IOSR Journal of Business and Management (IOSR-JBM)
e-ISSN: 2278-487X, p-ISSN: 2319-7668. Volume 20, Issue 2. Ver. VI (February. 2018), PP 37-47
www.iosrjournals.org

A Critical Study on Impact of Working Capital Management on Profitability of Manufacturing Industry in India (A Study on Paint Industry)

[1]MS. Vasavi Pravallika, [2]DR. K.S. Sekhara Rao
[1]*MBA Student, KLU Business School, K L University, Greenfields, Vaddeswaram, Andhra Pradesh, India*
[2]*Assistant Professor, KLU Business School, K L University, Greenfields, Vaddeswaram, Andhra Pradesh, India.*
Corresponding Author: MS. Vasavi Pravallika

Abstract: *After making a thorough review of literature the observation is that profitability of any firm has significant importance on working capital management of those particular firms which refers to the management of working capital, or to the management of current assets. A firm's working capital consists of its investments in current assets, which includes short-term assets—cash and bank balance, inventories, receivable and marketable securities. Firms can achieve optimal management of working capital by making the trade-off between profitability and liquidity. The profitability liquidity trade off is important because if working capital management is not given due considerations then the firms are likely to fail and face bankruptcy. Working capital management is one of the most important areas while making the comparisons of liquidity and profitability within the firms, involving the decision of the amount and composition of current assets and the financing of these assets. This study explores the impact of working capital management on the profitability of firms in the paint industry. The efficiency of working capital management can been measured by Inventory Turnover Period, Account Receivable Period, Days Payables Outstanding, Current Ratio and Quick assets ratio. This study attempted to fill the research gap by analyzing and test the relationship between the most important working capital variables. There is a positive correlation between some variables like return on assets and inventories maintained and negative correlation between return on assets and average receivable days, average collection period done in the paint industry.*

Key Words: *Working Capital Management, Inventory management, Receivables Management, Average Collection Period, Average Inventory Period, Average Payment Period, Cash Conversion Cycle, Return on Assets, Sales Growth, Paint industry.*

Date of Submission: 03-02-2018 Date of acceptance: 20-02-2018

I. Introduction

Many studies have found that the profitability can be increased with an the maintenance of Working Capital Management which means allocating cash flows to where and when it is required results in increase in the liquidity and gradually increasing in the profitability. The purpose of this study is to develop the research on the relationship between Working Capital Management and profitability by examining how it is impacted in different company.

A quantitative research has been done by collecting the data from the selected companies and formulating hypothesis to analyze the relationship between the working capital and profitability in those firms. For that purpose the variables are considered as Earnings of the company which is dependent variable which significantly shows the profitability and current ratio, liquid ratio, Debtors Turnover ratio, Inventory Converison period as the independent variables for those companies. This study mainly focuses on whether there is any impact on profitability of those companies due to working capital or any other factors are having impact. This study found that some companies are having impact on their profitability due to not allocating their working capital equally on the proper resources that they require and for some companies have shown that there is some impact. This research is done in some of the paint companies which also shows that every type of company is having a need of roper maintenance of working capital which will certainly have some impact based on their operations.

II. Review of Literature

For conducting the study to find whether there is any impact of working capital management on the profitability of the firms by considering some working capital variables like current ratio, liquid ratio, working capital turnover ratio, Inventory conversion period, Average payment Period, Debtors turnover ratio. For this purpose various articles on these variables have been reviewed for the purpose of understanding that will there be any impact or not.

Richard Kofi Akoto, Dadson Awunyo - Vitor et.al(2013) "Working Capital Management and Profitability: Evidence from Ghanain listed manufacturing firms", Journal of Economics from and International Finance found that managers of the firm should follow the working capital management policies in order to overcome liquidity crisis by finding out the relation between dependent and independent variables and also managers should follow to maintain the optimum level of current assets in order to overcome the current liabilities which improves the value of the firm which results in the growth of the company.

Makori Mogaka Daniel, Jagongo Ambrose(2013)**"**Working Capital Management and firm Profitability: Empirical Evidence from Manufacturing and construction Firms listed on Nairobi Securities Exchange, Kenya**"** examined that the manufacturing Firms in Kenya have large amounts of cash invested in working capital so they have good result of profitability and researcher suggested to reduce number of account receivable days and increase in Account payment period

and inventories in order to increase the value of shareholders which will result in good profit which shows the growth of the firm.

Srinivas K T(2010)**"**A Study on Working Capital Management through Ratio Analysis with Reference to Karnataka Power Corporation Limited" found that suggest the company that the KPCL is only focusing on one customer and so it is better to have a advisable look for other customers, the management of the company should take some effective measures to recover the outstanding performance of the company. In the same way the researcher says that proper coordinated outflow and inflow of cash will maintain better working capital management, this is done through the improvement in credit collection and increasing their sales.

Eljelly, (2004) elucidated that efficient liquidity management involves planning and controlling current assets and current liabilities in such a manner that eliminates the risk of inability to meet due short-term obligations and avoids excessive investment in these assets. The study found that the cash conversion cycle was of more importance as a measure of liquidity than the current ratio that affects profitability.

Ghosh and Maji, (2003) in this paper made an attempt to examine the efficiency of working capital management of the Indian cement companies during 1992 – 1993 to 2001 – 2002. Findings of the study indicated that the Indian Cement Industry as a whole did not perform remarkably well during this period.

Shin and Soenen, (1998) highlighted that efficient Working Capital Management was very important for creating value for the shareholders. They found a strong negative relationship between lengths of the firm's net-trading Cycle and its profitability.

Deloof,(2003) discussed that most firms had a large amount of cash invested in working capital. The negative relationship between accounts payable and profitability is consistent with the view that less profitable firms wait longer to pay their bills.

Gangadhar (1981) study examined the statistical trends in working capital position among medium, large and small public, private limited companies in the Indian corporate sector during 1961 – 76. This study also revealed that in case of medium and large scale publics limited companies there appeared to be a lead – lag relationship between gross fixed assets and current assets.

Ghosh (1983) study proves in to the existing practice of working capital in crane manufacturing industry in India. The study also revealed that payable to the suppliers were equally delayed keeping highest portion of payable pending for more than allowed period.

Akkihal (1984) study of 94 small scale industries in Hubli Dharwad Municipal Corporation (HDMC) in the state of Karnataka application of ratio analysis has revealed that the mismanagement of working capital had adverse effect on the performance of the industries.

Khandelwal (1985) attempted to investigate in to working capital management process and practices among the selected units between the years 1975 – 1980. The study revealed that the sample firms held more investments in inventories than required and management of receivables constituted as much as 50% of total current assets.

Mukerjee (1986) in his study on "management of working capital in public Enterprises" in respect of central government industrial undertakings, and covering a period from 1974 – 75 to 1978-79 has found that, the current assets increased due to the accumulation of inventories and current liabilities increased due to increase in financing through payables.

Panda (1986) study of small scale units in the state of Orissa was found that long – term funds were highly limited to the firms and hence majority of small scale industries depended on short – term credit in meeting working capital requirements.

Jain (1988) in his study among ten manufacturing trading and services industries in the state of Rajasthan, brought out various working capital management practices followed by the selected companies. The study found out that the companies had both over investment and under investment problems.

Sinha & et.al (1988) study on analysis of working capital management in fertilizers Corporation of India and Gujarath state Fertilizers Corporation. The analysis revealed that a he portion of funds was tied up as working capital especially in inventories and receivables.

Mohan (1991) study examines various issues related to working capital management among selected (six companies) private large – scale companies in the state of Andhra Pradesh during the period from 1977 – 1986. The study revealed that investments in current assets in sample companies was more than that of fixed assets and inventories constituted highest percentage of total current assets in the sample companies.

Rao and Rao (1991) in their study among a few public enterprises belonging to manufacture sector in the state of Karnataka revealed that the working capital planning and control was found to be disorderly and ineffective and hence, the urgent need for full focus on working capital management.

Jain (1993) studied seven paper companies in Indian to analyze the basic components of working capital. The study revealed that the current ratio in public sector undertakings during the study period was found to be highly erratic while the same in private sector undertakings registered continuous decrease.

Research Gap

Although several research works has been done by the scholars on different aspects of working capital management, it has been observed that there is a lot of ambiguities in profitability of the paint industry. The last ten years data is showing the loss making of paint industry in India which affects the survival of the organization, this should turn into profits. The loss making of the paint industry is based on several factors among those changes in working capital is one. By controlling changes in working capital through the controlling of the level of various current assets and current liabilities, the losses of paint industry can be reduced to some extent.

Objectives of the study

1. To determine the relationship between changes in working capital and profitability of select paint industries.
2. To offer suggestions based on findings of the study.

Hypothesis of the study

The main hypothesis of the study is "Working Capital has significant impact on profitability"
H1: Working Capital has significant impact on profitability.

Variables

In this study variables considered are Earnings before interest and tax as dependant variable and Current Ratio, Liquid ratio, Working capital Turnover ratio, Inventory Conversion Period, Average Payment Period and Debtors Turnover Ratio as independent variables.

Population:

Total population of the paint companies is 297.

Sample Size

Among total companies in the paint industry 5 companies are selected as sample size on the basis of random sampling method.

Source of Data

It is a quantitative research where the data is collected from secondary sources like annual reports of Asian, Berger, Shalimar, Kansai Nerolac, Jenson and Nicholson companies, various journals, books and websites like Prowess IQ, CMIE for 10 years of data.

Statistical Tool

For this study Karl Pearson Coefficient of Correlation is used to find the relation between the selected variables .Correlation is a statistical measure that indicates the extent to which two or more variables fluctuate together. A positive correlation indicates the extent to which those variables increase or decrease in parallel; a negative correlation indicates the extent to which one variable increases as the other decreases.

When the fluctuation of one variable reliably predicts a similar fluctuation in another variable, there's often a tendency to think that means that the change in one causes the change in the other. However, correlation does not imply causation. There may be, for example, an unknown factor that influences both variables similarly.

Data Analysis

Table 1: Data related to Asian Paints Ltd

	Current	Liquid				DTO	
FY	ratio	Ratio	WCTO ratio	ICP	APP	ratio	EBIT
2006-							
2007	1.516	0.732	9.031	136.303	102.232	8.725	53422
2007-							
2008	1.369	0.620	12.030	105.870	85.670	9.999	74134
2008-							
2009	1.578	0.791	9.320	84.648	61.002	10.586	64670
2009-							
2010	1.210	0.494	23.084	97.702	73.420	11.990	128456
2010-							
2011	1.713	0.969	6.047	111.420	92.814	13.844	125974
2011-							
2012	1.481	0.794	8.333	103.173	83.681	14.224	145408
2012-							
2013	1.610	0.852	6.838	105.519	83.108	11.775	165521
2013-							
2014	1.777	1.033	5.691	105.055	88.604	12.033	184423
2014-2015	1.854	1.057	5.696	103.943	71.278	12.219	210444
2015-2016	0.019	-0.667	-5.120	91.552	70.531	12.616	268086

Source: Annual Reports of Asian Paints Ltd in 2006, 2007, 2008,2009,2010,2011, 2012, 2013, 2014, 2015, 2016.

Table 2: Data related to Berger Paints Ltd

	Current	Liquid	WC TO			DTO	
FY	Ratio	Ratio	Ratio	ICP	APP	Ratio	EBIT
2006-							
2007	2.132	0.792	5.162	131.254	54.474	7.906	10708.31
2007-							
2008	2.292	0.895	4.965	116.738	47.866	8.641	12016.32
2008-							
2009	2.205	0.971	5.398	100.823	48.103	8.356	11248.32
2009-							
2010	2.024	0.889	6.095	103.997	69.077	8.188	17201.08
2010-							
2011	2.078	0.951	5.307	114.369	70.523	8.995	21610

2011-2012	1.566	0.786	7.032	110.187	71.107	9.300	25450
2012-2013	1.567	0.786	6.803	114.741	72.492	8.691	30824
2013-2014	1.352	0.688	9.617	109.153	85.402	8.627	34998
2014-2015	1.537	0.811	7.580	103.956	80.868	8.467	40410
2015-2016	1.732	0.948	6.091	108.382	99.129	8.306	56085

Source: Annual Reports of Berger Paints Ltd in 2006,2007,2008,2009,2010,2011, 2012, 2013, 2014, 2015,2016.

Table 3: Correlation between Current Ratio and EBIT in Berger Paints Ltd

		Current ratio	EBIT
	Pearson Correlation	1	-.721*
Current ratio	Sig. (2-tailed)		.019
	N	10	10
	Pearson Correlation	-.721*	1
EBIT	Sig. (2-tailed)	.019	
	N	10	10

The above table indicates the correlation between Current ratio and Earnings in Berger Paints Ltd. From the table it is evident that Current ratio is negatively correlated with Earnings. If there is a 1% change in Current ratio, there will be a change of .721% in Earnings. There is a significant relationship between Current ratio and Earnings in Berger Paints Ltd.

Table 4: Correlation between Average Payment Period and EBIT in Berger Paints Ltd

		APP	EBIT
	Pearson Correlation	1	.945**
APP	Sig. (2-tailed)		.000
	N	10	10
	Pearson Correlation	.945**	1
EBIT	Sig. (2-tailed)	.000	
	N	10	10

The above table indicates the correlation between Average Payment Period and Earnings in Berger Paints Ltd. From the table it is evident that Average Payment Period is positively correlated with Earnings. If there is a 1% change in Average Payment Period, there will be a change of .945% in Earnings. There is a significant relationship between Average Payment Period and Earnings in Berger Paints Ltd.

Table 5: Data related to Shalimar Paints Ltd

FY	Current ratio	Liquid Ratio	WCTO Ratio	ICP	APP	DTO Ratio	EBIT
2006-2007	2.011	1.191	3.987	190.896	0.462	4.581	811.83
2007-2008	1.880	1.175	4.348	122.260	0.421	4.795	1448.09
2008-2009	1.920	1.270	4.593	84.410	0.323	4.215	842.59
2009-2010	1.662	1.063	5.243	104.278	0.394	4.292	1716.01
2010-2011	1.152	0.695	14.646	122.549	0.419	3.965	1663.88
2011-2012	1.186	0.704	11.771	120.363	0.410	3.860	2095.75
2012-2013	1.172	0.660	10.668	141.523	0.483	3.428	1566.32
2013-2014	1.141	0.677	12.038	122.100	0.446	3.072	-360.02
2014-2015	1.021	0.624	71.492	122.834	0.501	2.766	-1484.8
2015-2016	1.077	0.644	18.457	154.116	0.597	2.715	428.35

Source: Annual Reports of Shalimar Paints Ltd in 2006, 2007, 2008,2009,2010,2011, 2012, 2013, 2014, 2015, 2016.

Table 6: Correlation between Working capital turnover ratio and EBIT in Shalimar Paints Ltd

		Working capital ratio	EBIT
	Pearson Correlation	1	-.757*
Working capital ratio	Sig. (2-tailed)		.011
	N	10	10
	Pearson Correlation	-.757*	1
EBIT	Sig. (2-tailed)	.011	
	N	10	10

The above table indicates the correlation between Working Capital Turnover ratio and Earnings in Shalimar Paints Ltd. From the table it is evident that Working Capital Turnover ratio is negatively correlated with Earnings. If there is a 1% change in Working Capital Turnover ratio, there will be a change of .757% in Earnings. There is significant relationship between Working Capital Turnover ratio and Earnings in Shalimar Paints Ltd.

Table 7: Correlation between Debtors Turnover ratio and EBIT in Shalimar Paints Ltd

		Debtors Ratio	EBIT
	Pearson Correlation	1	.638*
Debtors Ratio	Sig. (2-tailed)		.047
	N	10	10
	Pearson Correlation	.638*	1
EBIT	Sig. (2-tailed)	.047	
	N	10	10

The above table indicates the correlation between Debtors Turnover ratio and Earnings in Shalimar Paints Ltd. From the table it is evident that Debtors Turnover ratio is positively correlated with Earnings. If there is a 1% change in Debtors Turnover ratio, there will be a change of .638% in Earnings. There is significant relationship between Debtors Turnover ratio and Earnings in Shalimar Paints Ltd.

Table 8: Data related to Kansai Nerolac Paints Ltd

	Current	Liquid	WCTO			DTO	
FY	Ratio	Ratio	Ratio	ICP	APP	ratio	EBIT
2006-							
2007	2.583	1.409	4.789	84.019	63.603	6.150	15530
2007-							
2008	2.428	1.225	5.066	79.553	73.579	6.273	16759.11
2008-							
2009	1.869	1.050	6.479	67.098	90.447	6.165	14018.9
2009-							
2010	1.712	0.815	7.879	90.770	107.864	7.722	23860.94
2010-							
2011	2.620	1.675	3.501	95.187	86.121	8.634	289133
2011-							
2012	2.319	1.309	4.362	98.046	76.550	8.354	305128
2012-							
2013	1.935	0.958	5.369	104.515	74.833	7.221	42188.4
2013-							
2014	2.021	0.941	5.009	113.380	76.239	7.043	30983.1
2014-							
2015	2.539	1.460	4.440	83.549	49.134	7.261	40350
2015-							
2016	3.353	2.458	2.489	90.384	62.708	7.276	106900

Source: Annual Reports of Nerolac Paints Ltd in 2006, 2007, 2008,2009,2010,2011, 2012, 2013, 2014, 2015, 2016.

Table 9: Correlation between Debtors Turnover ratio and EBIT in Kansai Nerolac Paints Ltd

		Debtors ratio	EBIT
	Pearson Correlation	1	.829**
Debtors ratio	Sig. (2-tailed)		.003
	N	10	10
	Pearson Correlation	.829**	1

EBIT	Sig. (2-tailed)	.003	
	N	10	10

The above table indicates the correlation between Debtors Turnover ratio and Earnings in Kansai Nerolac Paints Ltd. From the table it is evident that Debtors Turnover ratio is positively correlated with Earnings. If there is a 1% change in Debtors Turnover ratio, there will be a change of .829% in Earnings. There is a significant relationship between Debtors Turnover ratio and Earnings in Kansai Nerolac Paints Ltd.

Table 10: Data related to Jenson & Nicholson Paints Ltd

		Liquid	WCTO			DTO	
FY	Current ratio	Ratio	ratio	ICP	APP	Ratio	EBIT
2006-							
2007	0.227	0.131	-0.544	165.465	926.210	4.114	-1034.17
2007-							
2008	0.253	0.143	-0.697	104.201	504.536	5.381	-1359.17
2008-							
2009	0.501	0.401	-1.013	102.260	443.061	5.689	-754.23
2009-							
2010	0.498	0.397	-0.940	114.739	476.182	5.272	-325.54
2010-							
2011	0.109	0.090	-0.132	81.870	422.043	12.845	-401.44
2011-							
2012	0.126	0.100	-0.160	103.236	410.936	6.412	69.3
2012-							
2013	0.130	0.102	-0.163	108.465	391.789	5.891	-584.39
2013-							
2014	0.065	0.039	-0.155	93.471	404.594	5.351	3530.72
2014-							
2015	0.072	0.045	-0.155	101.465	463.855	5.337	1079.5
2015-							
2016	0.028	0.021	-0.107	30.322	525.070	5.133	-1382.32

Source: Annual Reports of Jenson &Nicholson Paints Ltd in 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016.

Table 11: Consolidated Table showing significant relationship between EBIT and selected ratios

					Kansai	Jenson&
	Correlation between EBIT and	Asian	Berger	Shalimar	Nerolac	Nicholson
S. No	select ratios	Paints	Paints	Paints	Paints	Paints
1	Current Ratio	0.188	**0.019**	0.397	0.394	0.368
2	Liquid Ratio	0.201	0.711	0.437	0.309	0.424
	Working Capital Turn Over					
3	Ratio	0.064	0.119	**0.011**	0.139	0.32
4	Inventory Conversion Period	0.305	0.365	0.831	0.412	0.991
5	Average Payment Period	0.379	**0.000**	0.249	0.845	0.326
6	Debtors Turn Over Ratio	0.074	0.792	**0.047**	**0.003**	0.93

From the above analysis it is observed that the correlation between EBIT and selected ratios in five companies namely Asian Paints Ltd, Berger Paints Ltd, Shalimar Paints Ltd, Kansai Nerolac Paints Ltd, Jenson & Nicholson Paints Ltd during 2007-2016. It is also found that from the above analysis out of five companies there is significant relationship between the variables, Average Payment Period Ratio and Current Ratio in Berger Paints Ltd, Working capital Turnover ratio and Debtors Turnover ratio in Shalimar Paints Ltd and Debtors Turnover ratio in Kansai Nerolac Paints Ltd during 2007 to 2016.

Table 12: Data showing EBIT for select companies

	Asian	Berger	Shalimar	Nerolac	J& N
2006-07	53422	10708.31	811.83	15530	-1034.17
2007-08	74134	12016.32	1448.09	16759.11	-1359.17
2008-09	64670	11248.32	842.59	14018.9	-754.23
2009-10	128456	17201.08	1716.01	23860.94	-325.54
2010-11	125974	21610	1663.88	289133	-401.44

2011-12	145408	25450	2095.75	305128	69.3
2012-13	165521	30824	1566.32	42188.4	-584.39
2013-14	184423	34998	-360.02	30983.1	3530.72
2014-15	210444	40410	-1484.8	40350	1079.5
2015-16	268086	56085	428.35	106900	-1382.32

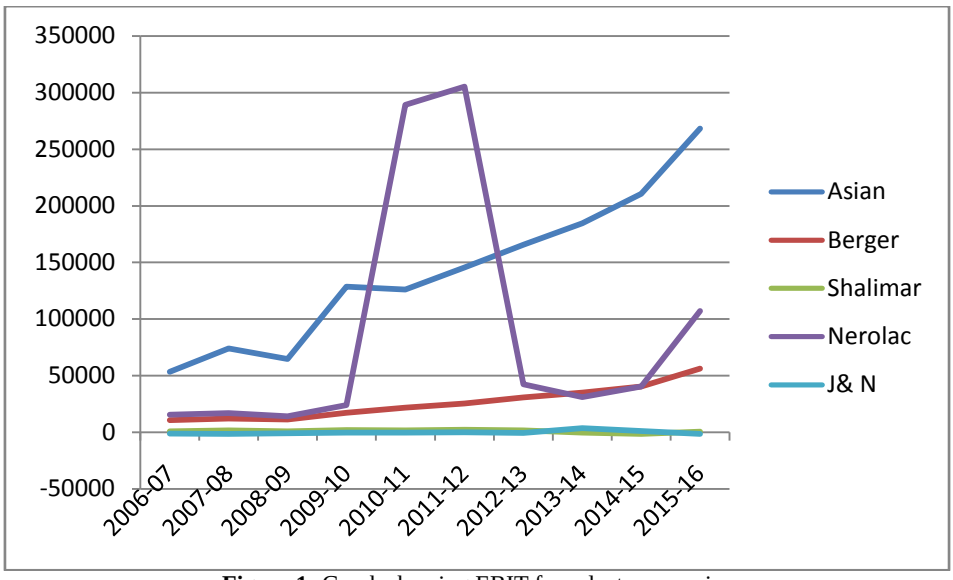

Figure 1: Graph showing EBIT for select companies

The above graph shows the Earnings before Interest and Tax for the period 2007- 2016 for select companies. It is shown that Asian Paints Ltd has been in a positive trend, Berger Paints Ltd has been in positive trend, Shalimar Paints Ltd shows no change in earnings, Kansai Nerolac Paints Ltd shows a increasing trend from 2010 to 2012 and then it is decreased and again increased from 2015 to 2016, Jenson & Nicholson shows the constant trend over the period.

Table 13: Data showing Current ratio for select companies

	Asian	Berger	Shalimar	Nerolac	J& N
2006-07	1.516	2.132	2.011	2.583	0.227
2007-08	1.369	2.292	1.88	2.428	0.253
2008-09	1.578	2.205	1.92	1.869	0.501
2009-10	1.21	2.024	1.662	1.712	0.498
2010-11	1.713	2.078	1.152	2.62	0.109
2011-12	1.481	1.566	1.186	2.319	0.126
2012-13	1.61	1.567	1.172	1.935	0.13
2013-14	1.777	1.352	1.141	2.021	0.065
2014-15	1.854	1.537	1.021	2.539	0.072
2015-16	0.019	1.732	1.077	3.353	0.028

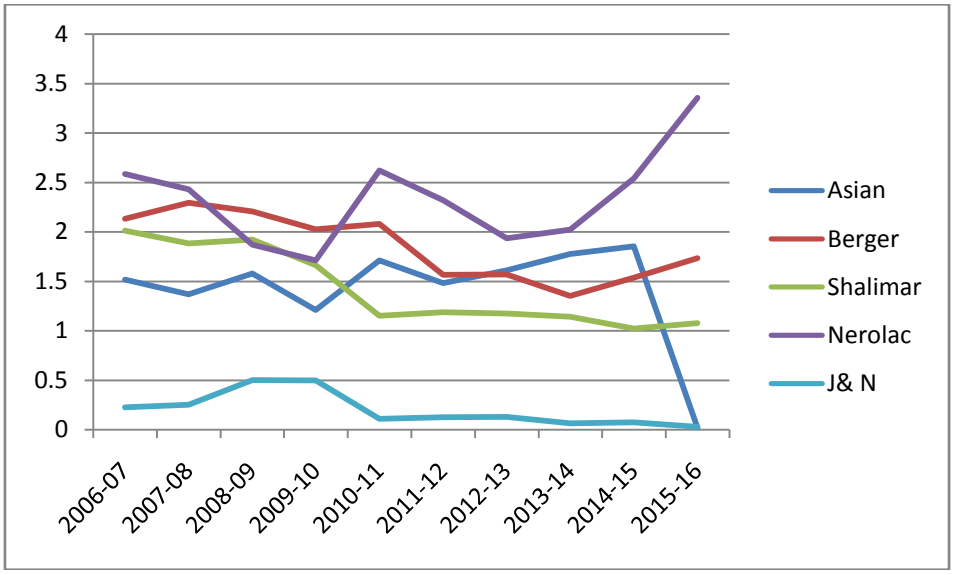

Figure 2: Graph showing Current Ratio for select companies

The above graph shows the Current Ratio for the period 2007- 2016 for select companies. It is shown that Asian Paints Ltd shows a frequent changes as trend being increases and decreases, Berger Paints Ltd has been in negative trend, Shalimar Paints Ltd shows negative trend, Kansai Nerolac Paints Ltd shows a increasing trend from 2008 to 2010 and then it is decreased and maintained constantly, Jenson and Nicholson Paints Ltd shows the constant trend over the period.

Table 14: Data showing Liquid Ratio for select companies

	Asian	Berger	Shalimar	Nerolac	J& N
2006-07	0.732	0.792	1.191	1.409	0.131
2007-08	0.62	0.895	1.175	1.225	0.143
2008-09	0.791	0.971	1.27	1.05	0.401
2009-10	0.494	0.889	1.063	0.815	0.397
2010-11	0.969	0.951	0.695	1.675	0.09
2011-12	0.794	0.786	0.704	1.309	0.1
2012-13	0.852	0.786	0.66	0.958	0.102
2013-14	1.033	0.688	0.677	0.941	0.039
2014-15	1.057	0.811	0.624	1.46	0.045
2015-16	-0.667	0.948	0.644	2.458	0.021

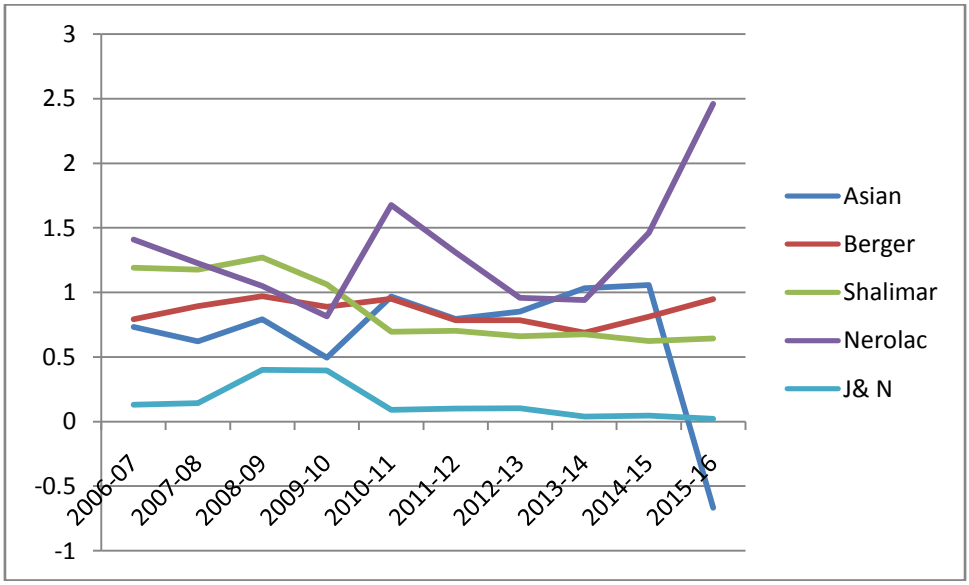

Figure 3: Graph showing Liquid Ratio for select companies

The above graph shows the Liquid Ratio for the period 2007- 2016 for select companies. It is shown that Asian Paints Ltd has been in a negative trend, Berger Paints Ltd has been a constant trend, Shalimar Paints Ltd shows a decreasing trend, Kansai Nerolac Paints Ltd shows a decreasing trend till 2010 and increased from 2010 to 2016, Jenson & Nicholson Paints Ltd shows the constant trend over the period.

Table 15: Data showing Working Capital Turn Over Ratio for select companies

	Asian	Berger	Shalimar	Nerolac	J& N
2006-07	9.031	5.162	3.987	4.789	-0.544
2007-08	12.03	4.965	4.348	5.066	-0.697
2008-09	9.32	5.398	4.593	6.479	-1.013
2009-10	23.084	6.095	5.243	7.879	-0.94
2010-11	6.047	5.307	14.646	3.501	-0.132
2011-12	8.333	7.032	11.771	4.362	-0.16
2012-13	6.838	6.803	10.668	5.369	-0.163
2013-14	5.691	9.617	12.038	5.009	-0.155
2014-15	5.696	7.58	71.492	4.44	-0.155
2015-16	-5.12	6.091	18.457	2.489	-0.107

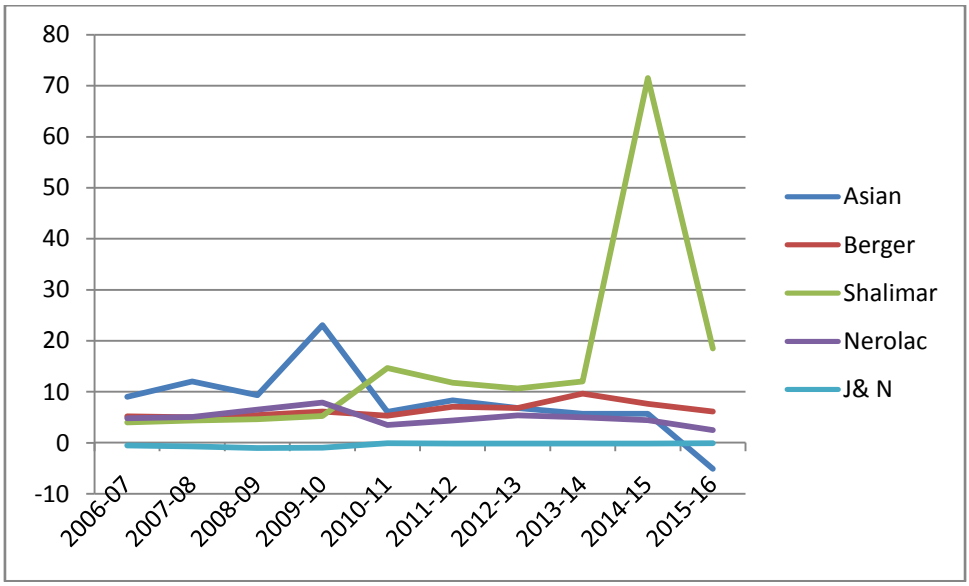

Figure 4: Graph showing Working Capital Turn over Ratio for select companies

The above graph shows the Liquid Ratio for the period 2007- 2016 for select companies. It is shown that Asian Paints Ltd has been a increasing trend from 2009 to 2010 and from then it shows a decreasing trend, Berger Paints Ltd has been a constant trend, Shalimar Paints Ltd shows a increasing trend till 2015 and then shows a decreasing trend, Kansai Nerolac Paints Ltd shows a constant trend, Jenson & Nicholson Paints Ltd shows the constant trend over the period.

Table 16: Data showing Inventory Conversion period for select companies

	Asian	Berger	Shalimar	Nerolac	J& N
2006-07	136.303	131.254	190.896	84.019	165.465
2007-08	105.87	116.738	122.26	79.553	104.201
2008-09	84.648	100.823	84.41	67.098	102.26
2009-10	97.702	103.997	104.278	90.77	114.739
2010-11	111.42	114.369	122.549	95.187	81.87
2011-12	103.173	110.187	120.363	98.046	103.236
2012-13	105.519	114.741	141.523	104.515	108.465
2013-14	105.055	109.153	122.1	113.38	93.471
2014-15	103.943	103.956	122.834	83.549	101.465
2015-16	91.552	108.382	154.116	90.384	30.322

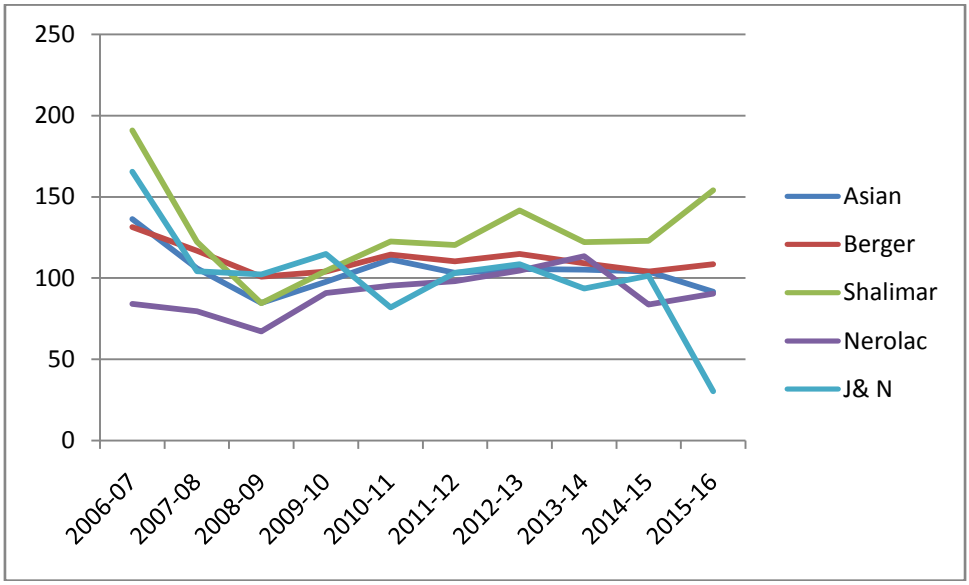

Figure 5: Graph showing Inventory Conversion Period for select companies

The above graph shows the Liquid Ratio for the period 2007- 2016 for select companies. It is shown that Asian Paints Ltd has been in a negative trend, Berger Paints Ltd has been a constant trend, Shalimar Paints Ltd shows a decreasing

trend, Kansai Nerolac Paints Ltd shows a increasing trend , Jenson & Nicholson Paints Ltd shows the decreasing trend over the period.

Table 17: Data showing Average Payment Period for select companies

	Asian	Berger	Shalimar	Nerolac	J& N
2006-07	102.232	54.474	0.462	63.603	926.21
2007-08	85.67	47.866	0.421	73.579	504.536
2008-09	61.002	48.103	0.323	90.447	443.061
2009-10	73.42	69.077	0.394	107.864	476.182
2010-11	92.814	70.523	0.419	86.121	422.043
2011-12	83.681	71.107	0.41	76.55	410.936
2012-13	83.108	72.492	0.483	74.833	391.789
2013-14	88.604	85.402	0.446	76.239	404.594
2014-15	71.278	80.868	0.501	49.134	463.855
2015-16	70.531	99.129	0.597	62.708	525.07

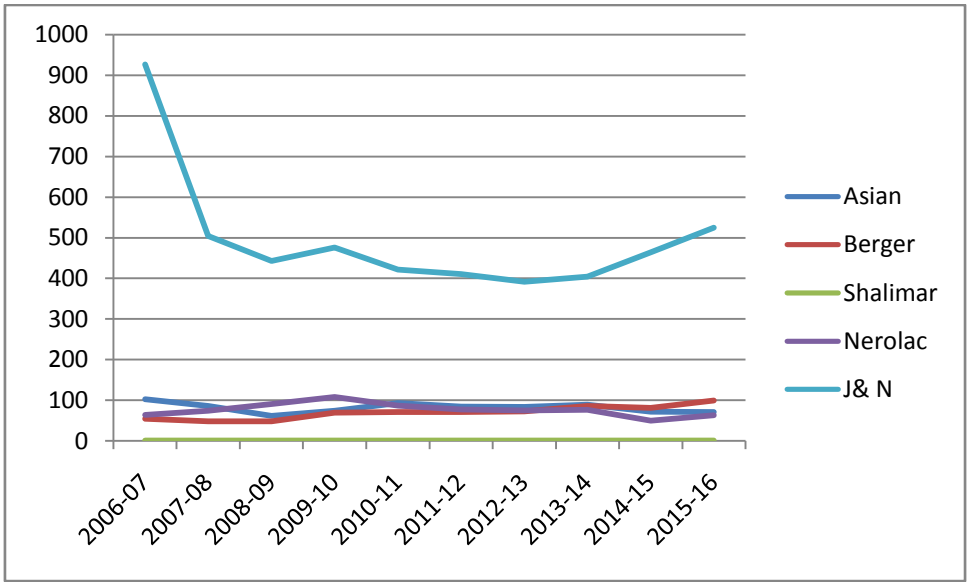

Figure 6: Graph showing Average Payment Period for select companies

The above graph shows the Liquid Ratio for the period 2007- 2016 for select companies. It is shown that Asian Paints Ltd has been in a constant trend, Berger Paints Ltd has been a constant trend, Shalimar Paints Ltd shows a constant trend, Kansai Nerolac Paints Ltd shows a constant trend, Jenson & Nicholson Paints Ltd shows the constant trend over the period.

III. Findings

The research done to find the relation between the selected ratios and Earnings before Interest and Tax had led to the following findings:

1) It is found that there is correlation significance at 0.019 between current ratio and Earnings before Interest and Tax in Berger Paints Ltd which shows that there is an impact of current ratio on the performance of the company.
2) For Berger Paints Ltd the Average Payment ratio and Earnings before Interest and Tax are correlated significantly at 0.000 which shows that there is an impact of liquid ratio on the performance of the company.
3) Working Capital Turn Over Ratio and Earnings before Interest and Tax in Shalimar Paints Ltd are correlated significantly at 0.011 which shows that impact of working capital turnover ratio on overall performance of the company.
4) Debtors Turn over Ratio has correlation significance at 0.047 with Earnings before Interest and Tax in Shalimar Paints Ltd which shows that increase in the debtors will have an impact on performance of the company.
5) Kansai Nerolac Paints Ltd has a significant correlation between Debtors Turn over Ratio and Earnings before Interest and Tax at 0.003 which shows that increase in the debtors will have certain impact on the overall performance of the company.

IV. Suggestions

By considering the above findings the following are some suggestions to the selected paint companies:

1) Among the selected ratios for finding relation with the profitability of the companies, Asian Paints Ltd shows that all the selected working capital ratios have no relation with the profits of the company which shows that the company has invested more of its capital as fixed, so it is better to concentrate on allocation of its capital for its daily operations also.

2) Jenson and Nicholson Paints Ltd has also no relation between the selected variables of working capital to the earnings of the company, which determines it is having huge losses, this may be due to their improper maintenance of the working capital cycle.
3) For Berger Paints Ltd, Shalimar Paints Ltd and Kansai Nerolac Paints Ltd, liquid ratio is not correlated with the earnings which show that company is some ward unable to pay its short term debts. It is not slightly liquid in nature.
4) For Kansai Nerolac Paints Ltd and Shalimar Paints Ltd the current ratio is more than the ideal ratio which have its slight impact on the profits of the company, they have to increase their investment on the current assets in order to pay their short term liabilities.
5) In these companies the Inventory Conversion Period is very high, which resembles the conversion of their inventory to cash is taking for a long time in which they have to improve.

V. Conclusion

All the manufacturing firms have less amounts of cash invested in working capital. It can therefore be expected that the way in which working capital is managed will have a significant impact on profitability of those firms. These results suggest that managers can create value for their shareholders by reducing the number of day's accounts receivable and conversion of inventories into cash to a reasonable maximum.

References

[1]. Agrawal, N.K. (2003) Management of Working Capital, Sterling Publishers Pvt, Ltd, New Delhi.
[2]. Dr. N. Pasupathi, 2012 "Operational Adequacy of Working Capital Management of Selected Indian Automobile Industry - A Bivariate Discriminant Analysis", International Journal of Research in Social Sciences, Vol. I, Issue 1, U.S.A.
[3]. Dr. Vivek Sharma, (2011) "Liquidity, Risk and Profitability Analysis: A Case Study of Maruti India Limited", Search and Research Journal, Vol. II, No. 2.
[4]. Hong Yuh Ching, MSc. Ayrton Novazzi and Fábio Gerab,(2011) "Relationship between
[5]. Howard, L.R. (1971): Working Capital - its Management and Control, McDonald and Evans Ltd., London.
[6]. Janaki Ramudu P, (2011) "A Study on Working Capital Management of Indian Commercial Vehicles Industry", Finance India, Vol. XXV, No. 2.
[7]. Makori Mogaka Daniel, Jagongo Ambrose, 2013, **"**Working Capital Management and firm Profitability: Empirical Evidence from Manufacturing and construction Firms listed on Nairobi Securities Exchange, Kenya**"** International Journal of Accounting and Taxation, Vol.1 No.1.
[8]. Mallick, A. K. and Sur. D. (1991): Working Capital Management, Robert Publications, Mumbai.
[9]. Mishra R. K. (1975): Working Capital with Reference to Selected Public undertaking in India Publications Pvt. Ltd. Bombay.
[10]. Mustafa Afeef, (2011)" Analyzing the Impact of Working Capital Management on the Profitability of SME's in Pakistan", International Journal of Business and Social Science, Vol. 2, No. 22.
[11]. Richard Kofi Akoto, Dadson Awunyo – Vitor 2013, "Working Capital Management and Profitability: Evidence from Ghanain listed manufacturing firms", Journal of Economics from and International Finance, Vol.5 (9).
[12]. Srinivas K T,(2103) **"**A Study on Working Capital Management through Ratio Analysis with Reference to Karnataka Power Corporation Limited" Journal of Research in Commerce & Management, Volume No.2, Issue No.12.
[13]. Working Capital Management and Profitability in Brazilian Listed Companies", Journal of Global Business and Econpnics, Vol. 3, No. 1.
[14]. chapter 3.pdf Original 2.pdf - 10_chapter 2.pdf

www.ijird.com/index.php/ijird/article/download/77471/60132
http://www.academicjournals.org/article/article1386945287_Akoto%20et%20al.pdf
http://www.emeraldinsight.com/doi/pdfplus/10.1108/QRFM-04-2013-0010
http://shodhganga.inflibnet.ac.in/bitstream/10603/703/8/08_chapter2.pdf
http://shodhganga.inflibnet.ac.in/bitstream/10603/91572/11/11.%20chapter%203.pdf
http://ebooks.narotama.ac.id/files/A%20Textbook%20of%20Financial%20Cost%20&%20Management%
20Accounting%20(Revised%20Edition)/Chapter%209%20%20Ratio%20Analysis.pdf
http://www.ncert.nic.in/ncerts/l/leac205.pdf http://educ.jmu.edu/~drakepp/principles/module2/fin_rat.pdf
https://www.finsia.com/docs/default-source/jassa-new/jassa-1976/ratio-analysis-applications-limitations-and-dangers-a-perspective.pdf?sfvrsn=2
https://www.cleverism.com/working-capital-management-everything-need-know/
http://tipsonphysicaleducation.blogspot.in/2010/12/various-definition-of-research-methods.html
https://www.asianpaints.com/content/dam/asianpaints/website/secondarynavigation/investors/financi al-results
https://www.bergerpaints.com/investors/annual-reports.html
http://www.bseindia.com/bseplus/AnnualReport
https://cdn.nerolac.com/uploads/Financial-Result

IOSR Journal of Business and Management (IOSR-JBM) is UGC approved Journal with Sl. No. 4481, Journal no. 46879.

MS. Vasavi Pravallika "A Critical Study on Impact of Working Capital Management on Profitability of Manufacturing Industry In India (A Study On Paint Industry) ." IOSR Journal of Business and Management (IOSR-JBM) 20.2 (2018): 37-47.