Liquidity Performance of Bharat Petroleum Corporation Limited

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Abstract:
The petroleum industry involves the refining of crude petroleum and the processing of Natural Gas into a multitude of products, as well as the distribution and marketing of petroleum-derived products India has recently become the sixth largest consumer of oil and gas, with its oil consumption recording a compounded annual growth of 9.1 percent per annum. The objective of the present study is to analyze the liquidity and leverage performance of the Bharat Petroleum Corporation Limited and the Reliance Industries Limited. The present study attempts to analysis the performance of liquidity and leverage position of the BPCL and the RIL during the period 2006-2007 and 2010-2011. Liquidity is the company's ability to convert non cash assets into cash or to obtain cash in order to meet current liabilities. Liquidity applies to the short term, which is typically viewed as a time span of one year or less. The liquidity position of the BPCL can be further improved to increase the productivity with a view to meet the increased demand. The ability of the BPCL meet their financial obligation is more then standard norms. The management as the BPCL may take necessary steps to invest their funds in short term securities to strike a proper balance between high liquidity and low liquidity.

Keywords: *Absolute liquidity ratio, BPCL, Current assets ratio, Current ratio, Inventory liquid ratio, Liquidity, Working capital*

1. Introduction

At the time of independence in 1947, the oil and gas industry was controlled by international companies. India's domestic oil production was form one state. That is Assam. The foundation of the oil and gas industry in India was laid by the government announcement that petroleum would be the core sector industry of the country. The petroleum industry involves the refining of crude petroleum and processing of Natural Gas into a multitude of products, as well as the distribution and marketing of petroleum –derived products. The primary pollutants emitted are volatile organic compounds arising from leakage, venting, and evaporation of the raw materials and finished products. Significant amounts of sulphur oxides, hydrogen sulphide, particulate matter, and a number of toxic species can also be generated from operation specific to the industries. India has recently become the sixth largest consumer of oil and gas, with its oil consumption recording a compounded annual growth of 9.1 percent per annum.

2. Objective of the Study

The Objectives of the present study are to analyze the Liquidity and Leverage performance of the Bharat Petroleum Corporation Limited and to offer suggestion to improve the financial performance of the Bharat Petroleum Corporation Limited.

3. Source of Data

The study mainly depends on secondary data and the required data were collected from the annual reports of the BPCL and the official websites of the companies. Books, Journals and Newspaper, magazines, etc.

4. Period of the Study

The study covers a period of five years from 2006-2007 to 2010-2011 for which reliable information is available. The period selected for the study assumes significance since liberalization and several economic policy changes have taken place in the corporate scenario in recent time in India.

5. Tools for Analysis

The surveyed data have been subjected to various statistical analyses and in this article the appropriate tools like Mean, Standard Deviation, Co-efficient of variation, Compounded Annualized Growth Rate (CAGR) Linear Growth Rate (LGR) and multiple Regression Analysis has been applied.

6. Analysis and Interpretation of Data

A Company has to maintain good financial strength to with stand operating setbacks. In the present era of globalization privatization and liberalization, cut throat competition and removal of social inequalities, public enterprises have to be productive and run profitably not only in their own interest but also for the growth of the nation. Liquidity is the company's ability to convert non cash assets into cash or to obtain cash in order to meet current liabilities. The present study attempts to analysis the performance of liquidity during the period 2006-07 and 2010-11.

7. Current Ratio

Current Ratio, also called working capital ratio, is the most widely used of all financial devices based on the balance sheet. It matches the total assets to the total current liabilities.
Current Ratio is calculated with the Following formula.
Current Ratio = Current Assets / Current Liabilities

Table 1 Current Ratio (Rs. in Crore)

Year	BPCL		
	Current Assets	Current Liabilities	Ratio (Time)
2006-07	14841	12957	1.15
2007-08	20971	16366	1.28
2008-09	17275	14694	1.18
2009-10	25928	19035	1.36
2010-11	28658	24019	1.19
Mean	21535	17414	1.23
Standard Deviation	5773	4319	0.09
Co-Efficient of Variance	26.81	24.80	7.32
Annualized Compound Growth Rate	42.18(3.256)	37.58(3.99)	3.02(.54)
Liner Growth Rate (Trend)	3259(3.43)	2479(3.75)	.02(.53)
Regression equation of Y on X1 & X2 Required equation model is 1.191472+0.00005X1 Where Y= Current Ratio, X1=Current Assets, X2= Current Liabilities			
Result of Regression analysis Variable Beta SE beta Student 't' Sig Level Constant 1.191472 0.021303 55.923 .0003 X1 0.0005 0.00003 16.291 .0047 X2 -0.000006 0.000004 -14.551 .0037			

Source: Annual of Reports of the BPCL 2007-2011. Significant at 1% level

Table 1 shows that the mean ratio for the BPCL was 1.23 times and the standard deviation ratio was (0.09), coefficient of variation was 7.32 percent , annualized compound growth rate ratio and linear

growth rate ratio 3.02(0.54) and 0.02(0.53) respectively. From the regression equation model it is found that both liquidity positions in terms of current ratio of the BPCL have been good during the period under study. The beta coefficient for current ratio is highly significant at the one percent level.

8. Quick Ratio

The quick ratio is used to provide an indication of the solvency of a company. It describes the relationship between quick assets and current liabilities. It includes all current assets except inventories and prepaid expenses. Current liabilities include all current liabilities except bank overdraft. The Quick ratio is calculated with the following formula.

Quick Ratio = Quick Asset / Current Liabilities

Table 2: Quick Ratio (Rs. in Crore)

Year	BPCL		
	Quick Assets	Current Liabilities	Ratio(Time)
2006-07	6180	12957	0.48
2007-08	10367	16366	0.63
2008-09	10451	14694	0.71
2009-10	13899	19035	0.73
2010-11	13283	24019	0.55
Mean	10836	17414	0.62
Standard Deviation	3058	4319	0.11
Co-Efficient of Variation	28.22	24.80	17.74
Annualized Compound Growth Rate	52.18 (3.48)	37.58 (3.96)	10.14 (0.70)
Linear Growth Rate (Trend)	1773 (3.98)	2479 (3.75)	0.024 (0.67)
Regression equation of Y on X1 & X2 Required equation model is .558086 + 0.00005X1 – 0.00003 X2 Where Y= Quick Ratio , X1= Quick Asset, X2=Current Liabilities			
Results of Regression analysis Variable Beta SE beta Student ‘t’ Sig Level Constant 1.191472 .021303 55.929 .0003 X1 0.0005 0.00003 16.291 .0047 X2 -0.000006 0.000004 -14.551 .0037			

Source : Annual Reports of the BPCL 2007-2011. Significant at 1% level

Table 2 shows that , the mean ratio for the BPCL was 0.62 times , the standard deviation ratio was 0.11, coefficient of variation was 14.94 percent, annualized compound growth rate ratio and the linear growth rate ratio was 10.14 (0.70) and 0.02(0.67) respectively. The regression equation model, it is found that both liquidity positions in term of quick ratio of the BPCL have been good during the period under study. The beta coefficient for quick ration is highly significant at one percent level.

9. Absolute Liquidity Ratio

Cash is the most liquid asset: a financial analyst may examine the absolute liquidity ratio and its equivalent to current liabilities. Trade investment or marketable securities are the equivalent of cash.

Absolute Liquidity Ratio = Cash + Marketable Securities / Current Liabilities.

Table 3 Absolute Liquidity Ratio (Rs. in Crore)

Year	BPCL		
	Cash	Current Liabilities	Ratio(Time)
2006-07	863	12957	0.07
2007-08	10367	16366	0.06
2008-09	10451	14694	0.03
2009-10	13899	19035	0.02
2010-11	13283	24019	0.02
Mean	10836	17414	0.04
Standard Deviation	3058	4319	0.02
Co-Efficient of Variation	28.22	24.80	17.74
Annualized Compound Growth Rate	52.18 (3.48)	37.58 (3.96)	50 (-5.66)
Linear Growth Rate (Trend)	1773 (3.98)	2479 (3.75)	-.01-4.95)
Regression equation of Y on X1 & X2 Required equation model is .022366 + 0.00006 X1 -0.00001 X2 Where Y= Absolute Liquidity Ratio , X1 = Cash, X2= Current Liabilities			
Results of Regression analysis Variable Beta SE beta Student 't' Sig Level Constant 1.191472 .021303 55.929 .0003 X1 0.00006 0.00001 4.542 .0452 X2 -0.000006 0.000004 -4.551 .3302			

Source : Annual Reports of the BPCL 2007-2011. Significant at 1% level.

Table 3 show that the mean ratio for the BPCL was 0.04 times, the standard deviation ratio was(0.04), the coefficient of variation was 17.74 percent , annualized compound growth rate ratio and the linear growth rate ratio was 50 (-5.66) and .01 (-4.95)respectively. From the regression equation model, it is found that the liquidity position of absolute liquidity ratio of the BPCL have been good. The beta coefficient for the absolute liquidity ratio is highly significant at the one percent level.

9. Cash to Working Capital Ratio

Cash is the most liquid form of asset, which safeguard the interest of the business. An analyses of cash to working capital helps to know the proportion of cash in the working capital . There is no rule of thumb. But a higher proportion of cash leads to the shrinkage of profits and lower proportion leads to the running short of cash. Cash to Working Capital Ratio = Cash Balance / Working Capital

Table 4 Cash to Working Capital Ratio (Rs. In Crore)

Year	BPCL		
	Cash	Working Capital	Ratio (Time)
2006-07	863	1884	45.81
2007-08	961	4606	20.86
2008-09	441	2581	17.09
2009-10	341	6893	4.95
2010-11	379	4640	8.71
Mean	597	4121	19.38
Standard Deviation	292	1973	16.12
Co-Efficient of Variation	48.88	47.87	83.20
Annualized Compound Growth Rate	46.07 (-3.20)	37.58 (66.18)	67.54 (-3.52)

Linear Growth Rate (Trend)	158 (-2.92)	779 (1.39)	9.12 (-3.46)
Regression equation of Y on X1 & X2 Required equation model is .22.360467 + .027465 X1 - .004703 Where Y=Cash to Working Capital Ratio, X1=Cash, X2=Working Capital			
Results of Regression analysis Variable Beta SE beta Student 't' Sig Level Constant 8.927089 1.181 .3589 X1 .027465 .018048 1.522 .2675 X2 -.004703 .002670 -1.761 .2202			

Source : Annual Reports of the BPCL 2007-2011. Significant at 1% level

Table 4 shows that the mean ratio for the BPCL was 19.38 times, standard deviation ratio was 16.12 time and the coefficient of variation 83.20 percent , annualized compound growth rate ratio and the linear growth rate ratio of the BPCL was -67.54(-3.52) and -9.12(-3.46) respectively. From the equation model, it is found that the liquidity in term of cash to working capital ratio have been good during the period under study. The beta coefficient for cash to working capital ratio is highly significant at the one percent level.

10. Cash to Current Asset Ratio

The cash to current asset ratio denotes the level of cash maintained by a business. It indicates the extent to which a company can pay current liabilities without relying on the sale of inventory and without relying on the receipt of accounts receivable. The Cash to Current asset ratio is calculated with the following formula. Cash to current Asset Ratio = Cash Balance / Current Assets

Table 5: Cash to Current Assets Ratio (Rs. in crore)

Year	BPCL		
	Cash	Current Assets	Ratio(Time)
2006-07	863	14841	5.81
2007-08	961	20971	4.58
2008-09	441	17275	2.55
2009-10	341	25928	1.32
2010-11	379	28658	1.32
Mean	597	21535	3.12
Standard Deviation	292	5773	2.01
Co-Efficient of Variation	48.88	26.81	64.45
Annualized Compound Growth Rate	46.07 (-3.20)	42.18 (3.26)	62.05 (-6.77)
Linear Growth Rate (Trend)	158 (-2.92)	3259 (3.43)	01.22(-6.14)
Regression equation of Y on X1 & X2 Required equation model is .3.057975+.004872 X1-0.000132 Where Y=Cash to Current Asset Ratio X1=Cash, X2=Current Assets			
Results of Regression analysis Variable Beta SE beta Student 't' Sig Level Constant 3.057975 1.776609 1.721 .2273 X1 .004872 .001157 4.210 .520 X2 -.000132,0.00058 -2.263 .1520			

Source : Annual Report of the BPCL 2007-2011. Significant at 1% level

Table 5 shows that, the mean ratio for the BPCL was 3.12 times , the standard deviation ratio were (2.01) and coefficient of variation (64.45percent) annualized compound growth rate and the linear growth rate was -62.05 (-6.77) and -1.22(-6.14) respectively. From the equation model, it is found that the liquidity position and the growth terms of cash to current asset ratio have been good during

the period under study .The beta coefficient for cash to current asset ratio are highly significant at the one percent level .

11. Working Capital to Capital Employed Ratio

The working capital to capital employed ratio is used as a measure of a firm's liquidity. The working capital is the excess of current asset over the current liabilities. Capital employed refers to long-term funds in the balance sheet. It represents the long-term foundation funds of the company.

Working Capital to Capital Employed Ratio = Working Capital / Capital Employed

Table 6: Working Capital to Capital Employed Ratio (Rs. in crore)

Year	BPCL		
	Working Capital	Capital Employed	Ratio(Time)
2006-07	1884	13717	0.14
2007-08	4606	17342	0.27
2008-09	2581	16584	0.16
2009-10	6893	23080	0.30
2010-11	4640	21651	0.21
Mean	4121	18475	0.22
Standard Deviatiion	1973	3834	0.07
Co-Efficient of Variation	47.87	20.75	31.82
Annualized Compound Growth Rate	66.18 (1.58)	31.79 (357)	23.49 (.86)
Linear Growth Rate (Trend)	779 (1.39)	2160.60 (3.40)	0.02 (.74)
Regression equation of Y on X1 & X2 Required equation model is .217528+.000054X1-0.000012 Where Y=Working Capital ratio, X1=Working Capital X2=Capital Employed			
Results of Regression analysis Variable Beta SE beta Student 't' Sig Level Constant .217528 .057524 3.782 .0290 X1 0.000054 0.000009 5.748 .0290 X2 -0.000012 0.000004 -2.509 .1289			

Source : Annual Reports of the BPCL 2007-2011. Significant at 1% level

Table 6 shows that the mean ratio for the BPCL was 0.22 times, the standard deviation ratio was 0.07, coefficient of variation was 31.82 percent , annualized compound growth rate and the linear growth rate was 23.49(.86) and 0.02(.74) respectively. From the equation model , it is found that the liquidity position in term of working capital to capital employed ratio of the BPCL have been good during the period the period under study. The beta coefficient for working capital to capital employed ratio is highly significant at the one percent level.

12. Inventory to Working Capital Ratio

Inventory to working capital ratio is calculated to ascertain whether the company has overstocking or not. The ratio is a measure of the safety factor available for the protection of short-term creditor. Increase in the volume of sales requires increase in the size of the inventory, but the inventory should not exceed the a memorandum of undertakings of the current assets.

Inventory to working capital ratio = Inventory / Working Capital

Table 7: Inventories to Working Capital Ratio (Rs.in crore)

Year	BPCL		
	Inventories	Working Capital	Ratio(Time)
2006-07	8621	1884	4.60
2007-08	10604	4606	2.30
2008-09	6824	2581	2.64
2009-10	12029	6893	1.75
2010-11	15375	4640	3.31
Mean Standard Deviatiion Co-Efficient of Variation Annualized Compound Growth Rate Linear Growth Rate (Trend)	10699 3272 3058 34.09(1.48) 1485.30(1.79)	4121 1973 47.87 66.18(1.58) 779.90(1.39)	2.92 1.10 37.67 23.92(-.76) 0.31(-.88)
Regression equation of Y on X1 & X2 Required equation model is3.406125+0.0002X1-0.0006X2 Where Y=Inventory to Working Capital Ratio,X1=Inventory X2=Working Capital			
Results of Regression analysis Variable Beta SE beta Student 't' Sig Level Constant .217528 .057524 3.782 .0634 X1 0.000054 0.000009 5.748 .0290 X2 -0.000012 0.000004 -2.509 .1289			

Source : Annual Reports of the BPCL 2007-2011. Significant at 1% level

Table 7 Show that , the mean ratio for the BPCL was 2.92 times, standard deviation were 1.10, coefficient of variation 44.44 percent, annualized compound growth rate ratio and the linear growth rate ratio of the BPCL were -23.92(-.76) and -.31(-.88) respectively. From the equation model, it is found that both of the liquidity position and the growth in terms inventories to working capital ratio of the BPCL have been good during the period under study. The beta coefficient for the inventory to working capital ratio is highly significant at the one percent level.

13. Suggestions for Improvement

1. The liquidity position of the BPCL can be further improved to increase the productivity with a view to meet the increased demand and
2. The ability of the BPCL meet their financial obligation is more than standard norms. The BPCL may ensure that they do not suffer from the lack of liquidity or excess liquidity. The management as the BPCL should take necessary steps to invest their funds in short term securities to strike a proper balance between high liquidity and low liquidity.

14. Conclusion

It is concluded from the study that the BPCL have achieved greater penetration. The high growth achieved in recent year is because of the development of petroleum companies. The Indian petroleum companies play a meaningful role

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