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IMPACT OF WORKING CAPITAL MANAGEMENT ON FIRMS PROFITABILITY: A CASE OF PAKISTANI LISTED FIRMS

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ABSTRACT

The Working Capital Management checks that company has satisfactory cash flow in order to meet their short term debts and operating expenses. The impact among working capital and firm's profitability is examined for the management of cash cycle management. Three sectors are selected as a sample size: Electricity, Automobiles & Parts and Oil & Gas sectors. The period of the study is from 2009-2012. The data are collect from the official's websites of companies by their annual reports. In this study, (NWC) networking capital and other variables are taken as independent variables and (PFT) Profitability is taken as dependent variable. In the combined analysis the NWC is positive coefficient and significantly impact on profitability. Hence, NADRT is negative coefficient and significant impact on PFT.

Keywords: Working Capital Management (WCM), Profitability, Manufacturing Firms.

JEL Classification: G32, L60, L25.

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1. Introduction

1.1 Background of the Study

Every organization represents the efficient to maintain the level of aspects of Working Capital Management (WCM), Current Liabilities (CL) and Current Assets (CA). For the daily operations of an organization analyzes performance through balancing or maintaining by profitability and liquidity. Sustaining liquidity operations on daily basis is ensure your success and runs to the need of dealing with Working Capital. It is difficult for any manager to make certain that the organization is going in capable and affordable manners. Process of growth and profitability of the company is affected, if the distinction between Current Liabilities and Current Assets create and beyond affected if manger is not being able to manage them efficiently and effectively.

According the (Napomech, 2012) two actions which can increase profitability are: (a) decreasing the inventory conversion period by generating and selling goods quickly and (b) decreasing the receivables collection period by quicken collections. Furthermore, by gross operating profit, short collection period and cash conversion cycle can increase firm's profitability (Vural et al, 2012).

The main objective of WCM is to ensure that companies meet their short-term debt and operating costs just about enough cash flow. The sufficient requirement of investment in working capital is also not good for business, so managers should try to avoid unnecessary investments. Also, it means that for investment capital, business operations raise more funds for the opportunity cost of the investment, especially if it depends on the outside facility to finance working capital. While if the company efficient investment wants as a result they want to appropriate management system should avoid excess inventory (Muhammad Azam and Irfan Haider, 2011).

How can a company manage working capital in a standard way, for this the Cash Conversion Cycle (CCC) is measured. CCC shows days and time it's going to take organization to transfer resource within cash generally flows. CCC is the relationship between activity and efficiency ratio. CCC includes Inventory Turnover and Receivable Turnover and Payable Turnover Days in responsibility. During the same job operating cycle equals to Average Age of the Inventory and Average Collection Period. However, the CCC equals the operating cycle minus the average payment period (Deloof, 2003).

WCM is the most important factor for financial management (FM). There are three important components of working capital (WC), inventory, debtors and creditors. Inventory is the main

part of the WC. The raw materials, work in process goods and goods that are to be fully completed as part of the assets of a company that is ready to work in the sale process. Inventory is one of the most important assets that lead to most companies because the inventory turnover is a major source of revenue generation and subsequent profits for shareholders or owners of the company. The inventory is produce to meet the needs of the public. It is a liability of a company. Generally you can find couple types of working capital (1) Positive working capital (PWC) and (2) Negative working capital (NWC). PWC show that company is healthy and wealthy and have the ability to pay their short term debts mean liability. PWC can calculate by compare of CA by CL. Moreover, NWC show that company is not healthy and wealthy and it has no ability to pay his short term debt (Liability).

1.2 Research Objectives

The study of research objectives are two types, general objectives and other objectives. General objectives define the WC variables which have impact on profitability of firm. There is also exploring the relationship between liquidity and profitability. While the general objectives and other objectives are defines as under:

The general objectives of this research are:

- Identify the various aspects on profitability from by Working Capital Management.
- Search the relationship among the two objectives of liquidity and profitability on Pakistani companies.

The other objectives of this research are:

- Find the correlation between capital and profitability.
- Identify the relationship between profitability and debt used by companies Pak.

1.3 Research Questions

- Is Working Capital Management affects the Pakistani companies profit?
- Is Working Capital Management policies are for a long-term stable?
- Is Working Capital Management affecting the liquidity of a company?
- Is Working Capital Management ensuring that the cash flows can satisfy short-term debt and operating expenses?

1.4 Problem Statement

The problem of this research is that WCM significantly affect the company's profitability or insignificant affect on the profitability of the company. And what is relationship between

WCM and profitability means that they have positive or negative relationship with each other.

1.5 Organization of the Study

The paper is organized as follows. The section two is reviews the literature on the impact of working capital management on the profitability of firms. The section three study about the data and research methodology. The section four represents the results and discussions of the study. In the last, section five shows the conclusion of the study.

2. Literature Review

(Napomech, 2012) researched the management of working capital impact on profitability of Thai firms from the period 2007-2009. The result showed the existence of a negative relationship between operating profit and conversion period inventory and receivables collection period. Thus, manager increase profit of your business may decrease conversion cash cycle, the conversion period of inventory and receivables collection period.

(Raheman et al., 2010) investigated effect the management of working capital on organization performance from 1998 to 2007. The analysis showed the management of working capital made a significant effect on profitability. In addition to size of firm, growth of sale and financial leverage also significantly affect the company's profitability.

(Abdul Raheman and Muhammad Nasr, 2007) identify impact of the management of working capital on profitability and liquidity the PAK Company from the period 1999-2004. The analysis showed that exist of strong negative relationship between the variables of profitability and management of working capital of the company. In addition, they searched there was a significant negative correlation between profitability and liquidity. Furthermore, a significant negative relationship found between profitability and debt used by company. In addition, a positive correlation found between profitability and size of firm.

(Deloof, 2003) explores effect the management of working capital on the profitability of Belgium Company from period 1992-1996. The result shows negative significant relationship among gross revenue and no of days in receivable, payable account and inventory account

(Sajid Nazir and Talat Afza, 2009) examine relationship among the policy of management of working capital and profitability of company from 1998 - 2005. The result shows a negative correlation between the company's profitability. They also explore the possible link between politics and aggressive accounting and area of market profitability.

(Vural et al., 2012) examine the relationship among significant of working capital management components or performance of company from 2002 - 2009. The results showed

huge amount of leverage make a relationship which is negative with profitability and value of firm.

(Tariq et al., 2013) search impact on financial performance by working capital management of Pak in the period 2007-2011. The results show that the CCC, cycle operating income, number of days of receivables strong positive correlation with the performance of the company and are significant. Despite the no of day's inventory turnover or no of days to payable turnover were negative correlated with the performance of the company and is insignificant.

(Tufail, 2013) examine effect of working capital policies at the profitability of company from 2005 to 2010. The results show aggressiveness about the strategies management of working capital has negative relationship with profitability. They also have positive relationship of liquidity and size with the company's profitability, while the net debt to equity is negatively correlated with profitability.

(Arunkumar O.N and Radha Ramanan, 2013) examine effect working capital management on profitability of company over period of 5 years. The analysis shows existence of positive relationship along with debtor days or profitability or inventory day. Furthermore, the days of lenders shows a positive and significant relationship.

(Warnes, 2013) identify the profitability of Pak companies which is effect by management of working capital the period 2007-2011. The results showed a negative relationship among profitability and working capital management. Moreover, analysis recommends that manufacturing company's profitability, reduction the length of CCC can be increased to a certain level.

(Usama, 2012) identify impact the management of working capital on the liquidity and profitability Pakistani companies in the period 2006-2010. The result showed that there was a positive effect on liquidity and profitability by working capital management. Furthermore, size of firm or total assets of financial asset has positive significant effect on company profitability however a collection average period make negative significant effect on profitability of companies .

(Ogundipe et al., 2012) examine effect the management of working capital on corporate performances and company's value in Nigeria in the period 1995-2009. The analysis showed existence of negative significant relationship among the market assessment and CCC or performance of the company so that the debt related positively form valuation of market or relate negatively to performance of companies. He also proposed the implementation of well-

made or managed working capital that may expect creation of corporate value which share positively.

(Zubair Arshad and Yasir Gondal, 2013) identify the impact of relationship among management of working capital or profitability of Pak companies 2004-2010. A result showed exists of negative significant relationship among the working capital mgt to company's profitability. An analysis also suggests that the activity of profit can be increased by reducing the inventory periods.

3. Data and Research Methodology

3.1 Data

Several industrial sectors happen to be preferred with Karachi Stock exchange. The total sectors of Karachi Stock Exchange are 32 and listed companies are 488. The very first is Electrical source together with the second is Parts & Automobiles sector and last one is Gas & Oil sector. An overall total for 28 organizations happen to be undertaken mainly from the different ways of collected data. They're just extracted from 2009 - 2012 within the gross annual file of Electrical, Parts & Automobiles and Gas & Oil sectors. Certain records happen to be built-up within the KSE. Moreover, some records happen to be built-up from balance sheet and financial statements together within the company's profiles.

3.2 Hypotheses Testing

The purpose of the following homework will be to study an affect with working capital to the profits with organizations.

H1: working capital includes positive effects on a profit of organizations.

H0: working capital lacks the positive effects on a profit of organizations.

3.3 Variables Definition

3.3.1 Dependent Variable: Profitability

In such an analysis, several aspects will be taken to assess a working capital. The profitability is definitely utilized as dependent variable. In this study, the profit after tax is taken as profitability (Qazi et al., 2012).

3.3.2 Independent Variables

3.3.2.1 Net Working Capital

The net working capital certainly proper by way of current assets taken away by way of current liabilities. Generally we can find couple types of networking capital (1) Positive networking capital and (2) Negative networking capital. Positive networking capital shows that company is healthy and wealthy and have the ability to pay their short term debts mean

liability. Moreover, negative networking capital shows that company is not healthy and wealthy and it has no ability to pay his short term debt (Liability). (Qazi et al., 2012) also researched on this variable. The formula of NWC is:

$$= Total\ Current\ Assets - Total\ Current\ liabilities$$

3.3.2.2 Inventory Days in Turnover

Inventory days in turnover (IDIT) that certainly considered by CGS divided by inventory average and then divided with 360days. If the inventory is build on large scale and trade on credit this may create high sales and minimize the risk of stock out. The trade on credit may encourage the sales because it enables the customers to examine the quality of product. While, the negative relationship assure that sales are declining and profit is lower. (Deloof, 2003; Vural et al., 2012 and Arunkumar O.N and Radha Ramanan, 2013) also researched on this variable. The formula of IDIT is:

$$= Cost\ of\ goods\ sold\ /\ Avg.Inventory\ = Time$$

$$For\ days\ the\ 360days\ divided\ by\ time\ = 360days\ /\ Time$$

3.3.2.3 Number of Account Receivables Days in Turnover

Number of account receivable turnover days (NARDT) that certainly considered by net sales divided by receivable average and then divided by 360days. NARDT describe that how many days a firm takes to collect their account receivables from their customers. (Deloof, 2003; Warnes, 2013 and Tariq et al., 2013) also researched on this variable. The formula of NARDT is:

$$= Net\ sales\ /\ Avg.Receivables\ = Time$$

$$For\ days\ the\ 360days\ divided\ by\ time\ = 360days\ /\ Time$$

3.3.2.4 Financial Asset to Total Assets

The fourth variable of WC is financial assets to total assets (FATA) that certainly considered by adding hard cash plus whole investments and over by total assets. (Abdul Raheman and Muhammad Nasr, 2007and Qazi et al., 2012) researched on this variable. The formula of FATA is:

$$= Cash\ +\ Investment\ /\ Total\ Assets$$

3.3.3 Control Variables

In the scientific experiments the control variable is very important to the results validity. These variables are unchanged or keep constant effects on outcome and identify the relationship and behaviour between dependent and independent variables.

3.3.3.1 Current Ratio

Current ratio (CR) is taken as control variable which is measure by current assets divided by current liabilities. There is inverse relationship between liquidity and profitability. So firm need to maintain the trade off and balance when the balance is obtained the CR is positively relate to PFT. (Abdul Raheman and Muhammad Nasr, 2007) also researched on this variable. The formula of CR is:

$$= Current\ Assets\ /\ Current\ Liabilities$$

3.3.3.2 Debt to Equity Ratio

The debt to equity ratio (DER) states that how much the firm is financed the portion of total assets by its creditors. It symbolizes the leverage of a firm. If the DER value is high than it shows the firm has in indebtedness and more financial leverage. (Tufail, 2013; Abdul Raheman and M. Nasr, 2007 and Qazi et al., 2012) also researched on this variable. The formula of DER is:

$$= Total\ Debt\ /\ Owner's\ Equity\ \times 100$$

3.3.3.3 Firm Size

The firm size (FS) which is the proxy of sales natural logarithm sale (LOS) will be utilized as control variable in such a study. The volume of sale is positive related with profitability. (Tufail, 2013; Deloof, 2003; Abdul Raheman and Muhammad Nasr, 2007 and Qazi et al., 2012) also researched on this variable.

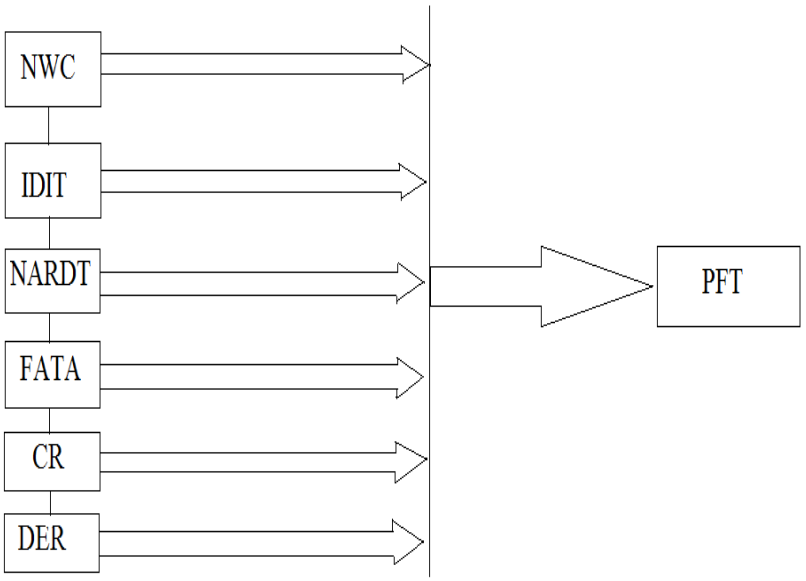

Figure 1: Impact of WC on PFT

3.4 Method of Analysis

The investigate could be to research any effects for being WC over the PFT for an electrical source together with parts and automobiles or gas and oil with reference to Pakistan. Numerous statistical applications happen to be employed on research the value within the rules. This means that, the way for coefficient of correlation has long been preferred. Regression exploration is certainly applied for diagnostic tests any version integrity together with variables significant relationship. For this purpose, the E-View7 is use for analysis. In such an analysis, panel details regression study plus time frame selection of details will be utilized. For any regression study, put details are being used. In such a put details, all of variables will be bundled on a single place plus picked out variables will be grouped as depended or independent variables. Following that, all of variables will be picked out to get regression plus correlation study. The form of our model is the extension of (Deloof, 2003; Abdul Raheman and Muhammad Nasr, 2007and Warnes, 2013).

$$PFT\ nt = \alpha\ 0 + \alpha\ 1\ (NARDT\ nt) + \alpha\ 2\ (IDIT\ nt) + \alpha\ 3\ (CR\ nt) + \alpha\ 4\ (DER\ nt) + \alpha\ 5\ (LOS\ nt) + \alpha\ 6\ (FATA\ nt) + \alpha\ 7\ (NWC\ nt) + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots (1)$$

PFT nt = Net Profit t; n = 1- 26 firms.

α 0 : Alpha

α i: Coefficients X nt

X nt: Independent variables n at time *t*

t: Time = 1-4 years.

ε: The error term

Whereas,

NARDT = Number Account Receivable in days Turnover

IDIT = Inventory of Days in Turnover

CR = Current Ratio

LOS = Sales logarithm

FATA = Financial Assets to Total Assets

NWC = Net Working Capital

DER = Debt to Equity Ratio

4. Results and Discussion

4.1 Combined Results and Discussion of All Sectors

4.1.1 Descriptive Statistics

Descriptive statistics is used to check the normality of data in statistical analysis. The average value of profitability is 4.70E+01. The highest mean value in this table DER 253.5 and FATA has the lowest average with the value of 0.95. The profitability has minimum and maximum value -1.03E+10 and 9.69E+04 respectively. The standard deviation for profitability is 1.44E+10 while CR, DER, FATA, FS, IDIT, NARDT and NWC have standard deviation 1.81, 521.1, 5.592, 1.79, 140.5, 93.85, 2.58E+10 respectively. The skewness may be negative or positive. If the median > mean than it will negative skewness and if mean > median than it will positive skewness. The table 1 result indicates that all the variables have positive skewness. The kurtosis measure the peakedness of data. The CR, DER, FATA, IDIT, NARDT, NWC and PFT are >3 so due to this they are called leptocortic while the kurtosis value of FS is < 3 so it will be called platycurtic. The total number of observation of all variables is 112.

Table 1: Descriptive Statistics of Combined Sectors

	PFT	NWC	NARDT	IDIT	FS	FATA	DER	CR
Mean	4.70E+01	8.04E+09	83.87	53.87	23.55	0.95	253.5	1.87
Median	2.50E+01	5.75E+08	46	24.5	23.5	0.05	108.1	1.29
Maximum	9.69E+04	1.90E+11	544	1160	27.65	51.58	3673	12.2
Minimum	-1.03E+10	-2.27E+10	0.1	0.14	19.25	4E-04	0.193	0.03
Std. Dev.	1.44E+10	2.58E+10	93.85	140.5	1.79	5.592	521.1	1.81
Skewness	4.134503	4.587764	2.03	6.78	-0.09	7.86	5.11	2.92
Kurtosis	21.91973	28.18925	8.81	50.23	2.57	66.84	32.42	13.9
Jarque-Bera	1989.552	3353.881	235.2	1127	0.989	2017	4526	714
Probability	0	0	0	0	0.609	0	0	0
Sum	5.28E+11	9.01E+11	939	603	2638	106	2839	210
Sum S Dev.	2.29E+22	7.40E+22	9777	2191	355.8	3472	3013	366
Observations	112	112	112	112	112	112	112	112

4.1.2 Coefficient of Correlation

Coefficient of Correlation is a technique which is used to find the relationship between two variables (Vural et al., 2012). The correlation is greater than or equal to 0.5 than the positive and strong relationship between the variables otherwise it will be the insignificant below the level of 0.5. Moreover, correlation is greater than or equal to -0.5 than the negative and strong relationship between the variables otherwise it will be the insignificant below the level of -0.5.The correlation always lies between -1 and +1.

The table 2 shows that PFT has a strong positive and significant correlation with NWC value 0.959 (Qazi et al., 2011). Hence, CR which values are 0.5 has positive and significant correlation with profitability. On the other hands, the correlation of DER, FATA and IDIT have negative and insignificant with profitability (Abdul Raheman and M. Nasr, 2007). In the last, the variables NARDT and FS which values are 0.23 and 0.359 respectively have positive but insignificant correlation with profitability.

Table 2: Correlation Coefficient Matrix of Combined Sectors

	PFT	NWC	NARDT	IDIT	FS	FATA	DER	CR
PFT	1							
NWC	0.959	1						
NARDT	0.23	0.194	1					
IDIT	-0.115	-0.101	-0.086	1				
FS	0.359	0.382	-0.087	-0.223	1			
FATA	-0.039	-0.036	0.024	-0.047	-0.058	1		
DER	-0.152	-0.139	-0.063	-0.021	0.247	-0.017	1	
CR	0.5	0.525	-0.027	-0.014	0.041	0.225	-0.246	1

4.1.3 Regression Analysis

By using panel data techniques of fixed effects regression or random effects regression the relationship of working capital management and profitability can be measured.

4.1.3.1 Fixed Effect Model

In random effect model the values of R-squares are higher if we comparison the values of R-square in fixed effect model. In the literature for the consistency test of generalized least squares (GLS), Hausman test applied first in 1978. The Hausman test 1978 is applied to check the model suitability that where either fixed effect model is should be used or random effect model. For this purpose there will be create H1 hypothesis which show that fixed effect model is appropriate. Second is H0 hypothesis which represent that random effect model is appropriate. So if probability value is less 0.05 level than we reject H0 hypothesis (Tufail, 2013).

The fixed effect model has the value of Chi-Sq. Statistics equal to 15.79 significant at $p - v = 0.0271$ significance of 5% level. Due to this rejects the null hypothesis which is developed in the Hausman test. The table 3 shows the results of fixed effect model. The variable of NARDT coefficient is negative and significant impact on profitability at the level of 10% (Deloof, 2003) while NWC coefficient is positive and significant at the level of 1% (Qazi et al., 2011). Hence, FATA and FS have also positive but insignificant impact on profitability (Arunkumar O.N and Radha Ramanan, 2013and Tufail, 2013). In the last, variables CR, DER and IDIT have negative and insignificant in the fixed effect model (Tufail, 2013 and Vural et al., 2012). Furthermore, R-square shows the regress relationship of

dependent and independent variables. It should be more than 50% than it will be show the fitness of the model. In the table 3 the R-square value is 0.951577 which show the fitness of the model. The f-statistic value is 59.08515. The Durbin Watson stat value is 2.068 which show the negativity because value is greater than 2. The mean or S.D value of dependent variable PFT is also shown in the table.

Table 3: Fixed Effect Model of Combined Sectors

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-3.51E+09	8.63E+09	-0.406412	0.6855
CR	-2.11E+08	2.82E+08	-0.748807	0.4561
DER	-683566.9	1150706	-0.594041	0.5541
FATA	14751292	72157359	0.204432	0.8385
FS	2.38E+08	3.63E+08	0.656351	0.5134
IDIT	-124182.9	2924001	-0.04247	0.9662
NARDT	-12438867	6722298	-1.850389	0.0679
NWC	0.524709	0.023795	22.05135	0.0000

R-squared	0.951577	Durbin-Watson stat	2.068099
Adjusted R-sq	0.934452	S.D. dependent var	1.44E+10
F-statistic	55.56606	Mean dependent var	4.72E+09

4.2 DISCUSSION

The coefficient of net working capital in combined analysis of Electricity, Automobiles and Parts and Oil and Gas Producers are 0.524709. The value of positive coefficient shows that there is a positive relationship between the dependent variable PFT and independent variable NWC. Furthermore, p-value is also show the significant relationship among them (Qazi et al., 2011). The coefficient of NARDT is negative value -1243 and significant impact on profitability at the level of 10 % (Deloof, 2003). The coefficient of IDIT is also negative and insignificant impact on profitability (Tufail, 2013 and Vural et al., 2012). The negativity shows that sales are declining and profit is lower. The coefficient of FS is positive but insignificant impact on PFT (Arunkumar O.N and Radha Ramanan, 2013 and Tufail, 2013). The positivity shows that volume of sales is positive relate with PFT. The coefficient of FATA is positive but insignificant impact on PFT (Arunkumar O.N and Radha Ramanan,

2013). FATA gives the idea to the investor about fixed financial asset which he wants to finance relative to the assets. The coefficient of DER is negative and insignificant impact on PFT (Vural et al., 2012). It is the proxy of leverage. It shows the indebtedness and more financial leverage. The coefficient of CR is negative and insignificant impact on PFT (Vural et al., 2012). The negativity shows that there is inverse relationship between liquidity and profitability.

5. Conclusion

The study of this paper is to elaborate the relationship of (WC) working capital and firms (PFT) profitability. In the balance sheet the WC is the major portion. In this paper, an overall total for 28 organizations happen to be undertaken mainly from the different ways of collected data. In this research the data is taken from the three sectors which are Electricity, Automobiles & Parts and Oil and Gas respectively. The data are taken from 2009-2012. In this paper, R shows the fitness of the model at the level of 0.95. Moreover, the result of regression shows that NWC is positive and significant. Hence, the NARDT is negative but significant. The variables of IDIT, DER and CR are negative and also insignificant. Furthermore, the FS and FATA are positive but insignificant. In the correlation result, only NWC and CR are positively correlated. The IDIT, FATA and DER are negatively correlated. Thus, the empirical results of paper show the positive trend of working capital on firm profitability. The previous study of (Qazi et al, 2011; Rahman, 2007; Sajid Nazir and Talat Afza, 2009 and Deloof, 2003) supported the results on the working capital.

Future Directions

In this study, I have worked on manufacturing firms to explore the positive and significant impact on profitability. In future the researcher can also research on other firms and find out the weakness by search the substitute measures of profitability because, the trend always change it can't same all the time.

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