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RELATIONSHIP BETWEEN INVENTORY MANAGEMENT AND PROFITABILITY: AN EMPIRICAL ANALYSIS OF INDIAN CEMENT COMPANIES

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ABSTRACT

The importance of efficient working capital management (WCM) is indisputable. Moreover, the adequate and timely flow of inventory is imperative for the success and growth of any company. The present paper is an attempt to study in depth the inventory management practices of Indian cement companies and its impact on working capital efficiency. The purpose of this paper is to examine the relationship between inventory conversion period and firms' profitability. The dependent variable, gross operating profit is used as a measure of profitability and the relation between inventory management and profitability is investigated for a sample of five top Indian cement companies over a period of ten years from 2001-2010. This study employs Regression analysis to determine the impact of inventory conversion period over gross operating profit taking current ratio, size of the firm, financial debt ratio as control variables. The results indicate that there is a significant negative linear relationship between inventory conversion period and profitability.

The results of this research are in line with the previous findings. The findings indicate that Inventory conversion period has an inverse relationship with firms' profitability i.e. when the ICP days increase the profitability of firm decreases and vice versa. It was found that, the firms' profitability as measured by GOP has a negative relationship with financial debt ratio. This implied that profitability increases with decrease in financial debt ratio. Furthermore in this study the relationship between the firm size and GOP was positive which indicates that profitability increases with an increase in firm size. The relationship between current ratio and the GOP was negative.

KEYWORD: Working Capital, Cement Companies, Inventory Management, Liquidity and Profitability.

Introduction

The viability of any business relies on the ability to effectively manage receivables, inventory, and payables. This is important from the point of view of both liquidity and profitability. When there is a poor management of working capital, funds may be unnecessarily tied up in idle assets. This will reduce liquidity of the company and also the company will not be in a position to invest in productive assets like plant and machinery. It will affect profitability of the company. It has been seen that in most of the cases unnecessary funds are tied up with inventories, which is one of the important elements of current assets. Hence, it is necessary to efficiently manage inventories in order to avoid unnecessary investments. A firm, which neglects the management

of inventories, will have to face serious problems relating to long-term profitability and may fail to survive. With the help of better inventory management, a firm can reduce the levels of inventories to a considerable degree.

Inventory constitutes a major component of working capital. To a large extent, the success or failure of a business depends upon its inventory management performances. Proper management and control of inventory not only solve the problem of liquidity but also increase profitability. Inventory establishes a link between production and sales. Every business undertaking needs inventory inadequate quantity for efficient processing and in-transit handling. Since, inventory itself is an idle asset and involves holding cost; it is always desirable that investment in this asset should be kept at the minimum possible level. Inventory should be available in proper quantity at all times, neither more nor less than what is required. Inadequate inventory adversely affects smooth running of business, whereas excess of it involves extra cost, thus reducing profits. The primary objective of inventory management is to avoid too much and too little of it so that uninterrupted production and sales with minimum holding costs and better customer's services may be possible.

The term 'inventory' refers to the stockpile of the products a firm is offering for sale and various components that make up these products. As per accounting terminology, inventory means "the aggregate of these items of tangible property which i) are held for sale in the ordinary course of business, ii) are in the process of production for such sale, and iii) are to be available for sale". Thus, inventory includes the stock of raw materials, goods-in-process, finished goods and stores and spares. James H. Greene states that inventory comprises "the movable articles of the business which are eventually expected to go into the flow of trade".

To evaluate the practices and performances in inventory management in the Cement Industry in India, the present paper is an attempt to analyze the size, composition, circulation, growth and the impact of inventory management on the profitability of the selected companies during the period under study.

Objectives of the study

The core objective of a good inventory management system is to provide the best possible customer service within the restraint of the lowest practical inventory costs. Good service is the result of ordering the right items and quantities of stock at the right time. Inventory optimization tools help companies make reliable decisions on product replenishment. Making these correct decisions quickly improves efficiency and profitability by improving the forecasting of future demand and through more economic stock holding. Reducing the volume of stock held at any given time has a massive impact on the capital outlay an organization has to make. However, this has to be balanced with the need to maintain customer satisfaction through stock availability.

This study is specifically designed to analyze the size of inventory in the selected companies of Indian cement industry, the composition and circulation of such inventory and to find out the existence of relationship between inventory conversion period and firm's profitability.

Literature Review

S.K.Ghosh and S.G.Maji examined the efficiency of working capital management of Indian cement companies by taking a sample size of 20 large cement companies of India for the period 1992-93 to 2001-2002. They observed that the Indian Cement industry did not perform remarkably well during this period. Industry average for efficiency index was greater than one in 6 years out of 10 years study period. Though some of the sample firms had successfully

improved efficiency during these years, the existence of a very high degree of inconsistency in this matter clearly points out the need for adopting sound working capital management policies by these firms. Further, they concluded that, in the matter of achieving the target level (industry norm) of efficiency by the firms, Associated Cement and Dalmia were the most successful firm followed by Decan, Kanoria & Madras. In view of the observed \square values, once again it may not be unwise to conclude that firms under study should take necessary steps in order to improve efficiency in this regard.

Kesseven Padachi (2006) in his study used return on total assets as a measure of profitability and the relation between working capital management and corporate profitability, which is investigated for a sample of 58 small manufacturing firms, using panel data analysis for the period 1998 – 2003. The regression result of his study indicates that high investment in inventories and receivables is associated with lower profitability. The key variables used in the analysis are inventories days, accounts receivables days, accounts payable days and cash conversion cycle. His study also reveals significant relationship between working capital management and profitability has been found in previous empirical work. An analysis of the liquidity, profitability and operational efficiency of the five industries shows significant changes and how best practices in the paper industry have contributed to performance. The findings also reveal an increasing trend in the short-term component of working capital financing.

Ranjith Appuhami (2008) the purpose of his research is to investigate the impact of firms' capital expenditure on their working capital management. The study used Shulman and Cox's (1985) Net Liquidity Balance and Working Capital Requirement as a proxy for working capital measurement and developed multiple regression models. The empirical research found that firms' capital expenditure has a significant impact on working capital management. The study also found that the firms' operating cash flow, which was recognized as a control variable, has a significant relationship with working capital management, which is consistent with findings of previous similar researches. The findings enhance the knowledge base of working capital management and will help companies manage working capital efficiently in growing situations associated with capital expenditure.

Pradeep Singh (2008) in his study made an attempt to examine the inventory and working capital management of Indian Farmers Fertilizer Cooperative Limited (IFFCO) and National Fertilizer Limited (NFL). He concluded that the overall position of the working capital of IFFCO and NFL is satisfactory. But there is a need for improvement in inventory in case of IFFCO. However inventory was not properly utilized and maintained by IFFCO during study period. The management of NFL must try to properly utilize the inventory and try to maintain the inventory as per the requirements, so that liquidity will not interrupt.

Ramachandran and Janakiraman (2009) analyzed the relationship between working capital management efficiency and earnings before interest and tax of the paper industry in India. The study revealed that cash conversion cycle and inventory days had negative correlation with earning before interest and tax, while accounts payable days and accounts receivable days related positively with earning before interest and tax.

All the above studies provide us a solid base and give us idea regarding working capital management and its components. They also give us the results and conclusions of those

researches already conducted on the same area for different countries and environment from different aspects. On basis of these researches done in different countries, we have developed our own methodology for research.

Niranjan Mandal and Dutta Smriti Mahavidyalaya, (2010) in their study makes an attempt to provide an insight into the conceptual side of working capital and to assess the impact of working capital management on liquidity, profitability and non-insurable risk of ONGC, a leading public sector enterprise in India over a year period (i.e. from 1998-99 to 2006-07). It also makes an endeavor to observe and test the liquidity and profitability position of the enterprise and to study the correlation between liquidity and profitability as well as between profitability and risk. They may be concluded that working capital management is very much useful to ensure better productive capacity, good profitability and sound liquidity of an enterprise, specifically the PSE in India, for managerial decision making regarding the creation of sufficient surplus for its growth and survival stability in the present competitive and complex environment.

Koti Reddy and Raghav Baheti (2010) in their study seeks to examine current policies and practices of working capital management at Saregama India Limited and tries to identify the strengths and weaknesses of the company; the opportunities it has and the threats it faces. It contains a detailed analysis of the various factors affecting the working capital requirements of the company and the impact they have on its profitability. The study concludes by suggesting solutions to address the concern areas that have been identified. The company is recommended to focus on digital sales, incentivize cash sales, follow a forecasting model that captures the tastes and preferences of consumers and strictly implement its credit policy.

Jasmine Kaur (2010) did a study which is concerned with the problems that arise in attempting to manage the Current Assets, Current Liabilities and the interrelation that exists between them. This is a two-dimensional study which examined the policy and practices of cash management, evaluate the principles, procedures and techniques of Investment Management, Receivable and Payable Management dealt with analyzing the trend of working capital management and also to suggested an audit program to facilitate proper working capital management in Indian Tyre Industry. He revealed that there is a standoff between liquidity and profitability and the selected corporate has been achieving a trade off between risk and return. Efficient management of working Capital and its components have a direct effect on the profitability levels of tyre industry.

Indian Cement Industry

Cement is an essential component of infrastructure development and most important input of construction industry, particularly in the government's infrastructure and housing programs, which are necessary for the country's socioeconomic growth and development. It is also the second most consumed material on the planet (WBCSD 2002). The Indian cement industry is the second largest producer of cement in the world just behind China, but ahead of the United States and Japan. It is consented to be a core sector accounting for approximately 1.3% of GDP and

employing over 0.14 million people. Also the industry is a significant contributor to the revenue collected by both the central and state governments through excise and sales taxes.

The characteristics of the Indian cement industry need to be discussed to understand its structure better. Firstly, it is a combination of mini (more than 300 units) and large capacity cement plants, where majority of the production of cement (94%) in the country is by large plants. The conventional method of cement manufacturing used by large plants (Rotary Kiln) needs high capacity, huge deposits of lime stone in its vicinity, high capital investment and long gestation period. Hence mini cement plants based on Vertical Shaft Kiln technology, suiting the small deposits of limestone are becoming popular. Also they create less environmental pollution. Against the requirement of Rs. 3500 per tonne of capacity of large plants, capital costs for mini-cement plants come to about Rs. 1,400 to Rs. 1,600 per tonne (ICRA 2006).

The viability of the location plays a major role in the economics of cement manufacturing (Schumacher and Sathaye 1999). One of the other defining features of the Indian cement industry is that the location of limestone reserves in select States has resulted in it's evolving in the form of clusters. The proximity of coal deposits constitutes another important factor in cement manufacturing. Since cement is a high bulk and low value commodity, competition is also localized because the cost of transportation of cement to distant markets often results in the product being uncompetitive in those markets. There are at present seven clusters, where Satna (Madhya Pradesh) cluster is the leader in capacity as well as production (CMA 2007). Others are Chandrapur (North Andhra Pradesh and Maharashtra), Gulbarga (North Karnataka and East AP), Chanderia (South Rajasthan, Jawad and Neemuch in MP), Bilaspur (Chhattisgarh), Yerraguntla (South AP), and Nalgonda (Central AP).

Another distinguishing characteristic comes from it being cyclical in nature as the market and consumption is closely linked to the economic and climatic cycles. In India, cement production normally peaks in the month of March while it is at its lowest in the month of August and September. The cyclical nature of this industry has meant that only large players are able to withstand the downturn in demand due to their economies of scale, operational efficiencies, centrally controlled distribution systems and geographical diversification. Lastly, it is worth mentioning that cement industry has a significant role in the climate change debate and issue of sustainable development. The cement industry produces 5% of global man-made carbon dioxide, a major gas contributing to climate change (WBCSD 2005).

The purpose of this study is to find out the impact of inventory conversion period on gross operating profits of selected cement companies in India.

Research Methodology

This portion of article describes sample, variables, hypothesis development and statistical methods to investigate the dependence of profitability on working capital.

Data set and Sample

A sample size of five Indian cement companies listed in BSE has been purposefully selected for the study purpose. The data for the study period 2000-2001 to 2009-10 have been collected from secondary sources i.e. Annual reports of the company as well as from the website moneycontrol.com. Keeping in view the scope of the study, it was decided to select five large companies on the basis of total assets and whose financial information is available for the entire study period so as to meet our requirements. Editing, classification and tabulation of the financial data collected from the above mentioned-sources have been done as per requirements of the study.

Limitations

We would like to make it clear that, mainly there are three limitations of this study, which are as under:

- The study is confined to ten years data only, i. e. from 2001–2010, therefore, a detailed analysis covering a lengthy period, which may give slightly different results has not been made.
- The study is based on secondary data collected from the website www.moneycontrol.com and the websites of sample companies; therefore the quality of the study depends purely upon the accuracy, reliability and quality of the secondary data source. Approximation, and relative measures with respect to the data source might impact the results.

The study is based on five companies of the Cement Industry in India that are also drawn from the companies listed in BSE. Therefore, the accuracy of results is purely based on the data of sample units. If one takes more sample units the results may go slightly differently.

Hypothesis of Study

On the basis of above mentioned objectives, the following hypotheses in the context of cement industry have been developed.

- Proper management of inventory improves liquidity and profitability position.
- There is a significant negative relationship between inventory conversion period and profitability.

Tools and Techniques

For assessing the size, composition, circulation and growth of the inventory position, Mean, Standard deviation and Co-efficient of variation is used. To find out the relationship between sales and inventory linear regression analysis, Karl persons co-efficient of correlation is used. To test the results of regression and correlation co-efficient t test is applied.

Details of Sample Companies

The following table shows the details of sample companies selected for study purpose:

Table - 1

DETAILS OF COMPANIES UNDER STUDY							
Sl. No.	<u>Company Name</u>	Total Assets as on 31-3-2010 (Rs. In Crores)	Size Group	Year of Incorporation	Age Group	State	Region
1	<u>Ambuja</u>	7,395.13	Large	1981	New	Gujarat	West

	Cements						
2	ACC	6,993.31	Large	1936	Very Old	Maharashtra	West
3	India Cements	6,268.54	Large	1946	Very Old	Tamil Nadu	South
4	Madras Cements	4,124.67	Large	1957	Old	Tamil Nadu	South
5	Shree Cements	3,840.48	Large	1979	Old	Rajasthan	West

Data Analysis

KEY RESEARCH VARIABLES

The key variables used in identifying the impact of inventory management on profitability of selected cement companies of India include Inventory conversion period, gross operating profit, current ratio, firm size and financial debt ratio. The independent variable is Inventory conversion period and dependent variable is gross operating profit. The remaining are control variables. The type, expected coefficient sign and rationale or relationship between dependent and independent and control variables are shown in the following table followed by explanation of relationships.

Table – 2: KEY VARIABLES AND THE EXPECTED IMPACT ON GROSS OPERATING PROFIT (GOP)

Variable	Type	Expected Coefficient sign	Rationale
Inventory Conversion Period (ICP)	Independent Variable	Negative	$ICP \uparrow \Rightarrow GOP \downarrow$
Current Ratio (CR)	Control Variable	Positive	$CR \uparrow \Rightarrow GOP \uparrow$
Firm Size (FS)	Control Variable	Positive	$FS \uparrow \Rightarrow GOP \uparrow$
Financial Debt Ratio (FDR)	Control Variable	Positive	$FDR \uparrow \Rightarrow GOP \uparrow$

INDEPENDENT VARIABLE

An independent variable is the variable which the researcher has control over, what he/she can choose and manipulate. It is usually what the researcher think will affect the dependent variable. In some cases, the researcher may not be able to manipulate the independent variable. It may be something that is already there and is fixed, something he/she would like to evaluate with respect

to how it affects something else, the dependent variable. In this study the independent variable is the Inventory conversion period (ICP)

DEPENDENT VARIABLE

A dependent variable is what the researcher measures in the experiment and what is affected during the experiment. The dependent variable responds to the independent variable. It is dependent because it “depends” on the variations in independent variable. In this study the gross operating profit ratio (GOP) is used as the measure of Profitability of the firm and therefore it is the dependent variable in the study. The reason for using this variable is because the study aimed to associate the company’s operating ‘success’ or ‘failure’ with an operating ratio and relate this variable with other operating variables .

CONTROL VARIABLES

A control variable is the variable that is held constant in order to assess or clarify the relationship between two variables. A control variable is not the independent variable in an experiment but it may affect the outcome of an experiment. It refers to the variable that is fixed or eliminated in order clearly identify the relationship between an independent variable and a dependent variable. In this study the following variables were controlled in order to come up with valid data. The current ratio (CR) is a financial ratio that measures whether or not a firm has enough resources to pay its debts over the accounting period. It compares a firm’s current assets to its current liabilities. If current liabilities exceed current assets (the current ratio is below 1), then the company may have problems meeting its short term obligations. If the current ratio is too high, then the company may not be efficiently using its current assets or its short term financing facilities. This may also have impact on firm’s profitability, and therefore it must be controlled to avoid it from impairing the study. Financial debt ratio (FDR) is a financial ratio that indicates the percentage of a company’s assets that are provided via debt (Deloof, 2003). Firm size in this study referred to amount of sales of the firm, and it was represented by the natural logarithm of sales.

VARIABLE MEASUREMENTS

The following below are the measures pertaining Inventory management and firms’ profitability:

No. of Days Inventory = (average Inventory/Net Sales) x 365

Firm Size = Natural Logarithm of Sales

Financial Debt Ratio = Total Debt/Total Assets

Current Ratio = Current Assets/Current liabilities

GOP = Operating Profit / Total Assets

ESTIMATION TECHNIQUE (REGRESSION ANALYSIS)

Regression model is used to predict one variable (dependent variable) from one or more other variables (independent variables). In this part the researcher presented the empirical findings on the relationship between Inventory conversion period and profitability of the selected Indian cement companies. To investigate the impact of Inventory conversion period on profitability, the model used for the regressions analysis is expressed generally as

$$GOP = f(\text{ICP, CR, FS, FDR,})$$

In the above general equation the GOP is the dependent variable and it is influenced by the independent variables i.e. ICP, CR, FS and FDR.

REGRESSION MODEL

ICP – Inventory conversion period influences the GOP in a negative way i.e. as the number of days increases, the GOP decreases and the vice versa is true. In this model the coefficient was negative (-ve)

$$GOP = \alpha_0 + \alpha_1 CR_{it} + \alpha_2 FS_{it} + \alpha_3 FDR_{it} + \alpha_4 ICP_{it}$$

Where,

$\alpha_0, \alpha_1, \alpha_2, \alpha_3, \alpha_4, \alpha_5$ and α_6 are regression parameters which stand for the coefficients of the independent variables

CR is the current ratio

FS is the firm size

FDR is the financial debt ratio

The subscript “i” denotes number of observations and the subscript “t” denotes the number of years i.e. 10 years.

Findings

The variables were calculated using balance sheet (book) values. The book value was used because the firms did not provide any market value related to the variables that were used in this study. In addition, the measurement of profitability could only be based on income statement values, not on so called market values. The explanatory variables are all firm specific quantities and there is no way to measure these variables in terms of their market value. And also when market values are considered in such studies, the knowledge of the date for which the market value refers becomes unsolvable challenge. This is rather subjective; hence book values were put into the use. The findings are enumerated from two points of view a) descriptive analysis in terms of mean, standard deviation and correlations and b) applying multiple regressions (OLS).

DESCRIPTIVE ANALYSIS

Descriptive analysis shows the mean and standard deviation of the different variables of interest in the study. It also presents the minimum and maximum values of the variables that help in getting a picture about the maximum and minimum values a variable can achieve.

Table - 3

Descriptive Statistics				
Variables	Minimum	Maximum	Mean	S.D.
Gross Operating Profit (GOP)	0.104	0.291	0.23	7.6
Inventory Conversion Period (ICP)	36.4	51.7	41	6.15
Size of the Company = Natural Log of Sales (FS)	6.83	8.43	7.56	0.691
Financial Debt Ratio = Total Debt to Total Asset Ratio (FDR)	0.33	0.648	0.468	0.134
Current Ratio (CR) = Current assets/Current Liabilities	1.1	2.79	1.74	0.764

Source: *compiled from the information of annual reports run on SPSS*

The following observations can be made from the table which was prepared on the basis of ten year data from 2001-2011 for 5 companies.

- The GOP of the companies ranges between 0.104 and 0.291 with mean of 0.23 and standard deviation of 7.6 indicating high variance.
- ICP ranges between 36.4 and 51.7 days with an average of 41 and standard deviation of 6.15 signifying very high variability across the companies.
- The CR ranges between 1.1 and 2.79 with an average of 1.74 and standard deviation of 0.764 showing a normal variability in short term obligations repayment ability.
- The FDR ranges between 0.331 and 0.648 with an average of 0.468 and standard deviation of 0.134 signifies a low variance in the financing pattern of the studied firms.
- The average size of firms recorded the logarithm of sales at 7.56 with a range of 6.83 and 8.43, standard deviation of 0.691. It also shows significant variance but not like other variables.

The above analysis concludes that all the five companies, though size wise comparatively not with high variance, the other selected variables are varying significantly as their standard deviations, ranges are significantly higher. The high variance is normally related with managerial decisions and efficiency in execution of their policies.

CORRELATION BETWEEN VARIABLES

An attempt is made here to find the relationship between ICP and GOP used in the model given in the methodology so as to know the direction of the impact of ICP on the profitability of the SMEs. For the purpose, Pearson's Coefficient of correlation analysis is applied to find the relationship between the inventory conversion period and gross operating profit of the companies. As stated in review of literature, if inventory conversion period comparatively decreases over a period of time it enables higher turnover in sales and increase in GOP. Hence the expected relationship should be negative. In addition the relationship between GOP and control variables as well as ICP and control variables is also calculated. This is because change

in ICP impacts control variables like CR.FDR.SIZE. The calculated relationship between these two variables along with control variables is presented in the following table.

Table - 4

CORRELATION ANALYSIS					
	GOP	ICP	FS	FDR	CR
GOP	1.000				
ICP	-0.939	1.000			
FS	0.262	0.021	1.000		
FDR	-0.565	0.262	-0.780	1.000	
CR	-0.636	0.659	-0.453	0.227	1.000

Source: compiled from the information of annual reports and run on SPSS

From the analysis of the above table the following observations can be made:

1. The correlation between ICP and GOP is -0.939. It shows that decrease in ICP is resulting into increase in GOP and vice versa. This is as per the expected relationship.
2. The correlation between ICP and CR is 0.659; indicating decrease in ICP is resulting into decrease in CR and vice versa. This is as per the expected relationship.
3. The correlation between ICP and FDR is 0.262 signifies that when ICP decreases, the FDR also decreases and vice versa. This is also as per the expected relationship.
4. The correlation between ICP and SIZE is 0.021, which indicates that decrease in ICP is resulting into decrease in SIZE and vice versa. This is unexpected relationship. It shows the ineffectiveness of managers to increase sales level because of decrease in ICP.

MULTIPLE REGRESSIONS ANALYSIS

In this section, the empirical findings on the relationship between inventory conversion period and profitability of the cement companies were presented. As the other reviewed researchers' findings stated, if inventory conversion period comparatively decreases over a period of time the GOP would increase. Therefore the expected relationship should be negative. The relationship between GOP and control variables as well as ICP and control variables was calculated using multiple regressions. The calculated relationship between these two variables along with control variables is presented in the following table.

Table - 5

Regression Analysis							
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	.715	.103		6.932	.006		
ICP	-.012	.002	-.939	-4.743	.018	1.000	1.000
FS	.761	.035	0.281	21.594	.002	.337	2.966

FDR	-.011	.001	-.850	-12.547	.006	.932	1.074
CR	-.197	.039	-.342	-5.053	.037	.932	1.074

The following observations can be made from the table:

1. The coefficient of ICP was negative (= -0.012). This implied that when the ICP decreases by 1 day then the profitability increases by 0.12%
2. The regression coefficient of CR was -0.197, which implies that an increase in CR by 1 is associated with a decrease in profitability by 20% and vice versa. It implies that higher the liquidity, lower is the profitability.
3. The coefficient of FDR in the regression was -0.011 which implies that an increase in FDR by 1 is associated with a decrease in profitability by 1.1%. In other way round, when the FDR decreases by 1 then the profitability increases by 1.1%
4. The regression coefficient of SIZE was 0.761, which implies that an increase in SIZE by 1 is associated with an increase in profitability by 76% and vice versa.
5. The VIF ranged from 1.000 to 2.966, starting from SIZE = 2.966, ICP = 1.000, CR = 1.074 to FDR = 1.074. This implied that each variable had some correlations with other independent variables. The tolerance range from 0.337 to 1.000, where CR = 0.932, FDR = 0.932, ICP = 1.000 and SIZE = 0.337. This implies that there was no problem of Multicollinearity. It should be kept in mind that Multicollinearity problem is observed when the tolerance is less than 0.1
6. The regression equation is:

$$\text{GOP} = 0.715 + 0.761\text{LnS} - 0.011\text{FDR} - 0.197\text{CR} - 0.012\text{ICP}$$

Based upon the above results, both the hypotheses are accepted.

Conclusions

Previous researches predicted negative relationship between ICP and firms profitability. The results of this research are in line with the previous findings. The findings indicate that Inventory conversion period has an inverse relationship with firms' profitability i.e. when the ICP days increase the profitability of firm decreases and vice versa. These results complied with those from studies by Raheman and Nasr (2007), Deloof (2003), Garcia-Teruel and Martinez-Solano (2007) and Falope and Ajilore (2009) who found negative relationship between ICP and profitability of firms. The relationship in this study is significant because for every one day decrease of ICP the increase in profit was 0.12 percent.

Finally the firm size, current ratio and financial debt ratio are the variables which appear in the regression model as control variables. In the regression model it was found that, the firms' profitability as measured by GOP has a negative relationship with financial debt ratio. This implied that profitability increases with decrease in financial debt ratio. Furthermore in this study the relationship between the firm size and GOP was positive which indicates that profitability

increases with an increase in firm size. The relationship between current ratio and the GOP was negative.

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