

Relationship between working capital management and profitability of Indian organized retail sector companies

- Payal, Dr. A S Boora
 - SRS, Prof.
- IMSAR, MDU, ROHTAK, INDIA.

Introduction

In a capital intensive business like retail sector and e-commerce companies need more products, more customers and categories to constantly expand their horizons and it requires an infusion of working capital. In today's scenario, it is most important for the retail firm to know the level of funds to be invested in each component of the fixed assets as well as in the current assets. In the end of working capital cycle, the levels of funds invested in current assets are generally turned back into cash which is normally within one year. Though the level of current assets either high or low affect the profitability and liquidity of the firm and it should be maintained in such a way that satisfy the business needs. Therefore, to know how to investment these assets (short-term financing or long-term financing); the efficient working capital management should be done.

In many journals, it has been discussed that working capital management has a direct relationship with the profitability and liquidity of the organization. Therefore, the working capital management is very critical to maintain the firm's liquidity and profitability. There is a simple relationship between low amount of holding cash & the business opportunities they lose and high amount of holding cash & going to lose the profit; vice-versa in case of inventory. Working capital management is that part of capital which is used for the circulation of business activities or operations. It means working capital is the barometer that has to be properly managed for the efficient and smooth running of the operational efficiency of the company. Now the question arises that how a company can be profitable with the help of management of working capital? And another question is - what is the relationship between working capital management and profitability of Indian Organized retail sector companies? In this study an attempt was made to find out the relationship of Impact of the working capital management on profitability of Organized retail Sector in India.

Working capital Management has its own role in the development of any company. For the smooth running of the business organization it plays a significant role of performance wheel. Like grease, working capital acts as grease to the smooth run of capital budgeting, fixed assets, other short term and long-term liabilities. For the business promotion a significance amount of capital is required for every organization. Working capital for an organization has a similar role like role of heart plays in human body. The management of optimum level of adequacy of working capital can bring the ensure success level at the organization while its poor management can lead to the ultimate downfall of the organization. So we can say that the organization's efficiency depends mainly on its management of its assets and liabilities either they may be short term or it may be of long term. And obviously, here working capital management plays an important role in firm's overall financial performance.

Literature review

Kesseven Padachi (2006) Study the "Trends in Working Capital Management and its Impact on Firm's Performance: An Analysis of Mauritian Small Manufacturing Firms". The Objective of the study was to examine the impact of accounts receivables days, inventories days, accounts payable days and cash conversion cycle on return on assets, to analyze the trend in working capital needs of firms and to examine the causes for any significant differences between the industries for the period of 1998-2003. 58 Small Manufacturing Firms have been selected for the study. The study concludes that the provided owner-managers with information regarding the basic financial management practices used by their peers and their

peers attitudes toward these practices. Correlation Analysis, Regression analysis have been used for the findings of the study.

Abdul Raheman, Mohamed Nasr(2007) Study the “Working Capital Management and Profitability: case of Pakistani Firms” during the period of 1999-2004. The Secondary data was used to establish a relationship between wcm and profitability over a period of 6 years for 94 Pakistani companies listed on Karachi Stock Exchange, to find out the effects of different components of wcm o profitability, to establish a relationship between the two objectives of liquidity and profitability of the Pakistani firm and to find out the relationship between profitability and size of the Pakistani firm. The Pearson's Correlation, Regression model and least square was used to find out the relationship between debt used by the Pakistani firm and its profitability and to draw conclusion about relationship of wcm and profitability of the Pakistani firms. The findings of the study concluded that there is a strong negative relationship between variables of the working capital management and profitability of the firms.

Ioannis Lazaridis, Study “The relationship between wcm and profitability of listed companies in Athens Stock Exchange.” The Objective of the Study was to establish a relationship that is statically significant between profitability, cash conversion cycle and its components for listed firms in the ASE of 131 companies listed on Athens Stock Exchange during the period of 2001-2004. The findings of the study concluded that the less profitable firms wait longer to pay the bills taking advantage of credit period granted by their suppliers.

Pushpakumar. B, Prabhat Kumar Yadav Study on “Working Capital Management in Public Enterprises”. The Objective of the study was to study the working capital of selected public enterprises. Primary and Secondary data have been collected during the period of 2000-01 to 2009-10. The application of Trend Analysis, Ratio Analysis, Operating Cycle Analysis, Working Capital Leverage Analysis and Schedule of Changes in Working Capital concluded that the management of working capital plays an important role in maintaining the financial health of the companies during the normal course of business.

Virendar C. Jain (2007) Study the “Working Capital Management of Fertilizer Industry of Gujarat”. The study attempted to know the position of working capital of unit under study of chemical fertilizer industry, the tendency of raw material of the unit under study of chemical fertilizer industry, credit tendency of the unit under study of chemical fertilizer industry, cash tendency of unit under study of chemical fertilizer industry, the suppliers tendency of the unit under study of chemical fertilizer industry during 1996-97 to 2004-05. The study concentrated on the tests like Chi-square test, Kruskal Wallis one way analysis of variance test, Standard Deviation, Arithmetic Mean, Index Number and Ratio Analysis. The findings of the study concluded that the fertilizer industry as very important as agriculture sector contributes 24% of GDP of the nation.

Abdul Raheman, Talat Afza, Abdul Qayyum, Mahmood Ahmed Bodla,(2010) Study the “Working Capital Management and Corporate Performance of Manufacturing Sector in Pakistan.” During 1998-2007. The Panel Data Methodology was used in their study to Analyzes the impact of working capital management on firm's performance in Pakistan. The application of Pearson Correlation Coefficient revealed that the cash conversion cycle, net trade cycle and inventory turnover in days were significantly affecting the performance of the firms.

Rosanna Chan(2010) Study the “Financial Constraints, Working Capital and the Dynamic Behavior of the firm”. The Objective of the Study was to present a dynamic model of the firm that incorporates working capital by introducing a delay between factor payments and the receipt of revenue. Theoretical Predictions

and Cobb-Douglas Production Function were used. The study concluded that In order to maximize growth, efforts to relieve credit constraints should be focused on periods when demand shocks are high.

Nor Edi Azhar BintiMohamad (2010) Study the “Working capital Management: The Effect of Market Valuation and Profitability in Malaysia”. The Objective of the Study was to explore the effects of working capital components for the period of 2003-2007. 172 firms have selected from the listed companies. The application of Correlation Analysis, Regression Analysis concludes that there are significant negative associations between working capital variables with firm's market value and profitability.

David M. Mathuva(2010) Study “The Influence of Working Capital Management Components on Corporate Profitability: A Survey on Kenya Listed Firms”. The Objective of the Study was to find out the influence of working capital management components on corporate profitability and to investigate the Relationship between the working capital management and profitability during the period of 1993-2008. 30 firms have been selected form the listed companies on Nairobi Stock Exchange(NSE). The application of Pearson and Spearman's Correlations concluded that the management can also create value for their shareholders by reducing the number of day's accounts receivable.

Amarjit Gill, Nahum Biger, Neil Mathur (2010) Study “The Relationship between Working Capital Management and Profitability: Evidence from the United States”. The Objective of the Study was to investigate the Relationship between the working capital management and profitability. A sample of 88 American manufacturing firms have been selected form the listed companies on the New York Stock Exchange for the period of 2005-2007. The results of Pearson Correlation Coefficient and Regression Analysis concluded that the slow collection of accounts receivables is correlated with low profitability.

Jaskaran Singh Dhillon, Madhur Joshi, Ramita Verma,(2012) Study the “Emergence of Retailing Sector in India: Challenges and Opportunities”. Data were collected through different literatures and analysis of organized retail market for the study. The objective of the study was to study about the various strategies, trends and opportunities in retailing, to study the growth of retail sector in India, and to study about the amazing and emerging formats of retailing. Qualitative Analysis was used for the study to study the recent trends in Indian retail Industry and its challenges & opportunities.

Shahid Akhter, Iftekhar Eqbal (2012): Study the “Organized Retailing in India”. The attempt was done to study about the various strategies, trends and opportunities in retailing, to study the growth of retail sector in India, and to study about the amazing and emerging formats of retailing. Qualitative Judgement was used to study the recent trends in Indian retail Industry and its challenges & opportunities. The study concluded that the Indian Retail Industry is gradually inching its way towards becoming the next boom industry.

Asghar Ali & Syed Atif Ali (2012) Study the “Working Capital Management: Is it really affects the Profitability? Evidence from Pakistan”. The Objective of the Study was to find the affect of working capital on profitability of firms, and to find the affect of Total Assets on profitability of firms during the period 2003-2008. 15 companies have been selected from the balance sheet analysis report of State Bank of Pakistan. The application of Regression analysis concluded that Firms with higher working capital have higher ratio of profitability and firms with higher total assets also have higher ratio of profitability.

B Bagchi, B Khamrui (2012) Study the “Relationship between Working Capital Management and Profitability: A Study of selected FMCG Companies in India”. The Objective of the study was to determine the nature and extent of the relationship between working capital management and profitability and to explore the joint impact of different components of working capital management on profitability. 10 FMCG Companies have been selected from CMIE database for the period of 2000-01 to 2009-10. OLS Regression

Analysis, Shapiro-Wilk's Test, Kolgomorov-Smirnov Test, Lillifors Test, Pearson Correlation Coefficient has been applied and the study concludes that the both CCC and debt used by the firm are negatively associated with firm's profitability.

Sarbabriya Ray (2012) evaluating the “Impact of Working Capital Management Components on Corporate Profitability: Evidence from Indian Manufacturing Firms”. The Study was done to investigate the relationship between working capital management components and the profitability of Indian Manufacturing Firms for the period of 1996-97 to 2009-10. Net Operating Profitability and Current Ratio concluded that a strong negative relationship between the measures of working capital management including the number of days accounts receivable and cash conversion cycle, financial debt ratio with corporate profitability.

Zubair Arshad, Muhammad Yasir Gondal,(2013) Impact of working capital management on profitability: A Case of the Pakistan Cement Industry. The study was done to examine the efficiency of working capital management practices of the cement industry and to test how fast the firms have been able to improve their respective level of efficiency in working capital management with respect to a target level(industry average) during the period of 2004-2010. The Regression analysis and Ratio Analysis was used to test the hypothesis i.e.H0: There is no relationship between efficient working capital management and profitability of Pakistani Cement Sector and H1: There is a possible positive relationship between efficient working capital management and profitability of Pakistani cement sector. The Current ratio and net current ratio on total ratio of 21 listed Companies in stock exchange revealed that they have significantly positive effects on firm profitability.

Parul Mehta(2013) studies the “Effect of working capital management on the profitability of the Indian Pharmaceutical sector” during the 2008-2012. The aim of research was to study the working capital management in the area of pharmaceutical industry. Descriptive analysis was used for the study. Through the use of SPSS and Gretl Softwares the study concluded that the firm can increase their profitability by reducing the cash conversion cycle .

Daniel Mogaka Makori, Ambrose Jagongo(2013) Study the “Working Capital Management and firm’s Profitability: Empirical Evidence from Manufacturing and Construction Firms listed on Nairobi Securities Exchange, Kenya.” The Objective of the Study was to determine whether there is a significant relationship between ACP and profitability of the firms, to establish whether there is a significant relationship between ICP and profitability of the firm, and to ascertain if there is a significant relationship between APP and profitability of the firm. The Pearson's Correlation, Ordinary Least squares regression model was used for the Listed firms on the NSE for the period of 2003-2012 to examine if there is a significant relationship between CCC and profitability of the firm. The study founds a negative relationship between profitability and number of day's accounts receivable and cash conversion cycle.

Jyoti Mahato, Udaykumar Jagannath, Study the “Impact of Working Capital Management on Profitability: Indian Telecom Sector” during the period of 2010-2015. The Objective of the Study was to study the background and characteristics of the Telecom industry in India, to develop a framework for measuring the relationship between WCM ratios and firm profitability in the Telecom Industry of India and to analyze data related to working capital management and profitability of Telecom industry firms in India. Non-Survey Method has been used for the findings of the Study. The application of Descriptive Statistics, Correlation Analysis, Ordinary Least squares regression model concluded that the ROA has negative relationship with ICP, ACP, CCC and Current Ratio while ROA has positive relationship with APP, Debt Ratio and Firm size.

Addis Ababa Study the “Impact of working capital management on firm's performance: The case of selected Metal manufacturing companies in Ethiopia.” The objective of the study was to minimize the Cash conversion cycle the amount of capital tied up in the firm's current assets during the period of 2008-2012. The Estimation Analysis, Time Series data and the use of SPSS revealed that the metal companies in Addis Ababa have a good credit standards, terms and collection effort.

Yusuf Aminu(2014) Study the “Impact of wcm on the profitability of manufacturing companies listed on the Nigerian Stock Exchange.” The Objective of the Study was to investigate the impact of wcm on the profitability of manufacturing firms listed on the Nigerian Stock Exchange during the period of 2008-2013. The Regression Analysis was used for the study and concluded that Average collection period and inventory conversion period were significantly negatively related to profitability.

N. Suresh Babu, G. V. Chalam (2014) Study on the “Working Capital Management Efficiency in Indian Leather Industry- An Empirical Analysis” during the period of 1997-98 to 2010-11. The Objective of the Study was to determine whether there is a significant relationship between Inventory Conversion Period (ICP) and Profitability of the firm, and to examine whether there is a significant relationship between Average Collection Period (ACP) and Profitability of the firm. The study revealed that the overall leather industry, working capital management has significant impact on profitability of the firms. Managers can create value for their shareholders by reducing the number of day's accounts receivable and increasing the account payment period and inventories to a reasonably maximum and also suggests that managers of these firms should spend more time to manage CCC of their firms and make strategies of efficient management of working capital. Multiple Regression Analyses, t test, f test and ANOVA have been applied to establish if there is a significant relationship between Average Payment Period (APP) and Profitability of the firm and to ascertain if there is a significant relationship between Cash Conversion Cycle (CCC) and Profitability of the firm.

Research methodology

The objective of the paper is examine the relationship between the working capital measurement as measured by *Average Collection Period* of the retail sector companied and their Profitability. The different measures of profitability and the working capital management is considered in the study. The annual data of 22 retail companies are collected for the different variables for the period of 2004 to 2019. The profitability is measured with help of Earning per share, Return On Equity, Market Capitalisation, Return On Capital Employed, Return On Asset and working capital management is measured with the help of Average Collection Period, Inventory Collection Period, Cash Conversion Cycle and Average Payment Period. The analysis starts with analysing the long term behaviour of selected variables for all the twenty two companies. The descriptive analysis of all the included variables are done in the study.

Data analysis and interpretation

This section of the paper discusses the relationship between one of the major component of working capital namely the Average Collection Period of the selected companies and their profitability. This section also discuss the long term trend and growth of the average collection period of the selected companies.

4.1 Average collection peiod and profitability

The descriptive analysis of ACP and the different measures of the profitability of the retail companied are estimated in the study. The descriptive analysis includes the estimation of mean value of the ACP and the different measures of the profitability of the company in the selected period of 16 years. The results of mean score of ACP along with different measures of the profitability for all the included retail companies are shown below in table:

Table: Descriptive analysis of ACP of the selected retail companies

Company	Year of Incorporation	Average ACP	Average NP Margin	Average EPS	Average RoE	Average RoCE	Average RoA
Archies	1990	42.549	3.770	4.594	5.964	5.490	3.840
Cantabile Retail	2005	66.019	0.331	7.791	16.02	7.002	1.888
Bombay Dyeing	1879	73.219	2.241	4.316	38.19	3.705	2.123
Bata India	1931	10.786	6.401	15.489	14.04	15.524	9.902
KKC	1981	62.067	15.735	39.380	25.221	20.166	13.873
Pantaloons	1997	20.378	7.175	25.371	12.194	7.908	2.261
Raymonds	1925	76.782	2.738	7.624	3.64	4.071	1.806
V2 Retail	2006	0.282	6.580	-12.205	12.725	-49.553	-2.165
Duke fashions	1966	356.67	-27.234	1.572	112.708	5.515	2.224
Godrej	2001	58.187	8.076	4.952	10.670	8.681	4.348
Himalayan	1930	184.218	2.561	-0.320	2.550	4.025	2.347
IFB	1974	23.35	3.804	11.168	30.895	29.983	12.814
Liberty	1875	87.850	3.73	7.858	9.65	10.355	3.841
Provogue	1997	137.159	-20.435	1.442	17.148	-18.614	-7.467
Relaxo	1984	22.045	4.908	14.823	19.509	14.22	8.176
Reliance	2006	18.672	9.700	71.160	14.205	10.210	7.230
Shoppers Stop	1997	4.766	1.765	4.061	5.971	6.268	2.931
Infiniti Croma	2006	125.002	23.728	66.180	40.026	41.141	28.798
Titan	1984	13.612	5.520	15.981	28.154	25.564	9.841
Trent	1998	4.030	5.936	15.142	6.063	5.990	4.144
V Mart	2002	0.908	3.774	15.204	14.072	12.838	7.245
Lifestyle	1999	24.065	1.662	3.651	3.788	5.718	0.808

The table 1 depicts that the ACP is highest in case of the Duke (356.67), Himalayan (184.218) and followed by Provogue (137.159). The average collection period is found to be lowest in case of the V2 retail (0.282), Vmart(0.908) , and Trent (4.030). The companies are trying the keep the ACP level constant for all the years but a variation is also observed in the ACP for different companies.

In case of NP margin, the highest value is found in case of the Infiniti Croma (23.728), KKC (15.735) and followed by Reliance (9.701). The NP Margin is found to be lowest in case of the Duke (-27.923), Provogue (-20.435) and V2 Retail (-6.58). The companies are trying the keep the Net profit margin level constant for all the years but a variation is also observed in the net profit for different companies.

For the Earning per share the highest value found in case of the Reliance (71.160), Infiniti Croma (66.180) and followed by KKC (39.380). The earnings per share is found to be lowest in case of the V2 Retail (-12.205), Himalayan (-0.320), and Provogue (1.442). The companies are trying the keep the Earning per share level constant for all the years but a variation is also observed in the EPS for different companies. The Return on Equity is found to be highest in case of the Duke (112.708), Infiniti Croma (40.026) and followed by Bombay dyeing (38.19). The Return on Equity is found to be lowest in case of the Provogue (-17.148), Himalayn (-2.554) and Raymond (3.64). The companies are trying the keep the RoE level constant for all the years but a variation is also observed in the RoE for different companies. The Return on Capital Employed is highest in case of the Infiniti Croma (41.141), IFB (29.983) and followed by (25.564). The Return followed by on Capital Employed is found to be lowest in case of the V2 Retail (-49.553), Provogue (-18.614) and Bata India (3.705). The companies are trying the keep the RoCE level constant for all the years but a

variation is also observed in the RoCE for different companies. The Return on Asset is highest in case of the Infiniti Croma (28.798), followed by KKC (13.873) and IFB (12.814). The Return on Asset is found to be lowest in case of the Provogue (-7.467), V2 Retail (-2.165) and Lifestyle (0.808). The companies are trying to keep the RoA level constant for all the years but a variation is also observed in the RoA for different companies.

4.2 Trend and growth analysis

In the study the long-term trend and growth of ACP of all the selected retail companies is analysed. The regression analysis is used to study the presence of long-term trend in the behaviour of average collection period of all the individual retail companies selected in the study. In the regression analysis, ACP is considered as a dependant variable and the time (in years) is considered as an independent variable. Mathematically, the regression model can be expressed as:

$$ACP = \alpha + \beta * Time \text{ (in years)} + \epsilon_t$$

Where, α is the intercept and β is the slope coefficient, which indicates the long-term trend per year. The null hypothesis assumed in the regression analysis is mentioned below:

$$H_0 = \text{“There exist no significant trend of ACP in the selected retail companies”}$$

The result of the trend analysis using regression model is shown in table:

Table: Long term trend in ACP for selected retail companies

Company	Trend Coefficient	T statistics (p value)	F statistics (p value)	R square
Archies	0.114	0.109 (0.914)	0.012 (0.914)	.001
Cantabil Retail	2.111	.659(.521)	.434(.521)	.032
Bombay Dyeing	-3.844	-1.205(.248)	1.452(.248)	.094
Bata India	-3.81	-1.704(.112)	2.902(.112)	.182
KKC	3.509	4.771(.000)	22.758(.000)	.619
Pantaloons	4.681	3.995(.005)	15.961(.005)	.695
Raymonds	.030	.071(.945)	.005(.945)	.000
V2 Retail	-.015	-.590(.567)	.348(.567)	.031
Duke	-1003.205	-2.232(.42)	4.984(.42)	.263
Godrej	-1.917	-1.474(.163)	2.172(.163)	.134
Himalayan	-16.489	-5.610(.000)	31.470(.00)	.692
IFB	-.192	-.527(.606)	.278(.606)	.019
Liberty	-1.522	-2.525(.024)	6.378(.024)	.313
Provogue	-.895	-.351(.731)	.123(.731)	.009
Relaxo	-.583	-1.158(.266)	1.340(.266)	.087
Reliance	-1.291	-3.816(.002)	14.564(.002)	.510
Shoppers Stop	.154	2.687(.018)	7.218(.018)	.340
Infiniti Croma	7.476	1.737(.104)	3.016(.104)	.177
Titan	2.523	3.792(.002)	14.382(.002)	.507
Trent	-.568	-7.483(.000)	55.990(.00)	.800
V Mart	.336	2.041(.076)	4.167(.076)	.342
Lifestyle	-4.662	-17.804(.000)	316.973(.00)	.988

The results indicate that in case of many retail companies (KKC, Pantaloons, Himalayan, Liberty, Reliance, Titan, Trent and Lifestyle) the probability value of t-statistics is found to be less than 5 % level of significance. Hence the significant long-term trend is found in these companies. It is also observed that in case of other companies the long-term trend is absent. However, both positive and negative trend is observed in the retail companies.

Growth analysis

In the study the growth rate of the selected retail companies are estimated with the help of semi log modal. The semi log model used in the study is mathematically represented as below:

$$\text{Log (ACP)} = \alpha + \beta * \text{time} + \epsilon$$

The log the ACP is considered as the dependent variable and time is considered as the independent variable. Since the annual data of ACP of the retail companies is considered in the study, the regression model will provide the annual growth rate. The slope coefficient of the regression model if multiply with 100, indicates the monthly growth rate of the ACP of the retail companies. The statistical significance of growth rate of the ACP is examined with the help of t statistics and its p value at 5 percent significant level. The result of the growth rate analysis is shown below in table.

Table: Growth rate analysis of the retail companies

Company	Annual growth rate	T statistics (p value)	F statistics (p value)	R square
Archies	-1.1 %	-.580 (0.571)	0.336 (0.571)	.023
Cantabil Retail	21.6%	2.229 (0.044)	4.968 (0.044)	.276
Bombay Dyeing	-3.4%	-.924(.371)	.854(.371)	.057
Bata India	-2.4%	-1.550(.145)	2.402(.145)	.156
KKC	5.3%	4.812(.000)	23.152(.000)	.623
Pantaloons	18.4%	4.171(.004)	17.393(.004)	.713
Raymonds	0.1%	.164(.872)	.027(.872)	.002
V2 Retail	-3.9%	-.432(.674)	.187(.674)	.017
Duke	-2.2%	-1.699(.111)	2.888(.111)	.171
Godrej	-3.9%	-1.918(.076)	3.678(.076)	.208
Himalayan	-9.9%	-5.589(.000)	31.240(.000)	.691
IFB	-0.3%	-.165(.871)	.027(.871)	.002
Liberty	-1.8%	-2.465(.027)	6.074(.027)	.303
Provogue	-1.9%	-.835(.418)	.697(.418)	.047
Relaxo	-2.0%	-.810(.431)	.656(.431)	.045
Reliance	-7.6%	-3.654(.003)	13.354(.003)	.488
Shoppers Stop	3.9%	2.744(.016)	7.352(.016)	.350
Infiniti Croma	4.2%	1.490(.158)	2.221(.158)	.137
Titan	15.2%	6.951(.000)	48.318(.000)	.775
Trent	-17.2%	-6.297(.000)	39.653(.000)	.739
V Mart	22.0%	1.232(.253)	1.519(.253)	.160
Lifestyle	-20.9%	-10.552(.000)	111.343(.000)	.965

The results indicate that Cantabil Retail, KKC, Pantaloons, Himalayan, Liberty, Reliance, Shoppers Stop, Titan, Trent and Lifestyle) the probability value of t-statistics is found to be less than 5 % level of significance. Hence the significant growth rate of all these retail companies can be concluded. The average annual growth rate provided by semi log model is found to be both positive and negative.

4.1.4 Correlation between average collection period and profitability of the retail sector companies

The correlation analysis is used in order to find out the relationship between the average collection period of the selected retail sector companies and the different measures of the profitability of the retail sector companies. The Pearson coefficient of correlation is estimated between the ACP of all the companies taken together with their profitability measures. The following null hypothesis is examined with the help of correlation analysis

Hypothesis: “There exists no significant correlation between the ACP of all the retail companies with their profitability measures”

The result of the correlation analysis is shown below:

Table: Correlation table

Corelation between	Pearson Coefficient	(p-value)	Remarks
ACP & RoE	-.050	0.365	No sig. correlation exists
ACP & RoCE	-.022	.696	Insignificant correlation exists
ACP & RoA	-.064	.247	No significant correlation exists
ACP & NP Margin	-.512	.000	Significant correlation exists
ACP & EPS	-.043	.432	Insignificant correlation exists
ACP & M. Cap.	-.721	.000	Significant correlation exists

The result indicates that the probability value of coefficient of Pearson coefficient is less than five percent level of significance in case of the net profit margin and market capitalisations of the retail sector companies selected in the study. Thus the null hypothesis that “*There exists no significant correlation between the ACP of all the retail companies with their profitability measures*” can be rejected. Since the coefficient of correlation is found to be negative with the net profit margin and market capitalisations of the retail sector companies, it can be concluded that there exists negative and significant correlation between the average collection period of the selected retail sector companies and the net profit margin and market capitalisations (measures of the profitability of the retail sector companies) in the study. In other words the increase in average collection period reduces the profitability of the retail companies and vice versa. Hence it can be concluded in the study that the average collection period is negatively related with the net profit margin and market capitalisations.

However the correlation with other measures of profitability namely RoE, RoCE, RoA and EPS is not found to be correlated with average collection period of the selected retail companies.

4.1.5 Regression between *average collection period* and profitability of the retail sector companies

The bivariate pooled regression model is applied between the *average collection period* and the selected measures of the profitability of the retail sector companies (net profit margin and market capitalisations). These variables are selected on the basis of significant correlation as found in previous section. The ACP of the selected retail companies is considered as the dependent variable and both the measures of profitability (net profit margin and market capitalisations) are considered as independent variable. The null hypothesis assumed in the regression analysis is mentioned below:

Hypothesis: “*There exists no significant impact of the ACP of all the retail companies on the profitability of the selected retail sector companies*”

The results of pooled regression analysis are shown below:

Table: Impact of ACP on NP Margin

Dependent Variable	Independent Variable	Regression Coefficient	T statistics (p-value)	F statistics (p-value)	R-square
Np Margin	Constant	-2.425	-.385(.700)	116.820	26.3%
	ACP	-.032	-10.808(.000)	(.000)	

The above table depicts the results of bivariate regression analysis applied between the average collection period and the net profit margin of the retail sector companies. The result indicates that p value of the t statistics for the net profit margin is found to be less than five per cent significance level. Thus, at ninety-five per cent confidence level that null hypothesis that “*There exists no significant impact of the ACP of all the retail companies on the net profit margin (profitability measure) of the selected retail sector companies*” can

be rejected. The table depicts that ACP have the significant negative impact on the net profit margin of the retail sector companies. In other words the decrease in the ACP of the retail sector companies with results into their higher net margin.

4.5.1b Regression between ACP and market capitalisation of retail sector companies

The bivariate pooled regression model is applied between the *average collection period and the market capitalisation of the retail sector companies*. The market capitalisation of retail sector companies is found to have significant correlation with ACP. The ACP of the selected retail companies is considered as the dependent variable and market capitalisation is considered as independent variable. The null hypothesis assumed in the regression analysis is mentioned below:

Hypothesis: *“There exists no significant impact of the ACP of all the retail companies on the market capitalisation of the selected retail sector companies”*

The results of pooled regression analysis are shown below:

Table: Impact of ACP on Market Capitalization

Dependent Variable	Independent Variable	Regression Coefficient	T statistics (p-value)	F statistics (p-value)	R-square
Market Cap	Constant	2.069	12.047(.000)	353.225	51.9%
	ACP	.002	18.794(.000)	(.000)	

The above table depicts the results of bivariate regression analysis applied between the average collection period and the Market Capitalization of the retail sector companies. The result indicates that p value of the t statistics for the net profit margin is found to be less than five percent significance level. Thus, at ninety-five percent confidence level that null hypothesis that *“There exists no significant impact of the ACP of all the retail companies on the Market Capitalization (profitability measure) of the selected retail sector companies”* can be rejected. The table depicts that ACP have the significant positive impact on the Market Capitalization of the retail sector companies. In other words, the increase in the ACP of the retail sector companies with results into their higher Market Capitalization. Average collection periods are more important for the retail sector companies because they rely heavily on their cash flows. A higher average collection period is generally less favourable than a lower average collection period. A higher average collection period indicates that company's credit terms are too strict while a lower average collection period indicates the company collects the payments faster.

4.1.6 Panel data regression model

In this study, the annual data of average collection period and the different profitability measures of 22 retail sector companies are selected. Thus, the collected data is panel data. The panel data regression model should also be examined in order to find out cause and effect relationship between average collection period and profitability of selected retail companies. The pooled regression model as discussed in previous section indicate the significant effect of ACP on net profit margin and market capitalisation of the selected retail companies. Since in the retail industry, all included companies are heterogeneous. Due to difference in their size like market products etc. hence it is required to find out the impact of the heterogeneity lying in the companies for the relationship between working capital management and profitability of the companies. In order to find out the effect of working capital on the profitability, the F-test and Hausman test is applied. The F-test will examine the effect of heterogeneous nature of the companies in the regression model. The significant results of F-test suggest the application of fixed effect regression models to examine their relationship between working capital practices and profitability of the companies. Further Hausman test is also applied to examine whether the effects are random or not. The null hypothesis of Hausman test is assumed that the effects are random. In other words, cross section units included in the study are similar and any difference exists between them are due to the chance. The results of F test and Hausman test are showing in the table:

ACP

Dependent Variable	Independent variable	Panel Fixed Effects			Panel Random Effects		Remarks
		Test	Statistics	P value	Test	Hausman Test (p value)	
Net profit margin	Average Collection period	Cross-section F test	2.113	0.003	Cross section random	42.335 (0.000)	Fixed effect regression model to be applied
		Cross-section Chi-square	44.562	0.002			
Market Capitalisation	Average Collection period	Cross-section F	7.966	0.000	Cross section random	6.074 (0.0137)	Fixed effect regression model to be applied
		Cross-section Chi-square	143.483	0.000			
EPS	Average Collection period	Cross-section F	15.152	0.000	Cross section random	.385 (.534)	Random effect regression model to be applied
		Cross-section Chi-square	234.703	0.000			
RoE	Average Collection period	Cross-section F	1.046	0.407	Cross section random	0.207 (0.648)	Panel regression not applicable
		Cross-section Chi-square	22.809	0.354			
RoCE	Average Collection period	Cross-section F	1.888	0.011	Cross section random	0.000074 (0.993)	Random effect regression model to be applied
		Cross-section Chi-square	40.088	0.007			
RoA	Average Collection period	Cross-section F	4.129	0.000	Cross section random	0.0816 (0.7751)	Random effect regression model to be applied
		Cross-section Chi-square	82.104	0.000			

The result indicates that except in case of return on equity, the F-test is found to be significant in all the cases which means considering the collected data as panel data and applying panel regression model will contribute significant information in the study. The result of Hausman test indicates that the random effect model is applicable in case of Earnings per share, Return on capital employed and Return on assets. Hence, it can be concluded that the fixed effect model is applicable in order to find out the impact of Average collection period on net profit margin and market capitalisation. Further, random effect model is applicable in order to find out the impact of average collection period on Earnings per share, Return on capital employed and Return on assets.

The results of panel data regression models are shown and discussed below:

Table: Fixed effect regression model

Dependent Variable	Independent Variable	Regression Coefficient	T statistics (p-value)	F statistics (p-value)	R-square
NP margin	Constant	-3.99	-0.656(.512)	7.706	35.57%
	ACP	-0.025	-8.143(.000)	(.000)	

The results of fixed effect model applied between the NP margin as dependent variable and ACP as independent variables indicate that p value of the t statistics in case of ACP is found less than five percent significance level. Thus, at ninety-five percent confidence level that null hypothesis that *“There exists no significant impact of the ACP on NP Margin can be rejected.* The table depicts that ACP have the significant negative impact on the NP margin of the retail sector companies.

Table: Random effect regression model

Dependent Variable	Independent Variable	Regression Coefficient	T statistics (p-value)	F statistics (p-value)	R-square
Return on Capital employed	Constant	7.890	1.903(0.057)	0.142	0.043% %
	ACP	-0.0005	-0.3774(0.706)	(0.705)	

The results of random effect model applied between the ROCE as dependent variable and ACP as independent variables indicate that p value of the t statistics in case of ACP are found less than five percent significance level. Thus, at ninety-five percent confidence level that null hypothesis that *There exists no significant impact of the between of the measures of ACP on ROCE cannot be rejected.* The table depicts that ACP do not have the significant impact on the ROCE of the retail companies.

Table: Fixed effect regression model

Dependent Variable	Independent Variable	Regression Coefficient	T statistics (p-value)	F statistics (p-value)	R-square
Market capitalisation	Constant	2.103	14.721(0.000)	30.842	68.9
	ACP	0.0013	18.983(0.000)	(0.000)	

The results of fixed effect model applied between the ACP as independent variable and market capitalisation dependent variables indicate that p value of the t statistics is found less than five percent significance level. Thus, at ninety-five percent confidence level that null hypothesis that *There exists no significant impact of the ACP on the market capitalisation can be rejected.* The table depicts that ACP have the significant positive impact on the market capitalisation of the retail sector companies.

Table: Random effect regression model

Dependent Variable	Independent Variable	Regression Coefficient	T statistics (p-value)	F statistics (p-value)	R-square
Earnings per share	Constant	14.724	3.270(0.001)	0.0333	0.011%
	ACP	-.0001	-0.182(0.854)	(0.855)	

The results of random effect model applied between the EPS as dependent variable and ACP as independent variables indicate that p value of the t statistics in case of ACP are found less than five percent significance level. Thus, at ninety-five percent confidence level that null hypothesis that *There exists no significant impact of the between of the measures of ACP on EPS cannot be rejected.* The table depicts that ACP do not have the significant impact on the EPS of the retail companies.

Table: Random effect regression model

Dependent Variable	Independent Variable	Regression Coefficient	T statistics (p-value)	F statistics (p-value)	R-square
Return on Assets	Constant	5.648	3.560 (0.0004)	1.076	0.32%
	ACP	-0.003	-1.035(0.304)	(0.300)	

The results of random effect model applied between the between the ROA as dependent variable and ACP as independent variables indicate that p value of the t statistics in case of ACP are found less than five percent significance level. Thus, at ninety-five percent confidence level that null hypothesis that *There exists no*

significant impact of the between of the measures of ACP on ROA cannot be rejected. The table depicts that ACP do not have the significant impact on the ROA of the retail companies.

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