

**Impact of Working Capital Management on
Firm Profitability in Automobile Sector**



**Thesis Submitted to
The Superior College, Lahore**

**In Partial fulfillment of the
Requirement for the Degree of**

Bachelor of Business Administration

**By
Mohsin Ashraf
Roll No. B.B.A 12248
Session: 2011-2015**

**The Superior College (School of Management Sciences), Lahore
November-2015**

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Approved By:

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Thesis Submitted to



**The Superior College
School of Management Sciences, Lahore, Pakistan**

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DEDICATION

*Dedicated to
My Beloved Parents
Who Brought me up
In the Appropriate Educational
Loving Atmosphere and
Whose Prayers and Well Wishes
Enabled me to Achieve this Goal.*

ACKNOWLEDGEMENT

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ABSTRACT

This study seeks to explore the impact of working capital management on profitability in automobile sector of Pakistan. Inventory conversion period, Average payment period and Average collection period was used as a measure for working capital management and Return on assets was used as a measure for profitability. This study is based on a sample of 13 automobile companies which was listed on Karachi Stock Exchange (KSE). Data was analyzed through statistical analysis which included descriptive statistics, pool root unit test, hausman test and regression analysis to analyze the data. The findings of Hausam test reveal that random effect model is more suitable than fixed effect model. The findings of random effect models disclose that there was an inverse impact or there is negative relationship between components of working capital (Inventory conversion period, Average payment period and Profitability (ROA)). The study therefore certifies that automobile sector should use just in time production process in order to decrease inventory period and should not float their payments in order to increase payment period.

Key words: Working capital management, Profitability, Average collection period, Average payment period, Inventory conversion period, Automobile sector, Pakistan.

Table of Contents

| | |
|---|------|
| Declaration of Originality..... | V |
| DEDICATION | VI |
| ACKNOWLEDGEMENT..... | VII |
| ABSTRACT | VIII |
| CHAPTER #1..... | 1 |
| 1. Introduction | 1 |
| 1.1 Background of study..... | 1 |
| 1.2 Purpose statement..... | 3 |
| 1.3 Significance of study | 3 |
| 1.4 Objective of study | 3 |
| 1.5 Research Question | 4 |
| 1.6 Hypothesis..... | 4 |
| 1.7 Theoretical framework | 4 |
| 1.8 Outline of the study | 4 |
| CHAPTER # 2..... | 5 |
| 2. Literature review | 5 |
| CHAPTER # 3..... | 14 |
| 3. Data and Methodology | 14 |
| 3.1 Paradigm..... | 14 |
| 3.2 Research approach..... | 15 |
| 3.3 Sampling and population..... | 15 |
| 3.4 Validity..... | 16 |
| 3.5 Definition of dependent and independent variables | 16 |
| 3.5.1 Inventory conversion period..... | 16 |
| 3.5.2 Average collection period..... | 17 |
| 3.5.3 Average payment period..... | 17 |
| 3.5.4 ROA..... | 17 |
| 3.6 Methodology | 17 |
| 3.6.1 Descriptive Statistics | 17 |
| 3.6.2 Pool unit root test: | 18 |
| 3.6.3 Hausman test | 18 |
| 3.6.4 Fixed or random effect | 18 |
| | IX |

| | |
|---|----|
| 3.7 Regression equation: | 18 |
| CHAPTER # 4..... | 19 |
| 4. Data Analysis and result..... | 19 |
| 4.1 Descriptive statistics..... | 19 |
| 4.2 Pool unit root test | 20 |
| 4.3 Hausman test | 21 |
| 4.4 Cross-section random effects | 22 |
| CHAPTER # 5..... | 23 |
| 5.1 Discussion and policy recommendations | 23 |
| 5.2 Conclusion..... | 25 |
| REFERENCES..... | 27 |

CHAPTER #1

1. Introduction

1.1 Background of study

No business in the world can operate without significant cash and also the management of working capital. The foremost goal of working capital is to ensure that cash or liquid assets is readily available for organization on daily basis when its need occur, never too little but to the appropriate level. If there is increase in working capital that shows that there are two possibilities first is current assets of the company are increasing day by day and second possibility is that current liabilities of the company was decreasing day by day. The time which is required to convert current asset and current liabilities into cash is working capital cycle. If there is need to done decisions about working capital then it is done by working capital management. Normally in working capital management there is short term decisions which maximum time period was one year. Working capital management manages proper level of current assets and current liabilities of the companies. Working capital management involves planning and controlling current liabilities and current assets of the company in a way that minimize the risk to meet short term requirements of the company. Working capital management told the organization that whether they have enough cash flows to meet its daily expenses with the help of this organization come to known that they should continue its operations or not and its helps the organization to increase its earning. Working capital management manages cash in which there is assurance that to which amount cash is needed for day to day activities and expenses secondly it manage accounts payable that what is policy regarding payments thirdly its manage accounts receivables that in which there is making of receiving policy and policy is made by company which company thinks that it is suitable for that particular company and fourthly it manage inventories that inventories should be enough available so that production should not be stopped and production will be done in smooth way and determine the time for inventories starting with raw material to the finished goods. On investment amount of return is profitability. Profit of company increase by increasing in current assets of the firm and it is decreased by decreased by current liabilities of the firm. Profitability of the company depends on the way how working capital is managed. Both positive and negative impact occurs in firms profitability and it is due to working capital management. (Raheman and Nasar 2007).

There are many studies which was conducted on the literature impact of working capital management on profitability in which authors (Ponsian, Chrispina, Tago and Mkiibi, 2014) seeks to explore the significance relation between working capital management and profitability in manufacturing firms listed in he suggested that if the average collection period increases then bad debts of the company also increase so the companies should receive payment as soon as possible from

their debtors. Firms should reduce their inventories to increase profitability as on inventory there is the storage cost which decrease profitability. (Mansoori and Muhammad , 2012)the paper contribute how firm's performance affect working capital management and how managers manages working capital efficiently to effect firm if the length of cash conversion cycle was reduced to one day then managers can increase firm profitability. If the managers of the company manages working capital efficiently then its increase company performance. In order to obtain profitability firms should short their receivables and inventory conversion period. The last and important one is that due to industry differences the relationship between profitability and working capital management will effect. (Azam, Haider, 2011)Found whether KSE 30 index companies working capital management affect performance of companies. Results show that if company reduce inventory in days and payment to the supplier should be increased then profitability of the company also enhance. Firms should only prefer to those customers whose payment period is short means they should pay as early as possible and only do business with those suppliers which credit period is prolonged. (Lawal,Abiola and Oyewole , 2015)Find the effect of working capital management on profitability If the manufacturing firms wanted investment opportunities then they should give late payment as possible to its creditors. To obtain optimal level of inventory management policies should be appropriate. Minimum cash should be available for the purpose of operations. In term of collection policy managers should be responsible to collect bills as early as possible.

Proposed research studied the impact of working capital management on firm profitability of automobile companies of Pakistan.Earlier investigation shows that there is limited number of research in automobile sector of Pakistan to determine the impact of working capital management on firm profitability. (Zubairi, 2010)analyzed both the impact of working capital management on profitability and impact of capital structure in automobile sector of pakistan so in this case working capital management is not studied separately. Further (Qazi,Shah,Abbas and Nadeem, 2011)analyzed on automobile and oil and gas sector they found that net working capital, number of days of account recievable have direct association with profitability while current ratio sales logarithm and FATA have negative association. The another study conduct by (Majeed,Makki ,Saleem and Aziz , 2013)analyzed on chemical automobile and construction and material they found inverse association between account recievable days, collection period, average number of days and profitability. Other study about automobile sector related to outside of Pakistan as major study was in india and other countries so there is the need to study about impact of working capital management on profitability in automobile sector of Pakistan so the proposed study fill this gap by given literature in which there is the sample of 13 companies of automobile sector which was listed on Karachi stock exchange for the period of 2010-2014.

1.2 Purpose statement

There is much importance of the proposed research in literature because this research will be helpful to increase the knowledge about impact of working capital management on profitability in automobile sector of Pakistan and in this research determine the factors that which factors is necessary to check the impact of working capital management on profitability during the period of 2010-2014. There is vast research on impact of working capital management on profitability but there is limited number of research on automobile sector in Pakistan so research is conducted on automobile sector so that study is done on that topic which gives contribution in automobile sector and tries to improve the research related to automobile sector. The study investigated the relationship between return on assets and average collection period, average payment period and inventory conversion period in the automobile industries in Pakistan.

1.3 Significance of study

The research which was conducted there is most helpful and much important for automobile sector financial managers as well it is much give contribution to enhance literature about working capital management.

- There is much importance of our research for finance manager of automobile sector because in that particular research there is brief discussion that that whether there is relationship between working capital management and profitability and what are the factors of working capital management which is responsible for firm profitability so after reading this research absolutely finance managers check the weak point for their particular company and determine the ways that how will be profitability of the companies will be enhanced.
- Proposed research have much importance in literature because this study will be useful to enhance the knowledge about impact of working capital management on profitability in automobile sector and in this study determine the factors that which factors is essential to check the impact of working capital management on profitability. There is massive research on impact of working capital management on profitability but there is restricted number of research on automobile sector in Pakistan so the study is conducted on automobile sector so that study is done on that topic which gives contribution in automobile sector and tries to improve the research related to automobile sector.

1.4 Objective of study

Determine the impact of working capital management on profitability in automobile sector in Pakistan is the primary objective.

- To examine the relationship between Average collection period and return on assets.
- To determine the relationship between Average payment period and return on assets.
- To investigate the relationship between Inventory conversion period and return on assets.

1.5 Research Question

- Impact of working capital management on profitability in automobile sector?

1.6 Hypothesis

Ho: There is no relationship between Inventory conversion period and return on assets.

H1: There is relationship between Inventory conversion period and return on assets.

Ho: There is no relationship between average payment period and return on assets.

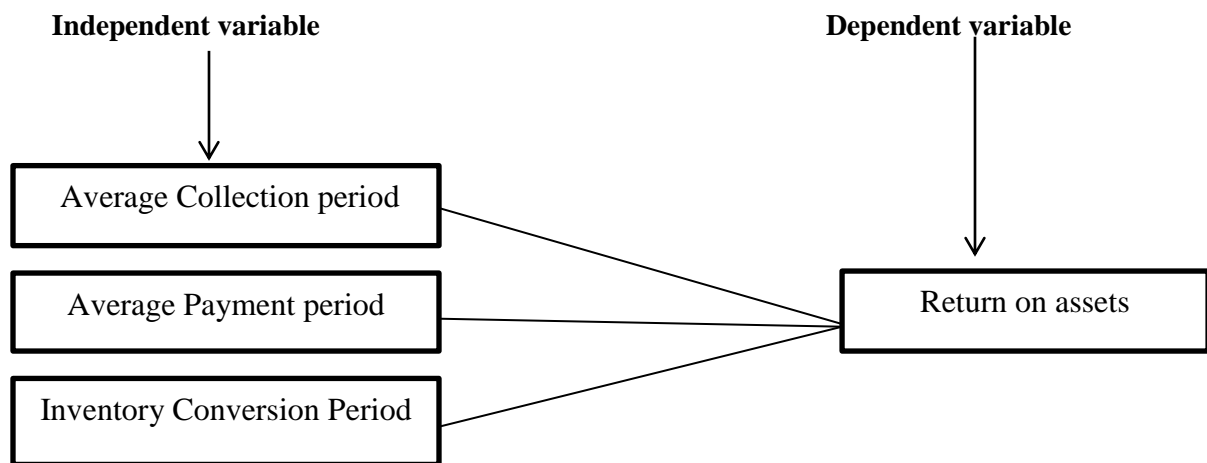
H2: There is relationship between average payment period and return on assets.

Ho: There is no relationship between Average collection period and return on assets.

H3: There is relationship between Average collection period and return on assets.

1.7 Theoretical framework

The theoretical framework presented is used to examine the impact of working capital management on profitability. The framework has average collection period, average payment period and inventory conversion period as independent variables and return on assets as a dependent variable.



1.8 Outline of the study

The first chapter disclosed the background of study after that purpose of the study then significance of the study after that objective of the study after that research question then hypothesis of the study and in the last theoretical model was discussed. Second chapter discussed the literature review which includes all the past work which has been done before about the impact of working capital management on profitability. The 3rd chapter discussed about data and methodology where discussed about research paradigm then research approach after that sampling and population afterward validity and reliability and definition of dependent and independent variable and in the last methodology of the proposed research. In 4th chapter discussed empirical results and discussion about descriptive statistics, unit root test, hausam test and cross section-random effect model. In chapter 5th discussed Discussion and Conclusion and at the end discussed about references.

CHAPTER # 2

2. Literature review

(Ponsian, Chrispina, Tago and Mkiibi, 2014) Seeks to explore the significance relation between working capital management and profitability in manufacturing firms listed in DSE. For this purpose author uses the data set from 3 manufacturing companies which were listed on DSE in Tanzania from 2002 to 2012. Pearson correlation was used and in order to find the extent and direction of relationship ordinary least square regression model regression analysis was used. Quantitative approach is measured to be appropriate approach for the study because numerical and secondary data was used in the study. Positivism paradigm is suitable as the authors verifying the earlier studies. In context of average collection period and profitability there is inverse association exists which mean that if the numbers of days increases in firms receiving payment then it effect firm profitability in negative way. Strong negative link between inventory turnover in days and profitability exists which shows that if the time for inventory to sold decrease then profitability increase. Direct bond between average payment period and profitability exists this shows that firms should give payment to its creditors as late as possible to increase profitability. Outcome of the research suggested that if the average collection period increases then bad debts of the company also increase so the companies should receive payment as soon as possible from their debtors. Firms should reduce their inventories to increase profitability as on inventory there is the storage cost which decrease profitability. Without considering the nature of business sufficient level of working capital should be present for profitability of the company. Firms should pay to its suppliers at late as possible while there is no intention in mind about damaging the relationship among them.

(Mansoori and Muhammad , 2012) The paper contribute how firm's performance affect working capital management and how managers manages working capital efficiently to effect firm profitability in which data was collected from 736 firms which were listed in Singapore stock market exchange and it is collected through DataStream database which consist of financial statements of firms from 2004 to 2011. Quantitative approach is measured to be appropriate approach for the study because numerical and secondary data was used in the study. Positivism paradigm is suitable as the authors verifying the earlier studies. Descriptive statistics, spearman correlation coefficient analysis and regression test in which ordinary least square (OLS) model was used for analysis. Negative relationship between return on assets and cash conversion cycle exists which shows that if cash conversion cycle increases then profitability of the company decrease. Negative relationship between receivable collection period and return on assets exists which shows that if the receivables period is longer then it increase extra financing of opportunity cost. Negative relationship between inventory conversion period and return on assets exists which shows that if the time period to sold inventory

increase then its ultimately affect company profitability. Negative relationship between payable deferral period and return on assets exists which shows that credit reputation of the company will damage if the account payable period will be longer. Results shows that if the length of cash conversion cycle was reduced to one day then managers can increase firm profitability. If the managers of the company manages working capital efficiently then its increase company performance. In order to obtain profitability firms should short their receivables and inventory conversion period. The last and important one is that due to industry differences the relationship between profitability and working capital management will effect.

(Azam, Haider, 2011)investigate on whether KSE 30 index companies working capital management affect performance of companies. Data set was selected from annual statement of the Non-financial institutions firms from 2001 to 2010 and it is obtained from Karachi stock exchange, State bank of Pakistan and Federal bureau of statistics. Statistical package for social sciences (SPSS) is used in which Multivariate correlational strategy, canonical correlation is used because the aim is to find the effect of two dependent variable on number of independent variables and canonical regression were used for analysis as from this technique we find the overall relationship between independent and dependent variable. Quantitative approach is measured to be appropriate approach for the study because numerical and secondary data was used in the study. Positivism paradigm is suitable as the authors verifying the earlier studies. Negative relationship between inventory turnover and return on assets and return on equity exists which shows that in inventory in days decrease then its increase firm profitability. Positive relationship between average payment period and return on assets and return on equity exists which shows that if company pay to its supplier as early as possible then it's ultimately increase profitability of the firm. Results show that if company reduce inventory in days and payment to the supplier should be increased then profitability of the company also enhance. Firms should only prefer to those customers whose payment period is short means they should pay as early as possible and only do business with those suppliers which credit period is prolonged which provide long credit period to customers .To avoid excess stock of inventory companies should have proper inventory management system and there is need to determine sector wise relationship between working capital management and profitability in future.

(Tu and Nguyen)Academic research find the relationship between working capital management and profitability and to find that how managers manage working capital efficiently which ultimately affect firm profitability in which researcher used eight different sectors to collect data from 1456 firms listed in vietstock in which data is obtained from annual financial statements of these firms. Quantitative approach is measured to be appropriate approach for the study because numerical and secondary data was used in the study. Positivism paradigm is suitable as the authors

verifying the earlier studies. Generalized least square and fixed effect model and correlation and regression analysis was used on 1456 firms data to find the result. Furthermore for fixed effects (FEM) Fixed estimation model was used because from hausman test it is come to known that fixed effect is more suitable than random effect model. Inverse linkage between cash conversion cycle and gross operating profit exist which shows that companies should reduce cash conversion cycle in order to increase profit. Negative bond between average collection period and profitability exists which shows that if the collection period was decreased of companies then the firms profitability should be increased. Negative relationship between average payment period and profitability exist which shows that if companies pay later to its suppliers than the profitability of the company should be decreased. Negative relation between inventory turnover and gross operating profitability exist which shows that the company time period to sold inventory is large which reflect the profitability in negative way. Outcome of the research suggest that that if the firm reduces their inventory period, payable period, receivable period then then profitability of the company increase ultimately. If the financial manager reduce cash conversion cycle then its help finance manager to increase firm profitability. Effective net-working management is necessary as the investor should concentrate on the structure of the balance sheet while in mind that they should invest is those companies which have financially sound. Because of the impact differences different organization use different strategies so appropriate strategy should be consider in order to gain profit.

(Vural,Sokmen and Cetenak , 2012)Present study focus on effect of the working capital management of the firm performance in which data set was collected from 75 manufacturing firms which were listed on Istanbul stock exchange and it is obtained by financial statements of these firms for the data collection purpose. Quantitative approach is measured to be appropriate approach for the study because numerical and secondary data was used in the study. Positivism paradigm is suitable as the authors verifying the earlier studies. Robust generarized method of moment system estimation (GMM) was used for panel data analysis and correlation was used. Negative relationship between collection period and profitability exist which that if the collection period of the company is shorter than profitability of the company increases. Negative relationship between cash conversion cycle and profitability exist which show that to increase the profitability of the firm cash conversion cycle should be shorter. The result indicate that if the cash conversion cycle was extended than it increases the firm value while on another hand if leverage become lower than it increase the firm value.

(Babu and Chalam, 2014) observed the relationship between profitability of firms and working capital management in Indian leather industry. Data was collected about leather industry from data base which was named as Industry Financial aggregates and ratios from 1998-2011 and further data was collected from Working papers, Magazines and Journal. Quantitative data analysis

was done with the help of Statistical Package for Social Sciences (SPSS) in which further descriptive statistics, regression and Pearson correlation analysis was used. Quantitative and qualitative approach is measured to be appropriate approach for the study because numerical and secondary data was used in the study. Positivism paradigm is suitable as the authors verifying the earlier studies as well as generate new ideas. Positive relationship between inventory conversion period and return on assets exist which shows that firms which have more inventory to hold is more profitable. Positive relationship between average collection period and return on assets exist which shows that if the customer of the firms takes more time for payment then it decrease the profitability of the firm. Negative relationship between an average payment period and return on assets exists which shows that if the firm give advance payments to its suppliers to purchase inventories on cash for purpose of sale then sales level increase which ultimately increase the firm profitability. Negative relationship between cash conversion cycle and return on assets exists. Result indicate that managers of the leather industry should make strategies of efficient management of working capital and the firms which is more profitable have more cash to lend it to their customers to obtain high margin profit. To manage cash conversion cycle managers of the leather industry should spend more time to make company to the successful way.

(Usama , 2012)This paper attempts to find the impact of working capital management on profitability. Data was obtained from Karachi stock exchange of 18 companies from 2006-2010. Common effect model and pooled least square regression which was further described by common pool regression, fixed pool regression and random pool regression was used for analysis. Quantitative approach is measured to be appropriate approach for the study because numerical and secondary data was used in the study. Positivism paradigm is suitable as the authors verifying the earlier studies. Negative relationship between average collection period and net operating profitability exist which shows that if the company collection period will be shorter than the profitability of the company increase. Negative relation between inventory turnover in days and net operating profitability exist which shows that increase in inventory holding days decrease the firm profitability which shows that if company time period for holding of inventory increased then profitability should be decreased. Negative relationship between cash conversion cycle and profitability exists. The result indicates that if managers reduce collection period at the least level then company profit should be increase and if the managers take inventory turnover days at minimum then due to this firms profitability also increases and for the purpose of profitability of the firm they should reduce cash conversion cycle.

(Ali, 2011)An empirical examination to find relationship between working capital management and profitability. Data was collected from financial statements of 160 textile firms from time duration of 2000-2005. Fixed effect model and ordinary least square model was used for

regression analysis. Quantitative approach is measured to be appropriate approach for the study because numerical and secondary data was used in the study. Positivism paradigm is suitable as the authors verifying the earlier studies. Negative relationship between average day's receivable and return on assets exists that if there is undue length of account receivables then the profitability of the company decreases. Positive relationship between average days in inventory and return on assets exists that due to decrease in inventory the firm profitability also decrease. Positive relationship between average day's payable and return on assets exists which define that if the payment is done earlier then ultimately profitability of the company increases. The findings are that which firm is less profitable they make their due payments long and long and they depend on credit from their suppliers. It is come to known that if the textile firms make effective strategies or collection then it help the organization to enhance their profitability.

(Aguenou, Farooq, Abrachee and Brahhimi , 2015)examine the relationship between Working capital management and profitability in which data set was collected from Casablanca stock exchange in which 43 non-financial firms was selected and data is extracted from period 2006-2012. Quantitative approach is measured to be appropriate approach for the study because numerical and secondary data was used in the study. Positivism paradigm is suitable as the authors verifying the earlier studies. Fixed effect regression was used for panel data set. Positive relationship between average collection period and return on assets occurs which shows that non-financial firms should collect their payments as early as possible to result in mind of increased profitability. Negative relation between payment deferral period and profitability exists which shows that the firms which gain high profit wait as long as they can for the purpose of payment of their bills. If the Moroccan firms can correctly handle cash conversion cycle then they increase their profitability. During crisis period account receivables policy should be changed as credit is given to customer for long time and on the other hand there is no need to change the polices about inventory and account payable.

(Arbidane and Ignatjeva , 2013)The study present clear evidence to found the effect of working capital on firm profitability in Latvian companies in which data was collected from 182 manufacturing firms from annual statements of these firms and the time period was 2004-2010. Descriptive statistics which told about collected data features, Pearson correlation analysis which describe the relationship between variables and regression analysis which describe analysis between variables were used for the purpose of analysis. Quantitative approach is measured to be appropriate approach for the study because numerical and secondary data was used in the study. Positivism paradigm is suitable as the authors verifying the earlier studies. Negative relationship between return on assets and receivable collection period exist. Less significant relation between gross operating profit and receivable collection period exist. Negative relationship between cash

conversion cycle and return on assets if the time lag between purchase of raw material and sales is decrease then it affect the profitability in increasing way. The findings of this article suggest that Latvian organizations should improve their conversion of working capital components because if there is the management of working capital management is good then its ultimately effect value of the company. Further describe that if Latvian companies want to create value of their company then they should pay attention to receivable payable and inventory conversion period of the company.

(Malik and Bukari , 2014)Explore the impact of working capital management on corporate performance in which data set was collected from Karachi stock exchange list about 38 cement, chemical and engineering sector from the year 2007 to 2011.Pooled ordinary least square technique is used for analysis. Quantitative approach is measured to be appropriate approach for the study because numerical and secondary data was used in the study. Positivism paradigm is suitable as the authors verifying the earlier studies. Negative relationship between average payment period and return on equity shows that is average payment period is lengthy then the profitability of the company decrease. Positive impact between cash conversion cycle and return on equity exists which shows that if there is increase in cash conversion cycle then profitability of the company increase. Positive link between average collection period and return on equity exists which shows that as the collection period increases then the profitability of the company also increases because they have lend credit to its customer on high margin .Negative association between average age of inventory and return on equity indicate that if the inventory days will be increase then obviously it increase profitability of the company. Result indicates that if the average collection period was better than the profitability also increases. Firms which have good financial position pay their payments earlier as compared to the less profitable firms and only those firms delay their payable which has less cash available for their operations. Managers of the firms should take help from the financial consultants in order to plan efficient management of cash conversion cycle.

(Napomech, 2012) Investigate to find the effect of working capital management on firm profitability. Data was collected from Thailand stock exchange up to 255 companies with time period from 2007 to 2009. Quantitative approach is measured to be appropriate approach for the study because numerical and secondary data was used in the study. Positivism paradigm is suitable as the authors verifying the earlier studies. Negative relationship between gross operating profit and inventory conversion period which shows that if the time period between production and sale is short then it effect the profitability in increasing way. There is the negative relationship between gross operating profit and receivable collection period which shows that if the money from customer collect later then the profitability of the company decreases. Negative linkage between account payable and profitability exists which shows that less profitable firms delay their bill to give it to their creditors. If

the cash conversion cycle and receivable collection period is shorten mean that the days will be decrease then its ultimately increase profit of the company. If cash collect from customer as early as possible then it reveals the profitability of the company.

(Saghir,Hashmi and Hussain, 2011)found the relationship between working capital management and profitability in which researcher collect data was collected from 60 textile sector and data was extracted from Karachi stock exchange from period of 2001 to 2006 and in data was analyzed through Pearson correlation, model summary and ANOVA which told about that that the model is suitable for the significant level of .000 or not. Quantitative approach is measured to be appropriate approach for the study because numerical and secondary data was used in the study. Positivism paradigm is suitable as the authors verifying the earlier studies. Negative relationship between cash conversion cycle and profitability exist which told about that decrease in cash conversion cycle result in increases in profitability. Negative association between number of days in inventory and profitability exists which shows that the late the inventory is sold then the profitability of the company decrease. Negative linkage between payable turnover in days and profitability occur which shows that less profitable firms pay their bill as long as possible. Findings of this article is that profitability of the company told that how the managers of the company manages working capital. If there is mismanagement in inventory which decreases the sales then there is need to expense for obtaining inventory which result cost and profitability of the company decreases. By taking advantage given by supplier less profitable firm pay long as they can prolonged and to overcome the cash gap in cash conversion cycle less profitable firms decreased their account receivable.

(Yasir,Majid and Yousaf, 2014)aim of this study to examine the relationship between cash conversion cycle and performance of cement sector. Data was collected from 16 cement firms ranging from 2007 to 2012.Descriptive statistics to calculate mean median mode, multiple regressions to check the effect of individual and Pearson correlation coefficients was used to find the relationship between variables was used for the purpose of analysis. Quantitative approach is measured to be appropriate approach for the study because numerical and secondary data was used in the study. Positivism paradigm is suitable as the authors verifying the earlier studies. Negative relationship between cash conversion cycle and profitability exists that which shows that if the cash conversion cycle will be shorter than the profitability of the company increases. Negative relationship between average collection period and return on assets exist which shows that if the credit time given to the customer is decrease then the profitability of the company increase. Negative relationship between inventory conversion and return on assets exist which shows that the inventory held for shorter time in response the profitability of the company increases. For the assessment of liquidity cash conversion cycle was effective measure. If the current assets and current liabilities of the firms are efficiently

managed then it increase the profitability of the firm. Smaller length of cash conversion cycle lead to profitability of the company.

(Hoang, 2015)Find relationship between working capital management and profitability in which data set was collected from 98 manufacturing firms which were listed on HO CHI MINH stock exchange from 2009 to 2014. Descriptive statistics pearson correlation and regression analysis was used. Quantitative approach is measured to be appropriate approach for the study because numerical and secondary data was used in the study. Positivism paradigm is suitable as the authors verifying the earlier studies. Negative relationship between average collection period and return on assets exists which shows that if there is low profitability of the company then it is due to slow collection of account receivable of the company. Negative linkage between average inventory period and return on assets exists which shows that the loss of company financial position if the company hold inventories. Negative bond between average payment period and return on assets exists which told about if the companies lengthens average payment period then its damages company reputation and creditor not give credit to company which decreases the profitability. If the firm is willing to take interest earning then they should not hold inventory as there is storage cost which decreases the profitability. If the payment was done earlier and inventory level should be maintained at lower level and credit period is more tight then its increases the company profitability.

(Majeed,Makki ,Saleem and Aziz , 2013)to examine the impact of Cash conversion cycle on the performance of Pakistani manufacturing firms in which panel data set was selected from 32 firms from three manufacturing sectors which was chemical, automobiles and construction and material for the period of five years 2006-2010. Correlation and regression analysis were used for the analysis purpose. Quantitative approach is measured to be appropriate approach for the study because numerical and secondary data was used in the study. Positivism paradigm is suitable as the authors verifying the earlier studies. Negative relationship between average collection period and return on assets exists which shows that if there is low profitability of the company then it is due to slow collection of account receivable of the company. Negative linkage between average inventory period and return on assets exists which shows that the loss of company financial position if the company hold inventories. Negative bond between average payment period and return on assets exists which told about if the companies lengthens average payment period then its damages company reputation and creditor not give credit to company which decreases the profitability. The findings suggest that to reduce the cash gap in cash conversion cycle less profitable firms decrease their account receivable. If the credit period given to the customer is reduced then the profitability of the company increase. There is the concern of investor of company daily operations. There should be need to determine the sector wise relationship between working capital management and profitability in the future literature.

(Lawal,Abiola and Oyewole , 2015)Find the effect of working capital management on profitability in which data set was collected from 6 manufacturing companies and data was obtained from financial statements of these companies. To test that whether the data was stationary or not panel normality, multicollinearity test and hausman test was performed With the help of Eview 7 on the panel data least square regression analysis was used. Quantitative approach is measured to be appropriate approach for the study because numerical and secondary data was used in the study. Positivism paradigm is suitable as the authors verifying the earlier studies. There is negative association between average collection period and profitability which shows that if companies reduce their numbers of days in account receivable then its increase profitability. Negative bond between creditor's payment period and profitability exists which shows that as the time period of the payment decrease then profitability of the company increases. Negative linkage between inventory turnover in days and profitability occurs which told that if inventory turnover days decrease then the profitability of the company increases. If the manufacturing firms wanted investment opportunities then they should give late payment as possible to its creditors. To obtain optimal level of inventory management policies should be appropriate. Minimum cash should be available for the purpose of operations. In term of collection policy managers should be responsible to collect bills as early as possible.

CHAPTER # 3

3. Data and Methodology

3.1 Paradigm

In positivism researcher test theory deductively which means that researcher not builds new theory but work on existing theory. Literature has major role in this case because it's described us the main point on current knowledge and help us to understand the structure of main problem. Data is collected at macro level from the respondents in positivism. The data is present was in numbers form which means that in positivism we apply quantitative technique. We apply descriptive, correlation, regression test, Hausam test, unit root test in positivism. Researchers not visit respondent's site to collect data for the analysis purpose they collect data with the help Annual statements or with questionnaire. Researcher not gives its own opinion and they write it as previous researchers quoted and researcher is not biased and repeatedly checks biasness to minimize them. As researcher not gives its own opinion so that if any other reject hypothesis then the researcher should reject hypothesis to.

In Interpretivism researcher test theory inductively which means researcher builds new theory. Data is collected at micro level in interpretivism because in this focus is on interview and survey and it is impossible to conduct survey and interview of all respondent so data is collected at micro level. The data is present in words form and there is images as well which mean that for interpretivism we apply qualitative technique. We apply text or image analysis for Interpretivism. Researchers visit respondent's site to collect data for the analysis purpose. Open ended questions are asked by the researchers in which respondents gave its point of view about the specific research problem Researcher gives its own opinion and researcher is biased and shows its biasness by talking about interpretations and gives its own point of view. Researcher gives quotes to define different perspectives.

Pragmatism approach is related with mixed method research that in this we both used quantitative as well as qualitative research. The researcher has freedom to use any of the method of research as they use quantitative or qualitative research. Both quantitative analysis and qualitative analysis is used in pragmatism. Researcher use both questionnaire and interviews for data collection both are data collection process of quantitative and qualitative research respectively. In this approach both open ended questions and close ended questions are asked by the researchers. Pragmatism approaches have several advantages as in this we use variety of data sources and in this there is point of view of both researcher and respondents which help in obtaining accurate results with the help of analysis. In this approach we use multiple methods to study the research problem.

Proposed research use positivism approach for its study because it's described us the main point on current knowledge and help us to understand the structure of main problem and proposed research verify the earlier study. Quantitative research is used in research and quantitative research is related to positivism so positivism in research is used. The data is present was in numbers form which origin was annual statements so that why positivism approach is used. Descriptive, unit root test and hausman test was used for research.

3.2 Research approach

There are three types of research methods which is used one is quantitative technique another one is qualitative technique and the last one is mixed method technique.

Proposed research used quantitative research because the numerical data was used for analysis of automobile sector. Quantitative research is the organized process to gather numerical data and information then code that specific data, analyze that data and interpret that numerical data for better business decisions. It is associated with positivism paradigm. Data is collected with the help of annual statements and after obtaining data from it data was analyzed with the help of eview5 and eview7. The analysis determine that to what degree there is the relationship between two variable or more than two variables. There are two sources of data in quantitative technique one is secondary data while another one is primary data. Secondary data is collected with the help of annual statements, published papers, articles, books and Web. The primary data is collected with the help of self-designed questionnaire on all variables. There are many advantages for the use of quantitative research as it's provides lot of updated, accurate and relevant information because the data is collected at large scale for the purpose of analysis like the mean, median, and standard deviation. Eview analysis tells us that whether our findings are real or not. One person can easily understand and compare different business problems which he can face in their business. Forecast and predict what the need of business is in future. Our data is obtained with the help of annual statements of automobile sector so that why our data is secondary data and analyze through software named as Eview 7.

3.3 Sampling and population

Sampling is the technique of selecting a segment from a target population in order to conduct a survey for specific business problem. Sampling can be done with the help of questionnaire which measure the attitudes of people. With the help of sampling we can reduce the cost and time which can be spend if the survey is conducted for entire population. Sampling is divided into two parts one is probability sampling while another one is non-probability sampling. In probability sampling each member of the target population has equal chance to be selected. There are four types of sampling one is random sampling which is based on sampling randomly to every person without creating any

difference among them another one is systematic random sampling in which sampling is done randomly at equal interval next one is stratified random sampling which base on demographic and the last one is cluster sampling is which sampling is done on the base on geographic or location wise. In Non-probability sampling each member of the target population has not equal chance to be selected. There are three types of non-probability sampling first one is snow ball sampling in which by making contact with peoples and using their reference sampling is done another type is quota sampling in which sampling is done on the basis designated number of people and the last one is convenience sampling in which sampling is done from the persons which can be easily accessed.

The sampling technique which used for proposed research was probability sampling because propose research use quantitative research that why probability sampling is used and the type of probability which was used was cluster sampling because from it we can get desired data from specific automobile industries which is located at specific geographical area and the area which was selected is Pakistan. The target population for study will comprise of 13 automobile industries which is situated in different areas of Pakistan to examine the impact of working capital management on profitability for the purpose of collecting information about desired problem in which data was collected with the help of annual statements of automobile sector listed in Karachi stock exchange from the time period of 2010-2014.

3.4 Validity

Validity explains us that we are measuring the right thing or not or really measures the concept that it is devised to measure. There are four types of validity first one is face validity in which we get opinion from any expert another one is predictive validity in which current instrument predict future, third one is concurrent validity where a new measure predicts a current event and the last one is convergent validity in which two instrument is used measure the correlation with each other. For the proposed research the validity which was used was face validity as in this we get expert opinion any expert which has expertise in the specific topic. The expert would be probably person who is related to finance for example it would be finance manager or finance teacher in any of the organization because these persons have lot of experience so that they can help us in checking the validity of data.

3.5 Definition of dependent and independent variables

3.5.1 Inventory conversion period

It helps to find out that to how many days stocks of any company have been hold or its describe that to which extent of time period required to manufacture the product and to sold it to generate cash.

$$\frac{\text{Inventory}}{\text{Cost of sales}/365}$$

3.5.2 Average collection period

It determine to find out that any company uses to which extent of average numbers of days to collect payments from its customers.

$$\frac{\text{Days} \times \text{Average account receivable}}{\text{Net sales}}$$

3.5.3 Average payment period

It determine to find out that any company uses to which extent of average numbers of days to give payments to its suppliers.

$$\frac{\text{Days} \times \text{Account payable}}{\text{Net purchases}}$$

3.5.4 ROA

ROA is the profitability ratio which explains that with the help of available assets how efficiently a company generates profit.

$$\frac{\text{Net income}}{\text{Total assets}}$$

3.6 Methodology

In order to confirm the hypotheses both null and alternative hypotheses, a number of statistical analyses have been carried out to test the impact of working capital management on profitability in automobile sector of Pakistan. There are a number of different methods for statistical analysis. The purpose has been to perform this part of the research as simple as possible. Therefore, the aim of this study is to analyze the impact of working capital management on profitability in automobile sector of Pakistan in this analysis our basic motive is to determine define statistical relationships. The nature of data is secondary so that why proposed research use data which was obtained with the help of annual statements of 13 automobile firms with the time period of 5 years ranging from 2010-2014. By using the E-views 5 and E-views 7 software relationships between variables can be determine which are explain below.

3.6.1 Descriptive Statistics

The Descriptive analysis explains the mean, median, standard deviation, maximum and minimum value of the different variables of the study. Standard deviation explains that to which extent data is deviate from actual. It also explains the minimum value of variable and maximum value of variables which help to come to known that what are the minimum and maximum values of each variable.

CHAPTER # 4

4. Data Analysis and result

In this study proposed research performed four types of analysis, descriptive statistics test, pool unit root test hausam test and cross section random effect. The results of these types of analysis are discussed below.

4.1 Descriptive statistics

| Variables | Observations | Cross Section | Mean | Median | Minimum | Maximum | Std.Dev |
|-----------|--------------|---------------|---------|---------|---------|----------|---------|
| ROA | 65 | 13 | 8.4982 | 8.1394 | -9.5098 | 31.1094 | 7.3973 |
| ACP | 65 | 13 | 22.6296 | 17.8106 | 2.0604 | 75.1015 | 18.9049 |
| APP | 65 | 13 | 74.8236 | 56.4407 | 1.3446 | 226.336 | 51.1947 |
| ICP | 65 | 13 | 80.4776 | 74.0569 | 18.5211 | 191.8505 | 38.7298 |

Interpretation

Table presents the summary of all variables. For this study used secondary data., In this research for understanding of numeric data we apply the descriptive statistic analysis with the help of EVIEW 5 and 7 software of our variable to summarizing data and apply that test our all variables Return on assets , Average collection period ,average payment period ,inventory conversion period. Mean was the average of numerical data while median was the middle value of numeric data ,maximum describe that which is the largest value in the given numerical data and minimum show that what is the smallest value in the given numerical data and standard deviation describe that to which extent data is deviate from actual .First column shows return on assets of which mean is 8.4982, median 8.1394, maximum value 31.1094, minimum value is -9.5098 and standard deviation is 7.3973 which shows that the maximum return which is obtained by automobile companies from their assets was approximately 31% and the minimum return which is obtained by automobile companies from their assets was approximately -9% and the average return was 8.5%. Next variable average collection period mean value 22.6296, median 17.8106, maximum value 75.1015 minimum value is 2.0604 and standard deviation is 18.9049, which shows that the maximum time which is required to collect payments from their customers for automobile companies was approximately 75 days while the minimum time which is approximately 2 days and automobile companies collect

payments from their customers with average of approximately 22 days .Next variable average payment period mean value 74.8236, median 56.4407, maximum value 226.336, minimum value is 1.3446 and standard deviation is 51.1947 which shows that the maximum time which is required for automobile companies to give payments to suppliers was approximately 226 days while the minimum time which is required to give payment was approximately 2 days and automobile companies give payment to supplier with average of approximately 74 days and inventory conversion period mean value 80.4776, median 74.0569, maximum value191.8505, minimum value is18.5211 and standard deviation is 38.7298 which shows that the maximum time which is required for automobile companies to sold the inventory was approximately 192 days while the minimum time which is required to sold the inventory was approximately 18 days and automobile companies sold the inventory with average of approximately 80 days.

4.2 Pool unit root test

| Series | Method | Statistics | Cross sections |
|--------|-------------------------|------------|----------------|
| ROA | Levin, Lin & Chu t | -2.5591* | 13 |
| | ADF – Fisher Chi-square | 15.6983** | 13 |
| ACP | Levin, Lin & Chu t | -5.7858* | 13 |
| | ADF – Fisher Chi-square | 41.0843** | 13 |
| APP | Levin, Lin & Chu t | -7.1176* | 13 |
| | ADF – Fisher Chi-square | 32.259** | 13 |
| ICP | Levin, Lin & Chu t | 0.8747* | 13 |
| | ADF – Fisher Chi-square | 28.8086** | 13 |

*** indicates significance at 1% level and ** indicates significance at 5% level.**

Interpretation

The above pool unit root test shows the stationary of the data of the impact of working capital management on profitability in automobile sector. For that purpose, some sporting variables are used which are defining above. Independent variables are average collection period, average payment period and average collection period and dependent variables are ROA.

Two unit root tests of all the time series are conducted in this analysis. Unit root tests investigate whether the time series are stationary or not. For that purpose we use two tests

- Levin, Lin & Chu t
- ADF - Fisher Chi-square

To determine that whether data is stationary over the specific time limit Levin-Lin-Chu (LLC) and Im, Pesaran, and Shin (2003) has been employed to check the hypothesis. As compare to others Levin-Lin-Chu Test is consider more complex as in this cross section observations are taken and latterly for regression result it help in to merge the data and to evaluate data together and it is the in the form which can be able to apply in regression test. Partial powers have been granted to individual unit root test and it has the power to reject the null hypothesis in unit root. Levin-Lin-Chu Test recommended the following hypotheses

H0: time series are stationary

H1: time series are not stationary

Certainly the basic motive of this test to evaluate the stationary of the given data in the form of unit root test. To shows the normality of the data in pool unit root test check the statistics values of Levin, Lin & Chu t and ADF - Fisher Chi-square. By looking at the above table its shows that variables ROA, ACP, APP, ICP are totally significance. All unit root tests strongly reject the null hypothesis of unit root for all of the series included in the study, which indicate that all the time series included in this study are stationary at the level.

4.3 Hausman test

| Correlated random effects Test cross-section random effects | | |
|--|--------------------|----------------|
| Test Summary | Chi-Sq.Stat | P-value |
| Cross section random | 1.4746 | 0.6881 |

Interpretation

After applying fixed and random effects it is very difficult to determine that which results is a correct and reliable. From Hausman test we decide that which one is the best one. As a result, to decide between a random effects and fixed effects model, researchers often depend upon the Hausman (1978) specification test. In hausman test we compare the p-value to 0.05 if p value is greater than 0.05 then we use random effects and fixed effect is not suitable so in this case p-value is 0.6881 so that why random effect is more appropriate than fixed effect.

4.4 Cross-section random effects

| Dependent variable | ROA | | | |
|----------------------|--------------|------------|--------------|--------|
| Independent variable | Coefficients | Std- Error | T-statistics | Prob |
| C | 15.6527 | 2.9870 | 5.2403 | 0.0000 |
| ICP | -0.0537 | 0.0247 | -2.1706 | 0.0339 |
| APP | -0.0190 | 0.0177 | -1.0746 | 0.0287 |
| ACP | -0.0622 | 0.0523 | -1.1888 | 0.4972 |
| Adjusted R-squared | 0.0805 | | | |
| R-squared | 0.1236 | | | |
| F-Statistics | 2.8689 | | | 0.0043 |
| Durbin Watson stat | 1.6864 | | | |

Interpretation

Proposed research can observed the theoretical relationship between independent and dependent variables. E-views 5.0 and E-Views 7 are software that applied for tests. Proposed research applied estimate test and check the value of Coefficient, Std.Error, Adjusted R-squared and F-statisic of random effect. Above table show the result of random effect which shows the relation between the dependent variable (Return on assets) and independent variables (average collection period, average payment period, inventory conversion period,) in the case of a panel of all the 13 automobile firms which was included for the research purpose. Complete information about the model can be obtained with the help of the results which was shown above. Inventory conversion period coefficients is -0.0537 and value of standard error was 0.0247, sign of coefficient show the negative relation between dependent variable and inventory conversion period and p-value 0.0339 shows the significant effect if 1 unit increase in inventory conversion period of automobile companies by 1 unit than profitability decrease by 0.0537 units. Average payment period coefficients is -0.0190 and value of standard error was 0.0177 ,sign of coefficient show the negative relation between dependent variable and average payment period and p-value 0.0287 shows the significant effect which means that increase in average payment period of automobile companies in 1 unit than profitability decrease by 0.0190 units.

Average collection period coefficient is -0.0622 and value of standard error was 0.0523, sign of coefficient show the negative relation between dependent variable and average collection period and p-value 0.4972 shows the insignificant effect which means that if there is increase in average collection period of automobile companies by 1 unit than profitability decrease by 0.0622 units. Further describe the overall model with the value of $R^2 = 0.1236$ which mean that profitability 12.36% effected by the independent variable (ACP,APP,ICP) and the value of significance f-statistic 0.0043 shows the model of good fit because value of significance is less than 0.05.

CHAPTER # 5

5.1 Discussion and policy recommendations

In the context of inventory conversion period there is the negative relationship between inventory conversion period and profitability which is consistent with the studies of Mansoori and Muhammad (2012); Azam and Haider (2011) ;Ponsian, Chrispina, Tago and Mkiibi (2014); Malik and Bukari (2014); Saghir, Hashmi and Hussain (2011) ;Lawal, Abiola, Oyewole (2015) ;Hoang (2015) ;Yasir, Majid and Yousaf(2014) ;Majeed, Makki, Saleem and Aziz (2013) which shows that if automobile companies stocks have been hold for less time or its shows if time period which was required for raw material to manufacture the product and to sold it to generate cash is decrease then ultimately the profitability of the automobile sector was increased. The above results indicate that null hypothesis H_0 is rejected and alternative hypothesis H_1 which indicates that there is relationship between inventory conversion period and profitability was accepted. Automobile companies was one of those firms of Pakistan which have large inventories composed of raw material so there is the need to sell its product quickly as possible as to generate profit. Automobile companies in order to decrease inventory period should use JIT (Just-In-Time inventory or production) as it a very efficient system used by companies on a large scale which helps free up cash which would otherwise be tied up in inventory. This strategy is favorable for many reasons for automobile companies like it can decrease the investment in factory and warehouse space of automobile companies so as a result it will surely reduce inventory level and rise turnover or profitability and the main benefit of this system is that it help in reduction in operating expenses as the production is done only when there is the need of production otherwise not so it will decrease the use of warehouses and moreover it will reduce safety stocks which is terms as level of extra stock kept to decrease the risk of deficit in raw material. Another process for decreasing inventory period is to turn old and out dated inventory in cash quickly by offering discounts on them so the automobile companies quickly sale their product which was old as in case of cars which model was old they quickly sale it by offering discounts so as the result it increase the profitability of the automobile companies. The above study is contradict with the studies of Ali (2011); Babu and Chalam (2014) which indicates that there is positive relationship between

inventory conversion period and profitability. In the context of average payment period there is the negative relationship between average payment period and profitability which is consistent with the studies of Mansoori and Muhammad (2012) ; Babu and Chalam (2014); Aguenou, Farooq, Abrachee and Brahhimi (2015) ;Malik and Bukari (2014); Saghir, Hashmi and Hussain (2011); Lawal, Abiola, Oyewole (2015) ; Majeed, Makki, Saleem and Aziz (2013) ; which shows that if automobile companies payment period was increased mean the payment which the automobile companies give to the supplier was increased then the profitability of the company should decreased. The above results indicate that null hypothesis H₀ is rejected and alternative hypothesis H₂ which indicates that there is relationship between average payment period and profitability was accepted. The companies of automobile should not maximized their payment for investment opportunities as a benefit in mind to hold cash longer as longer they should give payment to suppliers according to the credit standards which was signed between two parties but give preference to those suppliers in payments which offers discounts by given timely payments as in this suppliers have mind set to give discount to get payments from companies which results in increases in profitability of automobile companies. Automobile companies should not focus on centralized disbursements to slow down disbursements but payments also gives or issue to supplier from sub-office from the disbursement account and also not focus on float as it term refers to the amount of money tied up in cheques that have been written but have yet been collected and encashed. It can be done by paying from a far-away bank, like issuing a cheque on a bank that is far-off from the creditor's bank, so that the firm is enabled to use its funds longer as it is relatively long period for the creditor's bank to get payment the slow disbursement damages automobile companies reputation and creditor not give credit to company which decreases the profitability. The above study was contradicts with the study of Ponsian, Chrispina, Tago and Mkiibi (2014); Azam, Haider (2011);Ali (2011) which indicates that there is positive relationship between average payment period and profitability. Negative relationship between average collection period and profitability which shows that if companies collection period was decreased then the profitability of the companies was increased which indicates that companies collect their payment from their customer as early as possible to increased their profitability but in the scenario of automobile companies there is insignificant negative relationship which shows that p value is greater than 0.05 thus there is no relationship exist between average collection period and profitability thus collection of the automobile companies should not affect their profitability. The above results indicate that alternative hypothesis H₃ is rejected and null hypothesis H₀ which indicates that there is no relationship between average collection period and profitability was accepted.

5.2 Conclusion

Proposed research studied the impact of working capital management on firm profitability of automobile companies of Pakistan. Earlier investigation shows that there is limited number of research in automobile sector of Pakistan to determine the impact of working capital management on firm profitability so the proposed study fill this gap by given literature in which there is the sample of 13 companies of automobile sector which was listed on Karachi stock exchange for the period of 2010-2014 by using a model equation of $ROA = \beta_0 + \beta_1 (ACP) + \beta_2 (APP) + \beta_3 (ICP) + ET$. Inventory conversion period, Average payment period and Average collection period was used as a measure for working capital management and Return on assets was used as a measure for profitability. Data was analyzed through statistical analysis which included descriptive statistics, pool root unit test, hausman test and regression analysis to analyze the data. The findings of Hausam test reveal that random effect model is more suitable than fixed effect model. The findings of random effect models disclose that there was an inverse impact or there is negative relationship between components of working capital (Inventory conversion period, Average payment period and Average collection period) and Profitability (ROA). In the context of inventory conversion period there is the negative relationship between inventory conversion period and profitability which is consistent with the studies of Mansoori and Muhammad (2012); Azam and Haider (2011) ;Ponsian, Chrispina, Tago and Mkiibi (2014); Malik and Bukari (2014); Saghir, Hashmi and Hussain (2011) ;Lawal, Abiola, Oyewole (2015) ;Hoang (2015) ;Yasir, Majid and Yousaf(2014) ;Majeed, Makki, Saleem and Aziz (2013) which shows that if automobile companies stocks have been hold for less time or its shows if time period which was required for raw material to manufacture the product and to sold it to generate cash is decrease then ultimately the profitability of the automobile sector was increased. The above results indicate that null hypothesis H0 is rejected and alternative hypothesis H1 which indicates that there is relationship between inventory conversion period and profitability was accepted. In the context of average payment period there is the negative relationship between average payment period and profitability which is consistent with the studies of Mansoori and Muhammad (2012) ; Babu and Chalam (2014); Aguenou, Farooq, Abrachee and Brahhimi (2015) ;Malik and Bukari (2014); Saghir, Hashmi and Hussain (2011); Lawal, Abiola, Oyewole (2015) ; Majeed, Makki, Saleem and Aziz (2013) ; which shows that if automobile companies payment period was increased mean the payment which the automobile companies give to the supplier was increased then the profitability of the company should decreased. The above results indicate that null hypothesis H0 is rejected and alternative hypothesis H2 which indicates that there is relationship between average payment period and profitability was accepted. Negative relationship between average collection period and profitability which shows that if companies collection period was decreased then the profitability of

the companies was increased which indicates that companies collect their payment from their customer as early as possible to increase their profitability but in the scenario of automobile companies there is insignificant negative relationship which shows that p value is greater than 0.05 thus there is no relationship exist between average collection period and profitability thus collection of the automobile companies should not affect their profitability. The above results indicate that alternative hypothesis H3 is rejected and null hypothesis H0 which indicates that there is no relationship between average collection period and profitability was accepted. Automobile companies in order to decrease inventory period should use JIT (Just-In-Time inventory or production) as it help in reduction in operating expenses as the production is done only when there is the need of production otherwise not so it will decrease the use of warehouses and moreover it will reduce safety stocks which is terms as level of extra stock kept to decrease the risk of deficit in raw material. Automobile companies should not focus on centralized disbursements to slow down disbursements but payments also gives or issue to supplier from sub-office from the disbursement account and also not focus on float as it term refers to the amount of money tied up in cheques as the slow disbursement and float damages automobile companies reputation and creditor not give credit to company which decreases the profitability of automobile companies.

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