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CASH CONVERSION CYCLE AND FIRMS' PROFITABILITY – A STUDY OF TOBACCO INDUSTRY OF PAKISTAN

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Abstract

Cash conversion cycle (CCC) is an important metric of not only effective working capital management but also the cash management of the firm. This research study was conducted with the objective to look into the relationship of the cash conversion cycle with profitability of the tobacco firms in Pakistan. This study is about evaluating how cash conversion cycle affects the profitability of listed tobacco firms in Pakistan. The research objective of the present study is to examine the existing literature regarding cash conversion cycle and its part in enhancing firm's profitability, which is measured by using the proxy of return on equity. The study takes return on equity as measures of profitability to represent dependent variable. Firm size and debt ratio are taken as control variables. The Cash conversion cycle is considered as an independent variable. Study takes into consideration the three listed tobacco firms of Pakistan for a period of 8 years starting from 2010 to 2017. The data was analyzed by pooled regression; the results showed a significant positive relationship of cash conversion cycle with return on equity. On the other hand, the debt ratio and firm size had an insignificant relationship with return on equity. The significant positive relationship of cash conversion cycle with return on equity in this study indicates that it is not always necessary thatlower the cash conversion cycle, greater would be the profitability of the tobacco firms in Pakistan, measured through return on equity. In this case it shows that tobacco firms are not under pressure to reduce their receivable collection and inventory selling time period in order to increase their profitability. Moreover the tobacco firms are also not under pressure to increase their payment period to increase their profitability, measured by return on equity.

Key Words: Cash conversion cycle, return on equity, firm size and debt

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Introduction

The tobacco industry has its importance for the economic development. Although tobacco's share is little, of around 0.25% of total irrigated land of Pakistan, still the crop plays a significant role in the economy of Pakistan by generating income and employability mainly in the tobacco crop farming, manufacturing, supply and retailing. It's also a source of income for the Government through taxation. A vital workforce is directly and indirectly employed in the tobacco industry, which creates annual income of around Rs.300 billion and a source of subsistence for 1.2 million people in the country.

Hence, the importance of this specific industry for the economy cannot be denied, since it generates a source of revenue for the Government. In order for the Tobacco industry to work efficiently, a good financial management is required which is directly associated with the firms performance. When it comes to good financial decision making, one of the important components is the time that a firm takes to convert its available resources into cash for its operations. In general it is assumed that shorter the time, the more beneficial it would be for the firm, however, there are different cases, depending upon the market.The financial metric that is used for this is called Cash Conversion Cycle. The cash conversion cycle is a metric that indicates the length of the time that a firm takes to convert its available resources in cash. In other words, this financial metric tells the amount of time needed to dispose and sell inventory, amount of time needed to collect receivables and the length of the time that a firm needs to pay off its bills with fines. The cash conversion cycle is a financial metric to gauge the company's management's effectives, that is how proper they are availing and managing the resources of the company.

In this regard, the relationship between cash conversion cycle and the profitability of the listed tobacco firms is examined.

Objective of Study

The objective of this research study is to examine the existing financial literature on the role of cash conversion cycle in strengthening the profitability and to measure the role of cash conversion cycle in explaining the changes in the profitability of the selected tobacco firms listed in Pakistan stock exchange (PSX).

Scope of Study

The study is only limited to the selected tobacco companies listed in Pakistan Stock Exchange of (PSX).

Significance of Study

This study will be helpful for students who are carrying research investigation in this field. Furthermore, the management by understanding the key concepts mention in this study regarding the cash conversion cycle, can enhance the profitability of tobacco firms through effective management.

This study also has its significance for the investors, through assessing the relationship between cash conversion cycle and firm profitability; the investors can increase their share value.

Moreover the policy makers can understand this sector of the economy from a different and a better research perspective, which then can be beneficial in formulizing effective policies for the tobacco industry, which directly and indirectly would have positive consequences for the country's economy.

Literature Review

Previous literature has investigated different variables representing liquidity and its impact on profitability and studied the relationship of accounts receivables, accounts payables, inventory and cash conversion cycle with firms profitability, providing with different results and findings as per how the length of cash cycle has been affecting profitability of the companies using different proxies for profitability.

Richards and Laughlin (1980) presented the idea of cash conversion cycle and used it as a tool for liquidity analysis and measuring the performance of a company.

Gentry et al. (1990) documented that cash conversion cycle affects the firms' market value.

Shin and Soenen (1998) examined the data of some American firms for the time period of 1975 to 1994. It was founded that profitability and cash conversion cycle are inversely related with

each other. Due to the negative strong relationship,profitability can be increased by reducing the period of cash conversion cycle.

Lyroudi and Lazaridis (2000) documented based on their evidence that cash conversion cycle significantly affects the liquidity of the firms.

Deloof (2003) documented that for better the performance of the firms, the time duration for receivables collection should be kept short.

Eljelly (2004) found significantly inverse relationship and linkage between the profitability and the liquidity represented by the cash conversion cycle.

Padachi (2006) carried a research investigation to examine the trends in working capital management and its effects on the profitability of small Mauritian manufacturing firms using panel data analysis for the period of 1998 till 2003.The results from regression showed that high investment in receivables and inventories is associated with lower profitability.The main variables used in the analysis of the studywere inventories, accounts receivables, accounts payable days and cash conversion cycle.

Teruel and Solano (2007) conducted a research investigation on current liabilities and current assets including the account receivables, payables and inventory of 8872 firms of Spain for the period of 1996 to 2002. They used ROA as a proxy to measure firm's profitability and inventory, average collection period, conversion period, payable period and cash conversion cycle as independent variables. The result of the study revealed inverse relationship between the Spanish firms' profitability and average collection period, inventory conversion period. It means that higher will be the collection and inventory conversion period lower will be the firms profitability. It was also suggested that shorter cash conversion cycle increased thefirms profitability.

Uyar (2009) investigated to find a relationship between cash conversion cycle, profitability and size of the firm. The study was on listed firms in Istanbul Stock exchange, the data was collected

for 166 companies from seven different industries for the period of one year (2007). In the research study, total asset and net sale were taken as a variable to measure the size of the firm and ROE as a variable to measure profitability. For statistical analysis, ANOVA and Pearson correlation was run to find out the association of cash conversion cycle with size of the company and with the profitability. Not surprisingly, as per the results there existed a negative relationship between cash conversion cycle and size of the firm. Similarly a negative relationship existed between cash conversion cycle and profitability of the firms.

According to Zariyawati et al (2009) a research study in the context of developing economies, Malaysian firms during the period 1996 to 2006 showed that thereexisted a negative relationship between firm's profitability and cash conversion cycle.

Velnampy&Kajananthan (2013) examinedliquidity position and profitability among listed telecommunication firms in Sri Lanka over a period from 2005 - 2011. Based on the correlation analysis, there was a significant relationship between liquidity ratios and profitability measured by the proxy of return on equity & assets in the Sri Lanka telecom firms. In contrast; there was no significant relationship between liquidity ratios and return on equity & assets in the Dialog telecom firms in the Sri Lankan market context.

Panigrahi (2013) founded a positive relationship between cash conversion cycle and profitability of the cement manufacturing companies of India.

Yasir et al (2014) examined the relationship of the profitability of the cement firms influenced by the length of cash conversion cycle. The results and findings showeda negative correlation between cash conversion cycle and return on assets. It was concluded that higher length of cash conversion cycle reduces the cement firms 'profitability,on the other hand smaller length of cash conversion cycle enhance the firms' profitability.

Oseifuah and Gyekye (2016) conducted a research investigation between cash conversion cycle and corporate profitability; the sample consisted of 75 non-financial firms listed on the Johannesburg Stock Exchange (JSE). Panel data regression methodology was used to analyze

financial data for the 10 year period, from 2003 to 2012. The study results showed that there existed a negative relationship between inventory conversion period and profitability. Furthermore, there also existed a negative relationship between accounts receivables conversion period and profitability.Thus the findings suggest that corporate managers can create firm value for shareholders by reducing the cash conversion cycle to an extent that it enhances its profitability.

Zakari and Saidu (2016) investigated the effects of the cash conversion cycle on the profitability of the listed telecommunication firmsin Nigerian Stock Exchange. The sample was collected from all the listed firms from 2010 to 2014. The sample data was analyzed by using multiple linear regressions. The findings showed significant positive relationship between cash conversion cycle and corporate profitability.

Hypotheses

The hypotheses that are set for this paper:

$H0_A$: Cash conversion cycle has no significant positive relationship with the return on equity of the listed tobacco firms of Pakistan

$H1_A$: Cash conversion cycle has a significant positive relationship with the return on equity of the listed tobacco firms of Pakistan

$H0_B$: Cash conversion cycle has no significant negative relationship with the return on equity of the listed tobacco firms of Pakistan

$H1_B$:Cash conversion cycle has a significant negative relationship with the return on equity of the listed tobacco firms of Pakistan

METHODOLOGY

The rationale of the research study is to examine the impact of cash conversion cycle on profitability of the listed tobacco firms in Pakistan stock exchange (PSX). Previous literature depicts mixed results, hence it may be said that the relationship must be investigated further under different settings and distinct industry to better generalize the results for future arguments

in this regard. So in this study return on equity (ROE) is taken as proxy measurement of the profitability.On the other hand size of firm and debt ratio is takenas control variables.

The variables of the study which are also taken in a previous study,Panigrahi (2013) are calculated as follows:

Inventory Conversion Period (ICP) = (Average Inventories/Net Sales) x 365 Average

Average Receivables Period (ARP) = (Average Debtors/Net Sales) x 365

Average Payables Period (APP) = (Average Creditors / Net Purchases) x 365

Cash Conversion Cycle (CCC) = Inventory Conversion Period + Average Receivables Period – Average Payables Period

Return on Equity = Net Profit/ Shareholders' Equity

Size of Firm = Natural Log of Sales

Debt = Total Debt/ Total Assets

Population and Sampling

For the purpose of the study, threetobacco companies listed at Pakistan Stock Exchange (PSX) are taken as a sample measure the impact of cash conversion cycle (CCC) on profitability of the studied sector.

Table 1 shows list of the tobacco firms taken as a sample

Tobacco companies	**Share symbol**
1.Pakistan tobacco company	PAKT
2. Khyber tobacco company	KTC
3. Philip Morris (Pakistan)	PMPK

Period of Study

The study takes into considerationeight years of financial data of the three listed tobacco firms of Pakistan starting from 2010 to 2017.

Data Collection

Secondary data is collected from the financial statements taken from the selected company's websites.

Data analysis

The data was analyzed by using statistical software, Eviews. In previousempirical evidence, Anghelachi et al (2015) also used Eviews for analysis of the data through multiple linear regression models. Eviews offers a wide range oftools for effectively exploring and analyzing the data. The data was gathered from the financial statements of the three listed tobacco firms in Pakistan stock exchange (PSX).

Descriptive statistics

Descriptive statistic deals with the different concepts and methods concerned with summarizing and description of the important aspects of numerical data of the study. Descriptive statistics is applied to search out the characteristics of the information. Below (table 2) are the stats of descriptive;

Table 2shows the value of Descriptive statistics;

	ROE	CCC	DEBT	SIZE
Mean	2.805666	11.80017	0.733958	7.830916
Maximum	15.80361	199.3389	5.672460	9.011681
Minimum	-1.482455	-157.5352	0.181396	5.672460
Std. Dev.	4.306174	81.78451	1.081585	0.839036

The descriptive statistics of the study are provided in the above table 2. The return on equity (ROE) has a mean of 2.80566, which means that on average the return on equity (ROE), is 2.80566 of the tobacco firms. The mean value is high, the higher the return on equity (ROE), the more efficient the company's operations are making use of those funds. It has the maximum value of 15.80361 and a minimum value of -1.482455. Its standard deviation value is 4.30617.

Similarly; the Cash Conversion Cycle (CCC)has a mean value of 11.80017, while its maximum and minimum values are 199.3389 and -157.5352 respectively.

As for the Debt it has a mean value of 0.733958, while the minimum and maximum values are 5.672460 and 0.181396 respectively. On the other hand, Firm Size (SIZE) has a mean value of 7.830916, while its maximum and minimum values are 9.011681 and 5.672460 respectively.

Correlation analysis

The correlation measures the association of strength among the two variables. The following table.3 shows the correlation's matrix:

Table 3 Shows Correlation matrix

	ROE	CCC	DEBT	SIZE
ROE	1.000000			
CCC	0.435584 0.0334	1.000000		
DEBT	-0.225453 0.2895	-0.067844 0.7528	1.000000	
SIZE	0.713504 0.0001	0.329347 0.1161	-0.545870 0.0058	1.000000

Table 3 shows, correlations of matrix of sample that is taken in the current research. In this, Pearson correlations (Table 3) show number of associations between the variables, with the significance level. The return on equity (ROE) has statistically non-significant correlation coefficient with cash conversion cycle (CCC) at -0.435584 andDEBT at -0.225453.On the other hand, ROE also has statistically significant correlation coefficient with Size at0.713504.

Regression analysis

In this current research, panel regression was used. The panel regression is useful in analysis of both the times series and cross sectional data. Hence regression was carried out to examine the effects of the cash conversion cycle (CCC) along with the control variables .i.e. Firm size (SIZE) and DEBT on the firm's profitability indicator, ROE. The regression model was employed, for checking the effects on the performances of the Tobacco firms. Furthermore, data analysis was done through the use of statistical software, Eviews.

The below table shows the resultof regression model employed to check the effects of cash conversion cycle on the financial performances of the three listedtobacco firms in the Pakistan stock exchange (PSX).

To check if fixed cross-section effects are necessary in the panel-regression, I test with the redundancy fixed effects test. The null hypothesis is that the fixed effects are redundant and thus unnecessary.

Table 4 shows the results of likelihood ratio

Effects Test	Statistic	d.f.	Prob.
Cross-section F	5.350251	(2,18)	0.0150
Cross-section Chi-square	11.197029	2	0.0037

In the above table 4 the likelihood ratio test for redundant fixed effects shows that the use of fixed effects estimation is adequate because the null hypothesis of redundant fixed effects can be rejected on a 5% level. Thus the regression will use cross-section fixed effects. We can conclude from the likelihood ratio that fixed cross-section effects are appropriate in this case

Table 5 shows the fixed effect model

Dependent Variable: ROE

Method: Pooled Least Squares

Included observations: 8

Cross-sections included: 3

Total pool (balanced) observations: 24

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CCC	0.034835	0.010486	3.321994	0.0038
C	-33.47816	18.16264	-1.843243	0.0818
SIZE	4.435060	2.244275	1.976166	0.0637
DEBT	1.556206	0.907111	1.715563	0.1034
Fixed Effects (Cross)				
PAKT	-1.748906			
KHTC	3.834325			
PMPK	-2.085420			

Effects Specification
Cross-section fixed (dummy variables)

R-squared	0.737995	Mean dependent var	2.805666
Adjusted R-squared	0.665216	S.D. dependent var	4.306174
S.E. of regression	2.491573	Akaike info criterion	4.876023
Sum squared resid	111.7428	Schwarz criterion	5.170537
Log likelihood	-52.51228	Hannan-Quinn criter.	4.954158
F-statistic	10.14022	Durbin-Watson stat	2.858761
Prob(F-statistic)	0.000096		

In the table 5 based on the results of the likelihood ratio, fixed effect model was used.The above, table displays the results of the independent variable, cash conversion cycle (CCC) along with

the control variables, e.g. Firm size (Size) and Debt with respect to the firm's profitabilityindicator, return on equity (ROE) , which is the dependent variable. According to theresults of the fixed effect model, cash conversion cycle (CCC) has a statistically significant positive relationship with the profitability indicator return on equity (ROE).

In order to test the hypothesis, considering p valve is less than 5% (<.05). The probability value (0.0038) was significant at the 5% confidence level, which shows that the relationship was empirically reliable. Furthermore the R square shows73.7 percent variation ofreturn on equity (ROE) is explained by cash conversion cycle. Its coefficient value is 0.0348, which indicates that one unit increase of the cash conversion cycle (CCC) leads to 0.0348 units increase of return on equity (ROE), holding other things constant. The probability of F statistics is 0.0000, which is significant, shows that the overall model is good and that the independent variables can jointly influence the dependent variable.

As for the other variables of control's, firm size, (SIZE) and debt have insignificant statistical relationship with returns equity,(ROE), at P –values of 0.0637 and 0.1034 respectively.

These results support the previous study results Panigrahi (2013) which found that the cash conversion cycle is significantly and positively related to return on equity indicating that higher the cash conversion cycle greater would be the profitability as measured by return on equity.

Based on the results, this leads to the rejection of hypothesis $\mathbf{H0_A}$, $\mathbf{H0_B}$and$\mathbf{H1_B}$, respectively. On the other hand, we accept the $\mathbf{H1_A}$; there is a significant positive relationship between cash conversion cycle and the profitability of the tobacco firms of Pakistan.

Conclusion

Cash conversion cycle is significant for every industry since it helps the management to work out the inventory holding period as represented by the total number of days the cash of a company remains into the business operations, starting from the production of inventory till selling of it. Cash cycle is very powerful tool also for assessing how well a tobacco company's working capital is being utilized. Financial managers have to operate the tobacco companies for longer

time frame and for that they make decisions to effectively manage the working capital by creating a good equilibrium between the obtainable current assets and current liabilities.

Previous researches founded negative relationship between cash conversion cycle and profitability. However this research study founded positive relationship between cash conversion cycle and profitability. It relates with the results of another similar research study by Zakari and Saidu (2016), their findings also indicated a significant positive relationship between cash conversion cycle and firms profitability.

In the present study the significant positive relationship between cash conversion cycle and return on equity, shows that it is not always necessary that lower the cash conversion cycle higher would be the profitability measured through return on equity.

The results in this study show that the tobacco firms are not under the pressure to have a lower cash conversion cycle, in other words the tobacco firms are managing well even without a lower receivables collection period and higher payment periods.

Also in the previous empirical evidence, Panigrahi (2013), a significant positive relationship was founded between cash conversion cycle and return on equity.It gave a strong indicationto the management, in terms of return on equity, that longer the cash conversion cycle in time, the lesser capital will be used in current assets and eventually there will be more capital investmentwhich will lead to a higher profitability of the firms.

Return on equity gives a measure of the firm's performance according to the investor's perspective. The investors can best utilize their available resources in the tobacco industry of Pakistan, by assessing the cash conversion cycle with respect to the return on equity. The return on equity has a significant positive relationship with cash conversion cycle, clearly indicating that lesser cash conversion cycle is not always the case where the tobacco firms can be profitable in terms of return on equity. It is therefore recommend to the needfor the tobacco firms to balance the internal policies of the collection, inventory and payment and keep the measures

according to the market conditions.Also, there is sufficient flexibility to deal with customers of all types depending upon the market.

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