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MANAGEMENT OF WORKING CAPITAL AND ITS IMPACT ON PROFITABILITY: AN ANALYTICAL STUDY OF SELECT OIL COMPANIES IN PUBLIC SECTOR IN INDIA

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ABSTRACT :

Working Capital is considered as the life blood of any business organization. The business organization cannot make progress without sufficient working capital. Insufficient working capital means shortage of inputs, while excess of working capital leads to extra cost. So the amount of working capital to be maintained in each and every organization should be neither more nor less than what is actually required. The management of the organization has therefore to see that funds invested as working capital in their organization earn return at least as much as they would have earned return if it invested anywhere else. Hence, management of working capital plays an important role in the success of business organization because of its effect on profitability and liquidity.India retained its place as thethird-largest energy consumer in the world with oil and gas accounting for 37 per cent of its total energy consumption in the year 2017.The oil and gas sector is among the six core industries in India and plays a major role in influencing decision making for all the other important sections of the economy.The Oil and Petroleum Industry in India is one of the highly competitive and fastest growing industries in the country. The purpose this study is to analyze the relationship between the working capital and profitability of the selected oil companies in Public Sector in India. Secondary data collected from the three oil companies in public sector in India for the ten year period was used for analysis. Pearson's Correlation and Multiple Regression were applied to analyze the data. The study found that there was a moderate relationship between Working Capital and Profitability of the select oil companies in India. The study recommended the management to take active steps to maintain adequate working capital and manage the same in order to increase the profitability of the oil companies.

KEYWORDS : *Working Capital, Profitability, Operating Profit, Inventories, Debtors, Other Liquid Assets.*

INTRODUCTION

Finance is considered as wheel of the business and working capital is considered as life blood of the organization. An organization may exist without making profits but cannot survive without having sufficient working capital for its day to day operation of the business. The working capital should have neither excess nor inadequate in order to carry out the business activities successfully. Both excess as well as shortage of working capital are harmful to the business organization. Working Capital Management is an important component and area of financial management of the companies in the world. The objective of the proper managementof working capital is to guarantee thecontinuousness in the operations of an organization and that it has adequate funds or capital to satisfy both current liabilities and operating expenses. The management of working capitallargely involves the management

of stock, accounts receivables, cash and bank balance and accounts payables. The basic idea of working capital management is to provide ample support for smooth and efficient functioning of day to day business operations by striking a trade between the liquidity and profitability. In a manufacturing industry like oil industry where capital investment is huge, increasingand scarcity in nature, thearea of management of working capital is considered as added significant as it extremelyimpactsthe liquidity and profitability of the organization.The present study is conducted to analyse the relationship between working capital and profitability of the select oil companies in Public Sector in India.

STATEMENT OF PROBLEM

Working Capital is the investment in current assets and current liabilities which are liquidated in a year or less and is very critical for the day-to-day operations of the business organization. Working Capital is the relationship between current assets and current liabilities. Management of working capital is imperative to carry out the routine activities of a business organization.Maintaining an adequate and proper liquidity indicates that funds are kept incurrent assets thus makingthem not available for operational use or for investment purposes for higher returns.

Thus, there isan opportunity cost related with the maintenance of those current assets and this might affectthe overall profitability of the organization. In other words, increasing profitability would incline to reduce the liquidity of the organization and too much consideration on liquidity would affect the profitability. According toRaheman and Nasr (2007), the final goal for any firm is to maximize theprofitability of the firm by preserving the liquidity.Hence, efficient working capital management requires a proper balance between production and deployment of these funds without which either shortage of funds would cause impediment in the smoother working of the organization or excess funds would prevent the organization from conducting its business efficiently and effectively. Therefore, the main objective of working capital management is to organize the required funds on the right time from the right source and for the right period, so that a balance between liquidity and profitability may be attained.Empirical researches on the relationship between working capital and profitability in oil sector appears to be scanty yet, India boasts one of the fastest-growing economies in the world where the contribution of oil sector to the growth of the country is remarkable.

OBJECTIVES OF THE STUDY

The main objective of the study is to analyze the relationship between working capital and profitability of the select oil companies in India during the period of study i.e., 2008-09 to 2017-18. The study is also conducted to analyze the relationship between the components of working capital and their influence on profitability of the select oil companies in India.If a firm maintains huge amount of current assets its profitability will be affected though itprotects liquidity. If a firm maintains low current assets, its liquidity is of course weak but thefirm's profitability will be high. The tradeoff between liquidity and profitability should be maintained.

SIGNIFICANCE OF THE STUDY

Generally, the amount of working capital required for the business operations is about 30% to 40% of the total investment of the organization. The returns earned by the organization largely depends on the investment made in working capital. However, excessive levels of current assets can certainly result in an organization realizing an insufficient return on investment whereasorganization with less current assets may incur scarcities and difficulties in maintaining smooth operations (Van Horne and Wachowicz, 2000). Consequently, the management of working capital is an essential element of corporate finance since it directly affects the liquidity and profitability of an organization. One of the major objective of management of finance is maximizing shareholders' wealth which is only possible if the organizationearns sufficient profits to be distributed as payment of dividends to the shareholders.

However, the amount of profit is mainly dependent on the sales but sales do not getconverted into cash immediately. Therefore, there is a time gap between the sale of goods and recovery ofcash from the goods sold from customers or debtors. Funds also get blocked in the form of working capital

for purchasing stock, paying bills salaries and wages andother expenses so as to maintain the sale activity. If an organization is profitable one, it would generate cash from its operations from its own sources. Therefore, thetwo main objectives of the financial management of an organization with respect to the profitability and liquidity needs to be synchronized and managed properly. This study is significant because of the revealing the relationship between working capital and profitability of public sector companies in Indian Oil Industry which is one of the important industry in contributing to the growth of the country.

REVIEW OF LITERATURE

Ghosh and Maji (2004) conducted a research on the efficiency of the working capital management in cement industry in India. Ramachandran and Janakiraman (2007) investigated the relationship between working capital management and profitability (EBIT) in paper industry in India. Kaur (2010) carried out a detailed study onworking capital management of companies in tyre industry in India.Melita, Maria and Petros (2010) conducted an empirical research to analyse the impact of working capital management on the financial performance of organization. The researcherspostulated that working capital management leads to improved profitability. They applied multivariate regression analysis and the results showed that the cash conversion cycle (CCC) and all its major components namely are related with the profitability of the organisation. Hassan, Liaqat, Ch. Abdul and Muhammad (2011) conducted study to investigate the effect of working capital management on the profitability of the organization without compromising the liquidity of the organization.The findings of the study revealed that significant relationships exist between working capital components with the market value and profitability of the organization.

From the above literature review, it is found that there is no research on the relationship between working capital and profitability in oil industry in India and this study is conducted to fill the research gap in this respect.

SCOPE OF THE STUDY

The scope of study is a general outline of what the study will cover. The focal point of the study is to analyze the relationship between Working Capital and Profitability of select public sector oil companies in India. This study is limited to three oil companies in Public Sector only (Indian Oil Corporation Limited (IOCL), Bharat Petroleum Corporation Limited (BPCL) and Hindustan Petroleum Corporation Limited (HPCL)). The scope of study area is confined to public sector oil companies in India. The scope of the study is also restricted for the period of ten years from the year 2008-09 to 2017-18.This study is conducted to suggest some measures to improve the present level of working capital in order to improve the profitability of oil companies in India.

RESEARCH METHODOLOGY

Research methodology is a "way of solving the problem in a systematic manner". The methodology followed for this study is given below:

TABLE 1
RESEARCH METHODOLOGY

Type of Research conducted	Descriptive & Exploratory type of research
Approach of Research followed	Quantitative Approach of research
Population & Sampling Unit of research	Oil Companies in Public Sector in India
Sample size	Three Oil Companies in Public Sector in India
Study Area	India
Method/Technique of Sampling	Purposive Sampling, a technique of Non-Probability Sampling

Type of Data collected	Secondary Data
Sources of Primary Data	Annual Reports and Websites of the companies
Sources of Secondary Data	Online Journals, Magazines, Reports, Books, Newspapers, Research Articles, websites, Internet, etc.
Data collection period	April 2008 to March 2018 – Ten Years
Software employed for data feeding & analysis	Microsoft Word & Excel 2010 and SPSS (Ver. 20)

ANALYSIS OF DATA AND RESULTS

The study employed descriptive and inferential statistical tools like correlation and multiple regression to analyze the data.

TABLE 2
WORKING CAPITAL OF OIL COMPANIES IN PUBLIC SECTOR
(INR in Crores)

YEAR	OIL COMPANIES IN PUBLIC SECTOR			
	IOCL	BPCL	HPCL	INDUSTRY
2008 – 09	-16855.29	-13,592.65	734.54	-29713.40
2009 – 10	-9479.56	-2,261.36	-5,429.65	-17170.57
2010 – 11	1344.35	-6,596.97	-5,121.60	-10374.22
2011 – 12	1175.53	-7,222.22	-5,937.30	-11983.99
2012 – 13	4164.90	-4,303.59	-5,032.01	-5170.70
2013 – 14	-742.47	1,070.56	4,429.52	4757.61
2014 – 15	-870.33	-2,352.04	3,904.18	681.81
2015 – 16	-9377.95	-3,622.99	699.69	-12301.25
2016 – 17	-35817.77	-9,231.14	-12,835.95	-57884.86
2017 – 18	-32827.31	-7,893.70	-10,503.64	-51224.65
AVERAGE WORKING CAPITAL	-9928.59	-5600.61	-3509.222	-19038.42

Source: Computed from Annual Reports of the companies

From the above table it is found that there were negative working capital (average) in all the three oil companies along with oil industry during the period of study. There is an increasing trend in the negative working capital of all the oil companies except BPCL during the period of study. In case of IOCL, there were positive working capital in three out of ten years. In case of HPCL, there were positive working capital in four out of ten years. The negative values of working capital indicates that the current liabilities were more than their current assets of the oil companies. The negative value of working capital also showed that these companies were not properly managing their working capital during the study period.

TABLE 3
OPERATING PROFIT OF OIL COMPANIES IN PUBLIC SECTOR
(INR in Crores)

YEAR	OIL COMPANIES IN PUBLIC SECTOR			
	IOCL	BPCL	HPCL	INDUSTRY
2008 – 09	7350.24	3166.36	3,301.28	13817.88
2009 – 10	14881.40	3432.43	3,313.71	21627.54
2010 – 11	11842.09	3511.92	3,481.32	18835.33

2011 – 12	**9066.06**	**3683.76**	**4,131.34**	**16881.16**
2012 – 13	**12050.65**	**5860.93**	**4,261.66**	**22173.24**
2013 – 14	**15106.23**	**7308.06**	**5,237.73**	**27652.02**
2014 – 15	**11438.12**	**7998.61**	**5,666.59**	**25103.32**
2015 – 16	**19916.43**	**11214.12**	**7,905.14**	**39035.69**
2016 – 17	**29766.67**	**11538.66**	**10,643.69**	**51949.02**
2017 – 18	**36012.72**	**12031.26**	**10,671.93**	**58715.91**
AVERAGE OPERATING PROFIT	**16,743.06**	**6974.611**	**5861.439**	**29579.11**

Source: Computed from Annual Reports of the companies

From the above table it is found that there is an increasing trend in Operating Profit (EBIT) in all the three oil companies along with oil industry during the period of study. During the study period, there is more than five times increase in Operating Profit in case of IOCL, more than four times increase inOperating Profit in case of BPCL, more than three times increase in Operating Profit in case of HPCL and more than four times increase in Operating Profit in case of overall Industry. Overall the table showed that there is a considerable increase in Operating Profit of select oil companies during the study period.

H_0: There is no significant relationship between Working Capital and Profitability of select oil companies in Public Sector in India.

A Pearson product-moment correlation was run to determine the relationship between Working Capital and Profitability of select oil companies in Public Sector in India.

TABLE 4
WORKING CAPITAL –PROFITABILITY

VARIABLES	N	*'r'* VALUE	*P* - VALUE	RELATIONSHIP	REMARKS	
					SIGNIFICANT	RESULT
Working Capital– Operating Profit (IOCL)	10	-0.817**	0.004	Negative	Significant	Rejected
Working Capital – Operating Profit (BPCL)	10	0.086	0.812	Positive	Insignificant	Accepted
Working Capital – Operating Profit (HPCL)	10	-0.474	0.166	Negative	Insignificant	Accepted
Working Capital – Operating Profit (Industry)	10	-0.694*	0.026	Negative	Significant	Rejected

Source: Secondary Data
****. Correlation is significant at the 0.01 level (2-tailed).**
***. Correlation is significant at the 0.05 level (2-tailed).**

As the P value is lesser than Sig. Value (0.01 and 0.05) in case of IOCL and overall Industry, the Null Hypotheses are rejected. There is a negative correlation between Working Capital and Operating Profit of IOCL (r = -0.817) and overall oil Industry (r = -0.694). There is very small and insignificant positive correlation (r = 0.086) between Working Capital and Operating Profit was found in case of BPCL and insignificant moderate negative correlation (r = - 0.474) was found between Working Capital and Operating Profit of HPCL.

As these oil companies have negative working capital, there may be the relationship with profitability. Overall, it is inferred that there is a relationship between Working Capital and Profitability of select oil companies in Public Sector in India.

MULTIPLE REGRESSION ANALYSIS

Multiple Regression Analysis was employed to determine the best linear combination of Working Capital components (Inventories, Debtors and other Liquid Assets) for predicting Profitability (Operating Profit) of the oil companies in public sector in India.

WORKING CAPITAL – PROFITABILITY OF IOCL

TABLE 5
REGRESSION ANALYSIS - IOCL

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-2876.428	5959.863		-.483	.646
	Inventories - IOCL	.716	.190	1.053	3.762	.009
	Debtors - IOCL	.384	1.587	.083	.242	.817
	Other Liquid Assets - IOCL	-.552	.113	-1.022	-4.878	.003

Dependent Variable: PROFITABILITY (Operating Profit)

This combination of two out of three variables relating to the components of Working Capital significantly predicts the dependent variable i.e., Profitability of IOCL, F (3, 6) = 16.232, p = .003 which is lesser than .001 (Sig. Value 2-tailed) and Adjusted R Square = 0.835. Out of three independent variables, Inventories (1.053) is the strongest influencing factors which predicting dependent variable – Profitability. Other Liquid Assets negatively influence the Profitability and Debtors does not predict Profitability significantly. The beta weights suggest that the Inventoriesonly contribute most (1.053) to predict Profitability of IOCL.

WORKING CAPITAL – PROFITABILITY OF BPCL

TABLE 6
REGRESSION ANALYSIS - BPCL

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1817.461	4631.010		.392	.708
	Inventories - BPCL	.864	.332	.991	2.601	.041
	Debtors - BPCL	-.714	.932	-.308	-.766	.473
	Other Liquid Assets - BPCL	-.439	.321	-.399	-1.370	.220

Dependent Variable: PROFITABILITY (Operating Profit)

This combination of one out of three variables relating to the components of Working Capital significantly predicts the dependent variable i.e., Profitability of BPCL, F (3, 6) = 10.112, p = .012 which is lesser than .05 (Sig. Value 2-tailed) and Adjusted R Square = 0.611. Out of three independent variables, Inventories (0.991) is the strongest influencing factors which predicting dependent variable – Profitability. Debtors and Other Liquid Assets negatively influence the Profitability but they do not predict Profitability as they are insignificant. The beta weights suggest that the Inventories only contribute most (0.991) to predict Profitability of BPCL.

WORKING CAPITAL – PROFITABILITY OF HPCL

TABLE 7
REGRESSION ANALYSIS - HPCL

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1889.860	3115.514		-.607	.566
	Inventories - HPCL	.317	.277	.392	1.147	.295
	Debtors - HPCL	3.333	1.063	1.346	3.135	.020
	Other Liquid Assets - HPCL	-.919	.358	-1.223	-2.569	.042

Dependent Variable: PROFITABILITY (Operating Profit)

This combination of two out of three variables relating to the components of Working Capital significantly predicts the dependent variable i.e., Profitability of HPCL, F (3, 6) = 9.663, p = .043 which is lesser than .05 (Sig. Value 2-tailed) and Adjusted R Square = 0.602. Out of three independent variables, Debtors (1.346) is the strongest influencing factors which predicting dependent variable – Profitability. Other Liquid Assets negatively influence the Profitability and Inventories does not predict Profitability significantly. The beta weights suggest that the Debtors only contribute most (1.346) to predict Profitability of HPCL.

FINDINGSAND SUGGESTIONS

The working capital of all the three oil companies showed a negative values in majority of the years during the period (ten years) of study. The Profitability (Operating Profit) showed a constant increase in all the three oil companies during the same period. The study found that even though there are negative working capital, there is a significant relationship between Working Capital and Profitability of select oil companies in Public Sector in India. Two of out of three oil companies, Inventories significantly predict the Profitability. The study suggests that the management of above oil companies should take proactive steps to maintain the adequate level of working capital in order to attain the desirable profitability. The performance of other liquid assets should also be improved.

LIMITATIONS OF THE STUDY

The study is limited to ten years (2008-09 to 2017-18) and also limited to the three oil companies such as IOCL, BPCL and HPCL.The study considered only 'Operating Profit' for the purpose of Profitability and other Profitability indicators like Gross Profit, Net Profit, etc., were not taken into consideration.The report exhibits the values based on Historical Costing and not taken into consideration of price level changes.Limitations that result out of the secondary data may also be possible.

CONCLUSION

From the study, it is concluded that the level of working capital maintained by the select oil companies in public sector in India is not up-to the mark. Even though, the study showed the relationship between working capital and profitability, it is not well acceptable level. The contribution of Inventories (out of three components of working capital) to the Profitability of the oil companies is remarkable. The study has recommended the oil companies in public sector to improve the present level of working capital by managing the current assets effectively and efficiently in order to achieve better profitability in the future.

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