

LIQUIDITY PERFORMANCE OF PETROLEUM INDUSTRY IN INDIA

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ABSTRACT

The contribution of Petroleum industry to the Indian economy is very significant. Government makes huge investments to develop this industry so that it can help to meet the national need. Presently this industry has massive assets with ample financial resources. Since petroleum industry is the one of mainstay industry to the economy, it is important to study their financial performance in order to find out some new ways to improve the financial performance and also to find out lacuna in this regard. There are numbers of yardsticks to measure the financial performance of the company like profitability analysis, capital structure analysis, liquidity analysis etc. Among all, liquidity is one of the important measures to judge the financial performance. So, in this study an attempt has been made to analyse the financial performance of the Indian petroleum industry with the help of ratio analysis technique from only liquidity performance point of view. This study is purely an analytical study based on data of twelve selected companies for ten years of petroleum industry in India. Purposive random sampling technique is used to select the sample companies. Simple mathematical tools like percentage, average, range, standard deviation and coefficient of variation have been used. Study discovered that liquidity performance of the sample companies varies from each other. Study also revealed that some of the sample companies' liquidity performance is not satisfactory as because its liquidity ratios is much higher as well as much lower than the ideal and industry average ratio. Opposite to that some of the sample companies' performance is satisfactory.

Keywords: *Current Ratio, Liquid Ratio, Net Working Capital, Range, Liquidity Performance, Financial Performance.*

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INTRODUCTION

Petroleum industry has very high importance of national need. Any change in the price of petroleum product may change the price level of the commodities. It is required to have study the financial performance of the industry. In this study only liquidity performance is measured. Liquidity means the ability of a firm to meet its current obligations. Liquidity performance can be well judged with the help of current ratio, Liquid Ratio, cash and bank to net working capital ratio, absolute liquidity ratio, overdue liability ratio, defensive interval ratio etc.

REVIEW OF LITERATURE

Sing Karamjeet and Chekol Firew (2009) in their study investigated the impact of working capital management policies on performance of Indian Firms. The result found that there is a positive relationship of working capital aggressive investment policy and profitability. *Jackline,S and Deo, Malabika (2009)* studied the Liquidity Management of Indian bank. From the study, it was found that the sample frame has been bringing up the effort in improving the overall state of liquidity to have a favourable impact on its probability. *Gosh, S. K. (2004)* has made a study of the Indian cement industry and its “working capital management efficiency”. He finds that the industry as a whole did not perform remarkably well during study period. *Mishra, B. & Kar, N.C. (1998)* in his study analysed the Automobile industry and reveals that there is a significant correlation among the different financial ratios that measure profitability, liquidity and cash flow of a company.

OBJECTIVE OF THE STUDY

The objective of the present study is to analyse the liquidity performance of the petroleum industry in India during the period of 2000-2001 to 2009-2010.

RESEARCH METHODOLOGY

The study is purely an analytical study based on data of twelve selected companies for ten years of Indian petroleum industry. Purposive random sampling technique is used to select the sample companies. Ratios analysis technique has been used to analyse the data. In the present study Liquidity is measured with the help of current ratio, Liquid Ratio and cash& bank to net working ratio only. Few simple mathematical tools like percentage, average, range, standard deviation and coefficient of variation has been used.

This study is purely based on the secondary data collected mainly from Annual Reports of the company. In respective of the years companies different liquidity ratios have been calculated. Mean, range, standard deviation (SD), coefficient of variation (CV), difference between

company average ratio & ideal ratio (CA-IR) and difference between company average ratio & industrial average ratio (CA-IA) both in terms of percentage have been calculated. Then, Range, SD, CV, CA-IR (%) and CA-IA(%) have been ranked from 1 to 12 taking in consideration of the their ratio base performance (lower value to higher value). Again liquidity ranking has been given for range, SD, CV, CA-IR (%) and CA-IA (%) separately based on the score of selected liquidity measures i.e. on different ratios in respective of the companies. Finally, ultimate rank has been given based on the total score for each company and performance has been measured.

ANALYSIS AND DISCUSSION

CURRENT RATIO (CR)

Current ratio is the ratio between current asset and current liability. This ratio reflects the availability of current assets per rupee of current liabilities. It is customary to take 2:1 ratio as an ideal of current assets and current liabilities.

Table - 1

Analysis of Current Ratio of the selected companies of Petroleum Industry in India

S l. N o	Name of the compa ny	200 9- 201 0	200 8- 200 9	200 7- 200 8	200 6- 200 7	200 5- 200 6	200 4- 200 5	200 3- 200 4	200 2- 200 3	200 1 - 200 1	200 0- 200 1	Mean	Rang e	Standar d Deviation (SD)	Coefficien t of Variation (CV) (%)	CA- IR (%)	CA-IA (%)	
1	ONG C	2.37	2.26	2.47	2.77	3.05	3.1	4.1	2.19	2.51	2.89	2.77	1.91	0.57	0.20	39	29	
2	GAIL	1.32	1.5	1.72	1.7	1.27	1.85	1.36	1.67	1.03	1.17	1.46	0.82	0.27	0.19	27	32	
3	BPCL	1.38	1.19	1.35	1.21	1.18	1.13	0.99	1.02	1.12	1.35	1.19	0.39	0.14	0.11	40	45	
4	HPCL	1.25	1.36	1.55	1.13	1.38	1.36	1.23	1.08	0.78	1.62	1.27	0.77	0.24	0.19	36	41	
5	OIL	3.75	2.7	3.53	5.34	3.9	4.04	5.08	4.14	NA	NA	4.06	2.64	0.84	0.21	103	89	
6	IOCL	1.33	1.26	1.53	1.31	1.42	1.44	1.34	1.35	1.24	1.74	1.40	0.5	0.15	0.11	30	35	
7	CPCL	3.19	1.63	1.99	1.6	1.92	1.73	1.76	1.77	2.19	2.67	2.05	1.59	0.51	0.25	2	5	
8	NRL	1.47	1.42	1.24	1.39	1.43	1.3	1.94	NA	1.01	1.18	1.38	0.93	0.26	0.19	31	36	
9	MRPL	1.18	1.75	1.31	1.43	1.53	1.39	1.56	1.38	1.07	1.04	1.36	0.71	0.22	0.16	32	37	
10	EOL	0.82	0.85	0.95	1.17	1.05	0.92	0.57	0.57	0.65	0.78	0.83	0.6	0.20	0.24	58	61	
11	HOEC L	1.49	1.05	1.77	1.85	1.53	2.45	2.93	5.12	3.44	5.67	2.73	4.62	1.58	0.58	37	27	
12	SETL	8.72	6.97	2.32	4.52	4.29	8.52	4.18	4.34	4.24	4.65	5.28	6.4	2.08	0.40	164	145	
Average of the Industry												2.15						

Source: Compiled and computed from annual reports of the selected companies of Petroleum Industry in India

Analysis of current ratio (CR)

It is found that average of CR of all the sample companies is not same during the study period. It is not even same with the ideal CR. The average CR of the companies ranging in-between 5.28 to 0.83. CR of 42% sample companies are above the conventional ratio i.e. 2:1 and the rest 58% companies CR is below the conventional ratio. If we take $\pm 20\%$ of the ideal

ratio to define the companies as satisfactory then the range will be 2.4:1 to 1.6:1 and only CPCL could be able to satisfy the CR.

Again, it is observed that companies' average CR is also different from the industry average. Study proved that CR of 33% sample companies are above the industry average i.e. 2.15 and the rest 76% sample companies are below the industry average. But if we take $\pm 20\%$ of the industry average ratio to define the companies as satisfactory then the range is 2.574:1 to 1.73:1 and it is found only CPCL satisfied their company average CR with industry average CR.

If we see the range within which companies' CR varies then BPCL holds 1st rank and SETL holds the 12th rank. It indicates that higher the range indicates more is the difference between maximum and minimum CR and hence more is the volatility.

SETL shows higher Standard deviation (SD) with 2.08 meaning thereby company CR in different years varying much from the mean value among all the companies and opposite to this BPCL having low SD with 0.14 i.e. very less variation from mean value in other words it signifies that CR of BPCL in different years having consistency during the study period.

Regarding Coefficient of variation (CV), i.e. variation of company CR from mean value in terms of percentage, BPCL and IOCL having lowest with 11% each and HOECL shows highest CV with 58%.

Study shows how respective company average is different from the ideal ratio in terms of percentage. CPCL's CR average shows very less variation from the ideal ratio of CR with only 2% which seems good followed by GAIL, IOCL etc. Opposite to this SETL's CR average shows very high variation from ideal ratio with 164% which is not good followed by OIL, EOL etc.

Again, study also shows how company's average CR is different from industry average CR in terms of percentage. CPCL's CR average again shows very less variation from the industry average with 5% which is good followed by HOECL, ONGC etc. While SETL's average CR highly varies from industry average with 145% which seems not fine followed by OIL, EOL etc.

From the above discussion it can be concluded that Industry CR ratio is slightly higher than ideal ratio i.e. 2:1. Four companies' CR are very high specially SETL and OIL among all the sample companies of petroleum industry in India. They may reduce it to 2:1 and seven companies' CR are less than 2:1 specially EOL and BPCL; they may increase their respective CR.

LIQUID RATIO (LR)

Liquid ratio also known as Acid Test Ratio or quick ratio which is more superior form of liquidity ratio than current ratio Generally a Liquid Ratio of 1:1 is preferred and treated as ideal ratio.

Table – 2
Analysis of Liquid Ratio of the selected companies of Petroleum Industry in India

Sl. No	Name of the company	2009 - 2010	2008 - 2009	2007 - 2008	2006 - 2007	2005 - 2006	2004 - 2005	2003 - 2004	2002 - 2003	2001 - 2002	2000 - 2001	Mean	Range	Standard Deviation (SD)	Coefficient of Variation (CV) (%)	CA-IR (%)	CA-IA (%)		
1	ONGC	2.13	2.07	2.27	2.55	2.77	2.84	3.7	2.01	2.3	2.57	2.52	1.69	0.50	0.20	152	55		
2	GAIL	1.26	1.43	1.62	1.58	1.19	1.71	1.2	1.39	1.16	0.83	1.34	0.88	0.26	0.20	34	18		
3	BPCL	0.67	0.66	0.62	0.44	0.38	0.45	0.48	0.49	0.53	0.63	0.54	0.29	0.10	0.19	47	67		
4	HPCL	0.49	0.61	0.58	0.33	0.4	0.55	0.53	0.43	0.46	4.84	0.92	4.51	1.38	1.50	8	43		
5	OIL	3.61	2.54	3.27	4.94	3.56	3.74	4.67	3.78			3.76	2.40	0.76	0.20	276	131		
6	IOCL	0.33	0.26	0.53	0.31	0.42	0.44	0.34	0.35	0.24	0.74	0.40	0.50	0.15	0.38	60	76		
7	CPCL	0.72	0.53	0.56	0.44	0.61	0.57	0.72	0.76	1.44	1.34	0.77	1.00	0.34	0.45	23	53		
8	NRL	0.29	0.5	0.68	0.65	0.54	0.49	0.64		0.66	0.45	0.54	0.39	0.13	0.23	46	67		
9	MRPL	0.71	1.2	0.61	0.63	0.76	0.67	0.83	0.54	0.51	0.43	0.69	0.77	0.22	0.31	31	58		
10	EOL	0.43	0.53	0.34	0.31	1.01	0.81	0.56	0.56	0.63	0.76	0.59	0.70	0.22	0.37	41	63		
11	HOECL	1.21	0.88	1.61	1.61	1.35	2.34	2.79	5.01	3.24	5.41	2.55	4.53	1.58	0.62	155	56		
12	SETL	7.82	5.85	2.23	4.28	4.09	8.23	3.83	4.16	4.07	4.46	4.90	6.00	1.86	0.38	390	201		
Average of the Industry												1.6	3						

Source: Compiled and computed from annual reports of the selected companies of Petroleum Industry in India

The analysis of Liquid Ratio (LR)

From table-2 It is confirmed that average Liquid Ratio (LR) of 42% of sample companies are above the ideal Liquid Ratio i.e. 1:1 and rest 58% sample companies LR are below the ideal ratio. It is noticed that average LR of all the companies are different from Ideal LR. If we take $\pm 20\%$ of ideal LR to consider the companies as satisfactory from liquidity point of view and It is found that only HPCL could able to satisfy the ratio as its average LR falls within the range of 1.2:1 to 0.8:1.

Again from the above table it is cleared that average LR of the companies are different from each other and it is different from industry average too. The average LR of the companies varies from 4.90 to 0.40. It is confirmed from the table that 33% sample companies LR is above the average industry LR and the rest 66% companies LR is below the level of Industry average. SETL have highest LR mean with 4.90 and IOCL have lowest LR mean with 0.40. Company's LR ranges also different form each other. SETL registered highest range with

6.00 implies bigger is the wave of variation of LR average of the company while BPCL registered a very low range of LR average with only 0.29 among the companies.

Regarding Standard deviation (SD) SETL showing highest SD with 1.86 while BPCL showing lowest SD with 0.10 meaning thereby LR of the company in different years are much varying from mean in case of SETL and low variation in case of BPCL. In case of coefficient of variation (CV), BPCL shows the lowest CV with 19% while HPCL shows highest CV with 150%. It implies variation of LR in different years from the mean in terms of percentage. Table also depicted the difference of company average from Ideal ratio and result is SETL's LR average is far away from the ideal ratio and it is not a good sign. At the same time HPCL's average LR registered a very low difference from ideal ratio with 8% only. In case of the difference between company LR Vs industry average again SETL recorded highest difference of their company average from industry average with 201% among the companies which seems very bad whereas GAIL noticed very low variation with only 18% and which is good from liquidity point of view.

From industry point of view, industry average is quite higher than the ideal LR ratio. Few sample company specially ONGC, OIL, HOECL and SETL their LR are much higher so they may reduce it. At the same time other few sample companies specially IOCL, BPCL and NRL their LR is lower than the Ideal ratio may increase it.

ANALYSIS OF CASH & BANK TO NET WORKING CAPITAL RATIO (CBNWCR)

This ratio explains the relationship between cash & bank to networking capital. Higher is this ratio means greater liquidity of the firm which helps day to day operation of the firm and vice versa. There is no rule of thumb or ideal ratio but a high CBNWCR is good from liquidity point of view.

Table – 3
Analysis of Cash & bank to NWC Ratio of the selected companies of Petroleum Industry in India

Sl. No	Name of the company	2009 - 2010	2008 - 2009	2007-2008	2006-2007	2005-2006	2004-2005	2003-2004	2002-2003	2001-2002	2000 - 2001	Mean	Range	Standard Deviation (SD)	Coefficient of Variation (CV) (%)	CA-IR (%)	CA-IA (%)	
1	ONGC	0.54	0.36	0.5	0.45	0.16	0.25	0.25	0.48	0.5	0.22	0.37	0.38	0.14	0.38		0	
2	GAIL	1.25	0.85	1.03	0.83	1.26	1.17	1.48	1.26	15.84	2.32	2.73	15.01	4.63	1.70		638	
3	BPCL	0.05	0.18	0.19	0.37	0.13	0.29	9.13	2.19	0.73	0.24	-0.48	11.32	3.11	6.52		229	
4	HPCL	0.06	0.14	0.04	0.06	0.01	0.08	0.11	0.03	0.01	0.01	0.06	0.13	0.04	0.81		85	
5	OIL	0.95	1.15	0.97	0.73	0.92	0.70	0.52	0.38	NA	NA	0.79	0.77	0.26	0.32		114	
6	IOCL	0.09	0.09	0.04	0.1	0.07	0.05	0.11	0.15	0.18	0.07	0.10	0.14	0.04	0.46		74	
7	CPCL	.004	.007	.005	.007	.028	.001	.014	.01	.193	.081	0.04	0.19	0.06	1.72		91	
8	NRL	0.2	0.65	1.3	0.91	0.08	0.01	0.06	NA	5.35	0.31	0.99	5.34	1.69	1.72		166	
9	MRPL	.753	.937	.112	.053	.003	.005	.023	0.01	.018	.018	0.19	0.93	0.35	1.80		48	
10	EOL	-0.75	-1.16	2.67	0.98	12	7.29	0.58	0.58	0.58	0.99	-0.16	19.29	4.82	29.74		144	
11	HOECL	1.06	13.98	1.436	1.278	1.356	.863	.819	.269	.335	.425	2.18	13.71	4.17	1.91		490	
12	SETL	0.87	0.78	0.94	0.51	0.64	0.6	0.49	0.68	0.51	0.23	0.63	0.71	0.21	0.33		69	
Industry average												0.62						

Source: Compiled and computed from annual reports of the selected companies of Petroleum Industry in India

Analysis of cash to net working capital ratio (CBNWCR)

It is established in the table-3 that two sample companies cash & bank to net working ratio (CBNWCR) comes in negative which signifies poor liquidity performance. This has incurred because of negative net working capital. It is observed that all the companies CBNWCR are varying from the industry average. Almost 42% Sample Company's CBNWCR is more than industry average. While the rest 58% sample company's CBNWCR is less than the Industry average. GAIL shows highest CBNWCR average with 2.73 while BPCL showing the lowest CBNWCR average with -0.48. All the companies have positive NWC except two companies i.e. EOL in eight years negative NWC and BPCL with very high negative NWC in the year 2003-04. If we take $\pm 20\%$ of CBNWCR industry average to consider the companies as satisfactory then only SETL could able to satisfy the same as because their company average falls in between 0.744:1 to 0.496:1. As regards to SD it is varies from company to company. HPCL and IOCL showing lowest SD with 0.04 each while the Essay Oil ltd. showing the highest SD with 4.82. Considering CV, OIL has the lowest CV while Essay Oil ltd. showing the highest CV. As there is no rule of thumb of CBNWCR so no comparison between company average CBNWCR with ideal ratio but so far as company average and industry average is concern table-3 shows ONGC's CBNWCR is same with industry average therefore can be recognised as good performer from liquidity point of view followed by

MRPL, SETL, IOCL with comparatively low difference among the companies. Opposite to that comparatively GAIL, HOECL, and BPCL's difference of their company average from industrial average is high.

Company having negative CBNWCR need to improve and make it positive particularly BPCL and Essay Oil ltd. Company namely HOECL and GAIL may reduce their CBNWCR as it is more than CR.

OVERALL LIQUIDITY PERFORMANCE

For further analysis and to reach the overall liquidity performance of the petroleum industry in India following steps have been taken up.

Rank score has been given to all sample companies in respective of each ratio calculated above as 1 to first rank holder, 2 to second rank holder till 12 to 12th rank holder on the basis of their ratios (lower ratio to higher ratio in ascending order). Following the above mentioned technique performance of all the sample companies on the basis of range, standard deviation, coefficient of variation, difference between company average Vs ideal ratios and difference between company average Vs industry average ratios has been ranked taking in to consideration of their score. Finally ultimate rank has been recorded which has shown in table-4.

Table-4
Ultimate ranking based on total score of mean, standard deviation and coefficient of variation

Sl. No.	Performance	ONGC	GAIL	BPCL	HPCL	OIL	IOCL	CCPL	NRL	MRPL	ESSAR	HOECL	SETL
1	Ranking as per Range	8	9	2	3.5	10	1	6	5	3.5	7	12	11
2	Ranking as per standard deviation	8	9	2	5	10	1	6	4	3	7	12	11
3	Ranking as per Coefficient of variation	2	4.5	3	9	1	4.5	10	6	7	11	12	8
4	Ranking as per difference of CA-IR (%)	10	2	8.5	3	11	6	1	5	4	7	8.5	12
5	Ranking as per difference of CA-IA (%)	1	5	11	3.5	12	7	2	8	3.5	9	6	10
	Total Score	29	29.5	26.5	24	44	19.5	25	28	21	41	50.5	52
	Ultimate Rank	7	8	5	3	10	1	4	6	2	9	11	12

Source: Compiled and computed from annual reports of the selected companies of Petroleum Industry in India

Analysis of overall liquidity performance

It is clear from the above table that ranking as per the range IOCL secured 1 for its first rank similarly 2 for BPCL respectively. Which indicates span of the variation of the respective ratios during the study period, lower is the variation lower is the score and better is the performance comparison to other.

In the same way ranking as per Standard deviation again IOCL secured 1 for its first rank, 2 for BPCL likewise HOECL 12 for its 12th rank, which indicates variation of different ratios from its mean value. Lower is the SD value lower is variation, which is good for the company.

Again, ranking as per coefficient of variation table-4 shows OIL secured 1 for its first rank, ONGC secured 2 for its second rank respectively. It indicates variation of company ratios from its mean value in terms of percentage during the study period. Lower is the percentage higher is the consistency among the ratios, which is good for the company.

It is also seen that which company average is varying much from its ideal ratio. Therefore, ranking as difference between company average and its Ideal ratio CCPL shows rank first and secured 1, GAIL shows rank second and secured 2 respectively. Lower is the score indicates company average is near to the ideal ratio and vice versa.

Finally ranking as per the difference between company average ratio and industry average ratio in terms of percentage, ONGC secured 1 for its first rank, CCPL 2 for its second rank respectively. Lower is score indicates company average ratio more near to the industry average and vice versa.

Taking all the scores of ranks as per range, SD, CV, CA-IR (%) and CA-IA (%) total score comes, 29 of ONGC, 29.5 of GAIL, 26.5 of BPCL respectively. IOCL secured the lowest score with 19.5 therefore holds rank 1st which indicates best performer from all liquidity measures among the sample company. SETL secured highest score with 52 and hence secured 12th rank meaning thereby poor performance from all side among the sample companies similarly other companies too of petroleum industry in India. Companies needs to improve their overall liquidity performance specially SETL, HOECL, OIL, EOL.

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