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Liquidity Analysis of Selected Oil Refinery Companies in India

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Abstract: ***The importance of liquidity in the successful operation of a business firm cannot be overstated. Maintaining adequate liquidity in the business to ensure smooth business operation and meeting short-term obligations as they become due is a critical part of managing working capital. The purpose of this paper is to investigate the liquidity position of selected Oil Refinery Companies in India. The data was gathered from the company's annual reports, and the study period ranges from 2016-'17 to 2020-'21. To determine the company's liquidity strength, five liquidity ratios are calculated: Current Ratio, Quick Ratio, Inventory Turnover Ratio, Debtor Turnover Ratio, Days Working Capital. Statistical tools such as the average, standard deviation, and ANOVA test were used to analyse the data.***

Keywords: liquidity, Current Ratio, Quick Ratio, Inventory Turnover Ratio, Debtor Turnover Ratio, Days Working Capital)

1. Introduction

Every business organization's lifeblood is finance. It is extremely difficult for any business organisation to compete in the competitive world created by liberalisation, privatisation, and globalisation without proper financial resource management. Furthermore, every business enterprise must have sufficient liquid resources. As a result, liquidity is vital for businesses to maintain efficient operation. The term 'liquidity' refers to a company's ability to pay its debts. It refers to the company's ability to pay short-term creditors who have provided raw materials, working capital, and other services on time. As a result, the management of liquidity is the primary focus of the business organisation because it is directly related to the said organization's short-term solvency. The ratio analysis is one of the powerful techniques available in the hands of financial analysts for analysing the liquidity position of a business organisation. Liquidity ratios are used to assess the organization's short-term solvency. The company's short-term borrowers and financial institutions are primarily concerned with whether the company will be able to meet its short-term obligations when they fall due. The purpose of this paper is to examine selected Oil Refinery Companies in India' liquidity position using liquidity ratios in order to determine whether the companiesare effectively utilising its current assets and current liabilities or not.

2. Literature Review

Durrah, O., Rahman, A. A. A., Jamil, S. A., &Ghafeer, N. A. (2016) in their reseach exploring the relationship between liquidity ratios and indicators of financial performance: An analytical study on food industrial companies listed in Amman Bursa the purpose of their study is to look at the relationship between liquidity ratios and financial performance indicators (profitability ratios) in the food industrial companies listed on the Amman Bursa over the last few years (2012-2014). The research sample consisted of (8) industrial companies that work in the field of Food is listed in the Bursa of Amman. The findings revealed that there is no relationship between all liquidity ratios and the gross profit margin, but there is a weak positive relationship between the current ratio and each of the operating profit margins and the net profit margin, as the study revealed. Liquidity ratios (current ratio, quick ratio, cash ratio) and return on assets have a positive relationship.

Rashid, C. A. (2018) in his research efficiency of financial ratios analysis for evaluating companies' liquidity. The main focus was on evaluating a company's liquidity using financial ratios analysis. One of the UK's retail companies has chosen to be evaluated by examining the data contained in their financial statements. This company's cash flow statement has been considered for use in evaluating liquidity because it contains the majority of the necessary information for this purpose. A hypothesis has been developed in which financial ratios analysis can assist investors in deciding which company to buy their shares from, and it has been approved because the numbers show that liquidity is just as important as profit in attracting investors to buy the company's stock because it ensures the company's confidentiality.

Madushanka, K. H. I., &Jathurika, M. (2018) in their study the impact of liquidity ratios on profitability goal of their research is to look into the relationship between liquidity and profitability. The research is based on 15 manufacturing companies that were listed on the Colombo Stock Exchange between 2012 and 2016. The study used correlation and regression analysis as well as descriptive statistics, and the results show that liquidity ratios (Quick ratio) are positively and significantly related to firm profitability among Sri Lankan listed manufacturing companies. Overall, the findings of this study suggest that manufacturing companies

in Sri Lanka pay more attention to liquidity ratios, as they have a significant impact on their profitability.

Dipak R. Tank &Dr. Girishchandra M. Purani (2020) in their research paper "A Study on Liquidity analysis of Uttar Gujarat Vij Company Limited (UGVCL) " goal of their study is to determine the liquidity position of UGVCL companies. They spanned a five-year period, from 2014-15 to 2018-19. They used a variety of accounting and statistical tools. Liquidity ratio, current ratio, and so on. They came to the conclusion that the company's current ratio is not performing well, whereas the liquidity ratio is performing well. The absolute liquidity ratio indicates that the company is performing well. The company has a strong liquidity position.

3. Research Methodology

3.1 Objective of study

To examine the liquidity position of selected Oil Refinery Companies in India.

3.2 Hypotheses:

- **Ho:** There is no significant difference in liquidity ratio of selected Oil Refinery Companies in India during study period.
- **H1:** There is significant difference in liquidity ratio of selected Oil Refinery Companies in India during study period.

3.3 Data collection

The present study is based on secondary data relating to this study are extracted from the National Stock Exchange of India (www.nseindia. com), Money Control (www.moneycontrol. com), and the annual reports of the companies available on their websites.

3.4 Period of study

The time period for which the companies are studied is of five years from 2016-'17 to 2020-'21.

3.5 Selection of Sample

In order to study Oil Refinery industry five major companies of the industry were chosen. These were;

1) Indian oil corporation
2) Bharat petroleum corporation limited
3) Hindustan petroleum corporation limited
4) Chennai petroleum corporation
5) Maglore refinery and petrochemical limited

3.6 Tools and Technique

Accounting Technique: In order to achieve the objective of studying the liquidity of sample Oil Refinery companies five liquidity ratios are calculated: current ratio, quick ratio, inventory turnover ratio, debtor turnover ratio and days working capital

Statistical tools: The statistical analysis was carried out using descriptive statistics and the ANOVA test, with a 5% level of significance.

3.7 Limitation of study

- This study is about selected Oil Refinery companies only.
- The study was limited to only five years financial data (2016-17 to 2020-21).
- The study is purely based on secondary data

4. Analysis and Interpolation of Result

To examine the data, descriptive statistics such as the trend of defined liquidity metrics from 2016-'17 to 2020-'21, mean, standard deviation, minimum, and maximum are employed. The ANOVA test is used to look at how different Oil Refinery companies' liquidity on various parameters.

- **Current Ratio:**

Current ratio is measured by dividing current asset by current liabilities.

CURRENT RATIO					
	IOC	BPCL	HPCL	CPCL	MRPL
2016-17	0.64	0.69	0.54	0.83	0.8
2017-18	0.64	0.62	0.58	0.59	0.61
2018-19	0.55	0.78	0.53	0.46	0.59
2019-20	0.46	0.49	0.46	0.28	0.64
2020-21	0.51	0.7	0.51	0.35	0.6
MAX	0.64	0.78	0.58	0.83	0.8
MIN	0.46	0.49	0.46	0.28	0.59
AVG.	0.56	0.656	0.524	0.502	0.648
SD	0.079687	0.108766	0.043932	0.217647	0.087006
COMPANIES AVG.		0.578			

It's clear from the above table that the Current ratio in selected Oil Refineries Companies show fluctuation trend during study period. The average Current ratio of selected Oil Refineries Companies is 0.578. BPCL and MRPL have satisfactory average Current ratio while IOC, HPCL and CPCL have not satisfactory average Current ratio. Standard Deviation of CPCL is high 0.217647 which show high fluctuation trend in company Current ratio.

Test of Hypotheses: Following hypothesis has been tested by ANOVA test

Ho: There is no significant difference in Current ratio of selected Oil Refinery Companies in India during study period.

H1: There is significant difference in Current ratio of selected Oil Refinery Companies in India during study period.

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	0.1239	4	0.030975	3.656305	0.028547	3.055568
Within Groups	0.127075	15	0.008472			
Total	0.250975	19				

In ANOVA table calculate value of F-test with corresponding P-value is given. F-value is 3.656305and P-value is 0.028547. Here P-value is less than 0.05. Hence the given null hypothesis is rejected I. e. There is significant difference in Current ratio of selected Oil Refinery Companies in India during study period.

- **Quick Ratio:**

The quick ratio is a measure of a company's ability to meet short-term obligations with its most liquid assets and is an indicator of its short-term liquidity position.

QUICK RATIO					
	IOC	BPCL	HPCL	CPCL	MRPL
2016-17	0.28	0.35	0.27	0.61	0.68
2017-18	0.32	0.38	0.35	0.28	0.51
2018-19	0.42	0.47	0.42	0.39	0.58
2019-20	0.44	0.43	0.36	0.26	0.48
2020-21	0.25	0.38	0.25	0.21	0.54
MAX	0.44	0.47	0.42	0.61	0.68
MIN	0.25	0.35	0.25	0.21	0.48
AVG.	0.342	0.402	0.33	0.35	0.558
SD	0.08438	0.047645	0.069642	0.159531	0.077589
COMPANIES AVG.		0.3964			

It's clear from the above table that the Quick Ratio in selected Oil Refineries Companies show fluctuation trend during study period. The average Quick Ratio of selected Oil Refineries Companies is 0.3964. BPCL and MRPL have satisfactory average Quick Ratio while IOC, HPCL and CPCL have not satisfactory average Quick Ratio. Standard Deviation of CPCL is high 0.159531which show high fluctuation trend in company Quick Ratio.

Test of Hypotheses: Following hypothesis has been tested by ANOVA test

Ho: There is no significant difference in Quick Ratio of selected Oil Refinery Companies in India during study period.

H1: There is significant difference in Quick Ratio of selected Oil Refinery Companies in India during study period.

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	0.13423	4	0.033558	7.507271	0.001577	3.055568
Within Groups	0.06705	15	0.00447			
Total	0.20128	19				

In ANOVA table calculate value of F-test with corresponding P-value is given. F-value is 7.507271and P-value is 0.001577. Here P-value is less than 0.05. Hence the given null hypothesis is rejected I. e. There is significant difference in Quick Ratio of selected Oil Refinery Companies in India during study period.

- **Inventory Turnover Ratio**

The inventory turnover ratio, also known as the stock turnover ratio, is a metric for determining how many times a company can sell and replace its stock of goods in a given period of time.

Inventory Turnover Ratio					
	IOC	BPCL	HPCL	CPCL	MRPL
2016-17	6.9	12.23	11.54	12.66	14.71
2017-18	7.31	13.28	13.25	9.28	13.32
2018-19	8	15.67	14.71	10.77	12.44
2019-20	8.6	16.04	15.02	20.61	15.62
2020-21	6.24	11.28	9.45	9.29	7.72
MAX	8.6	16.04	15.02	20.61	15.62
MIN	6.24	11.28	9.45	9.28	7.72
AVG.	7.41	13.7	12.794	12.522	12.762
SD	0.922388	2.094648	2.323194	4.729183	3.074072
COMPANIES AVG.		11.8376			

It's clear from the above table that the Inventory Turnover Ratioin selected Oil Refineries Companies show fluctuation trend during study period. The average Inventory Turnover Ratioof selected Oil Refineries Companies is 11.8376. BPCL, HPCL, CPCL and MRPL have satisfactory average Inventory Turnover Ratiowhile IOC has not satisfactory average Inventory Turnover Ratio. Standard Deviation of CPCL is high 4.729183which show high fluctuation trend in company Inventory Turnover Ratio.

Test of Hypotheses: Following hypothesis has been tested by ANOVA test

Ho: There is no significant difference in Inventory Turnover Ratio of selected Oil Refinery Companies in India during study period.

H1: There is significant difference in Inventory Turnover Ratioof selected Oil Refinery Companies in India during study period.

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	102.6927	4	25.67318	2.406204	0.095486	3.055568
Within Groups	160.0436	15	10.66957			
Total	262.7363	19				

In ANOVA table calculate value of F-test with corresponding P-value is given. F-value is 2.406204and P-value is 0.095486. Here P-value is higher than 0.05. Hence the given null hypothesis is not rejected I. e. There is no significant difference in Inventory Turnover Ratio of selected Oil Refinery Companies in India during study period.

- **Debtor Turnover Ratio:**

The debtor turnover ratio, also known as the accounts receivable turnover ratio, is a measure of a company's debt collection speed. In simple terms, it shows how many times average debtors (receivables) are turned over in a given year.

Debtors Turnover Ratio					
	IOC	**BPCL**	**HPCL**	**CPCL**	**MRPL**
2016-17	42.86	58.42	45.32	30.73	17.23
2017-18	43.02	47.71	45.52	24.43	18.35
2018-19	39.87	50.29	49.03	25.89	24.91
2019-20	33.3	48.06	56.14	42.48	30.32
2020-21	26.9	35.8	43.23	138.6	18.61
MAX	43.02	58.42	56.14	138.6	30.32
MIN	26.9	35.8	43.23	24.43	17.23
AVG.	37.19	48.056	47.848	52.426	21.884
SD	6.97023	8.104513	5.081601	48.69172	5.594433
COMPANIES AVG.		**41.4808**			

It's clear from the above table that the Debtor Turnover Ratio in selected Oil Refineries Companies show fluctuation trend during study period. The average Debtor Turnover Ratio of selected Oil Refineries Companies is 41.4808. BPCL, HPCL, and CPCL have satisfactory average Debtor Turnover Ratio while IOC and MRPL have not satisfactory average Debtor Turnover Ratio. Standard Deviation of CPCL is high 48.69172 which show very high fluctuation trend in company Debtor Turnover Ratio.

Test of Hypotheses: Following hypothesis has been tested by ANOVA test
Ho: There is no significant difference in Debtor Turnover Ratio of selected Oil Refinery Companies in India during study period.
H1: There is significant difference in Debtor Turnover Ratio of selected Oil Refinery Companies in India during study period.

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	2812.49	4	703.1225	1.125455	0.381497	3.055568
Within Groups	9371.173	15	624.7449			
Total	12183.66	19				

In ANOVA table calculate value of F-test with corresponding P-value is given. F-value is 1.125455and P-value is 0.381497. Here P-value is higher than 0.05. Hence the given null hypothesis is not rejected I. e. There is no significant difference in Debtor Turnover Ratio of selected Oil Refinery Companies in India during study period.

- **Number of Day in Working Capital:**

The number of days it takes a company to convert its working capital into revenue is referred to as days working capital.

Numbers of Day in Working Capital					
	IOC	**BPCL**	**HPCL**	**CPCL**	**MRPL**
2016-17	-26.65	-16.83	-22.92	21.94	-3.25
2017-18	-17.78	-13.61	-18.21	-9.16	-10.55
2018-19	-9.45	-16.02	-20.22	9.2	7.96
2019-20	-6.86	-22.27	-21.86	-2.12	-12.7
2020-21	-16.35	-21.35	-16.75	15.59	15.37
MAX	-6.86	-13.61	-16.75	21.94	15.37
MIN	-26.65	-22.27	-22.92	-9.16	-12.7
AVG.	-15.418	-18.016	-19.992	7.09	-0.634
SD	7.769522	3.674763	2.539718	12.70936	12.04931
Companies AVG.	**-9.394**				

It's clear from the above table that the Days Working Capital in selected Oil Refineries Companies show fluctuation trend during study period. The average Days Working Capital of selected Oil Refineries Companies is-9.394. IOC, BPCL, and HPCL have satisfactory average Days Working Capital while CPCL and MRPL have not satisfactory average Days Working Capital. Standard Deviation of CPCL is high 12.70936which show very high fluctuation trend in company Days Working Capital.

Test of Hypotheses: Following hypothesis has been tested by ANOVA test
Ho: There is no significant difference in Days Working Capital of selected Oil Refinery Companies in India during study period.
H1: There is significant difference in Days Working Capital of selected Oil Refinery Companies in India during study period.

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	1755.792	4	438.948	6.019839	0.004275	3.055568
Within Groups	1093.754	15	72.9169			
Total	2849.546	19				

In ANOVA table calculate value of F-test with corresponding P-value is given. F-value is 6.019839and P-value is 0.004275. Here P-value is less than 0.05. Hence the given null hypothesis is rejected I. e. There is significant difference in Days Working Capital of selected Oil Refinery Companies in India during study period.

5. Conclusion

The Oil Refinery Companies, as well as the Indian economy as a whole, had a difficult time during the study period. The economic downturn officially started in 2019-20. Furthermore, it was a year marked by international economic shocks. The downturn was caused by coronavirus, and it spread all over the world. It was extremely difficult for all businesses to operate efficiently during these challenging times.

In this context, the research undertaken here aims to examine the liquidity of the selected Oil Refinery Companies in India. The five-year period chosen for analyzing the liquidity position of selected Oil Refinery Companies in India was quite a fluctuated. The result of ANOVA there is significant difference in Current Ratio, Quick Ratio and Days Working Capital of selected Oil Refinery Companies in India during study period, while there is no significant difference in Inventory Turnover Ratio and Debtor Turnover Ratio of selected Oil Refinery Companies in India during study period.

References

[1] Durrah, O., Rahman, A. A. A., Jamil, S. A., &Ghafeer, N. A. (2016). Exploring the relationship between liquidity ratios and indicators of financial performance: An analytical study on food industrial companies listed in Amman Bursa. *International Journal of Economics and Financial Issues*, *6* (2).
[2] Rashid, C. A. (2018). Efficiency of financial ratios analysis for evaluating companies' liquidity. *International Journal of Social Sciences & Educational Studies*, *4* (4), 110.
[3] Madushanka, K. H. I., &Jathurika, M. (2018). The impact of liquidity ratios on profitability. *International Research Journal of Advanced Engineering and Science*, *3* (4), 157-161.
[4] Dipak R. Tank & Dr. Girishchandra M. Purani (2020) A Study on Liquidity analysis of Uttar Gujarat Vij

Company Limited (UGVCL) international journal of creative research thought (IJCRT) volume-8 issue-12
[5] www.nseindia. com
[6] www.moneycontrol. com