Moreover, it is suggested that HPCL may increase its number of equity share.

6. Conclusion

During the study period of HPCL, it was found that in all the years HPCL was able to create the value of shareholder's wealth except in one year only. HPCL generated positive EVA for the shareholder's. Moreover, various hypotheses have been formulated to measure the impact of liquidity, profitability and solvency on EVA. It is concluded that gross profit ratio, net profit ratio, debt equity ratio and interest coverage ratio have a statistically significant influence on economic value added except liquidity ratios. The MVA was not found satisfactory during the study period. High fluctuations were recorded in MVA. Moreover, various hypotheses have been formulated to measure the impact of liquidity, profitability and solvency on MVA. It is concluded that current ratio, gross profit ratio, net profit ratio, debt equity ratio and interest coverage ratio have a statistically significant influence on market value added except liquid ratio.

Limitations of the Study

- [1] The present study is completely based on secondary source of data.
- [2] The present study is confine to the HPCL.
- [3] This study cover the period of fifteen years.
- [4] All responses for the study have been solicited from particularly HPCL, it may vary for rest of the petroleum sector.
- [5] This study covers the financial aspect of HPCL.

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