

## The Relationship between Cash Conversion Cycle and Firm Profitability: Special Reference to the Manufacturing Companies in Colombo Stock Exchange.

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**Abstract:** Cash conversion cycle is a significant financial metric that used to determine the efficiency of converting organization's inventory into sales and orderly into cash. It is also one of most widely used measure in liquidity management on assessing capabilities of current assets and liabilities. To be successful and remain, profitability would necessarily concerned by organizations at their business operations. Therefore, the present study aimed to examine the relationship between cash conversion cycle and profitability of manufacturing sector organizations listed in Colombo Stock Exchange. As a proxy of independent variables inventory conversion period, debtor conversion period and creditor conversion period combined to derive the cash conversion cycle (CCC) while profitability which deemed to be the independent variables measured through return on assets (ROA) and return on equity (ROE). The study gathered data for 5 years period starting from 2013 to 2017 for 10 listed companies which are operating in manufacturing electrical appliances by using stratified sampling method. Regression Analysis was conducted to test the hypothesis under two linear multiple regression models. Findings of this study highlighted that positive correlation between inventory conversion period and receivable conversion period while negative correlation between payable conversion periods on ROA while negative correlation between all the components of cash conversion cycle and ROE as the measures of profitability. Moreover at regression results, inventory conversion period is having significant positive relationship while receivable conversion period is having significant negative relationship and payable conversion period considered to be having a negative but insignificant relationship on firm's profitability at listed manufacturing sector in Sri Lanka. Therefore, it can be concluded that there is a significant relationship between cash conversion cycle and firm's profitability in manufacturing sector in Sri Lanka by implying that there is a severe need to address on working capital requirement issues appropriately.

**Keywords:** Cash Conversion Cycle, Return on Assets, Return on Equity, Profitability.

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### I. Introduction

Working Capital Management (WCM) one of most vital role in day today business operations, refers to a company's managerial accounting strategy designed to monitor and utilize the two components of working capital mainly current assets and current liabilities with the intention of ensuring the most financially efficient operation of the company. Working capital management and liquidity management hold a significant position among the financial decisions because they are affecting to firm's profitability, risk and its market value. Liquidity management which deemed to be one of most crucial financial management domain since it involves intense trade-offs between risks and returns associated to short term asset and liabilities management. Cash conversion cycle (CCC) is one of the most widely used measures to evaluate and measure the risks and returns associated to liquidity management. It measures the time which it takes to convert into cash from the time when inventory is bought till the time inventory is sold and until the bills are recovered. The cash conversion cycle is having three main components namely receivable conversion period, payment deferral period and inventory conversion period. Cash conversion cycle management is necessarily important for all type of businesses including financial institutions, banks, manufacturing firms etc. Individual firms as well the collective cycle of the industry, highlights how the firms are performing their cash conversion cycle and moreover it also helps to dig out the areas where further improvement is required. For business owners, one of the most important tasks is to estimate and evaluate cash flows of the business to clearly identify the long run as well as short run cash inflows and outflows to timely sort out the cash scarcities and surpluses to formulate operating, financing and investing strategies respectively. CCC is a dynamic measure of on-going liquidity management, as it considers related elements of both balance sheet and income statement along the time dimension (Jose et al., 1996). Measuring an individual firm's CCC length is comprehensively important for its liquidity analysis and

improvements, whereas the industry benchmarks are vital for comparative evaluation of its overall CCC performance and explore the viable opportunities for growth in the related sector (Hutchison et al., 2007) It also helps in planning the payments to creditors on time to avoid losing reputation and faith of customers by enhancing the loyalty and to avoid potential bankruptcy in advance. Generally cash management is based on cash conversion cycle and is considered as important factors enhancing the performance of companies, since it shows how efficient a firm is in its selling of inventory, payments of bills and collection of payments at the business operations. Companies can enhance their profitability through reducing their length of cash conversion cycle through decreasing or lessening the receivables collection period, decreasing or lessening the inventory selling period and increasing or lengthening the credit payment period.

The Colombo Stock Exchange (CSE) has 298 companies representing 20 business sectors as at 29th June 2018, with a Market Capitalization of Rs. 2,893.7Bn ([www.cse.lk](http://www.cse.lk)). Manufacturing sector is one of major contributor to Sri Lanka economy, comprised with 41 companies which functioned in different operations. Contributing to more than 30 percent of Sri Lanka's entire economic output was the industrial sector, which has seen some surprising growth for the past five years. As stated by the Central Bank of Sri Lanka, the largest proportion of the industrial sector was comprised of manufacturing businesses, which accounted for more than 17 percent of the segment's entire output (World Bank Group, 2016). Therefore in this study, special reference is driven to manufacturing sector companies in order to enhance the quality of study.

In this regard, cash management having its implications on risks and returns of the corporate organizations cannot be overlooked by these organizations and hence cash conversion cycle being considered as an indicator of the cash management that need to be explored as to how it may affect the profitability of the corporate units. Due to the rapid change in world's economy, advancement of technology and global competition among the companies have been merely improved and each company is striving to enhance their profits by trying their best to convert cash conversion cycle at optimum level to increase profitability.

Cash conversion cycle is generally used as a measure of evaluating and measuring the risks and returns associated to liquidity management. Since every corporate organization is extremely concerned about how to sustain and improve profitability, they have to keep an eye on the factors affecting the profitability. Consequently, the present study is concerned about how cash conversion cycle (CCC) affects the profitability of manufacturing sector companies listed in Colombo Stock Exchange in Sri Lanka. The current study vested to examine the relationship between cash conversion cycle under the working capital management and profitability of the firms for ten listed manufacturing companies in Colombo Stock Exchange form 2013 to 2017.

## **II. Literature Review**

### **2.1 Theoretical Aspects**

#### **2.1.1 Working Capital Management**

Working capital is the amount of money a company has available to conduct day-to-day operations. The management of working capital is defined as the "management of current assets and current liabilities, and financing these current assets." Working capital management is important for creating value for shareholders. According to numerous studies, working capital management was found to have a significant impact on both profitability and liquidity in different geographical areas. Generally working capital refers to a company's investment in current assets, cash, short term securities, account receivables and inventories. When defining working capital management, more descriptive term is net working capital, which refers to current assets minus current liabilities. It is also explained as current assets, commonly called working capital, represent the portion of investment that circulates from one form to another in the ordinary conduct of business (Gitman, 2003). Wild, Subramanayam and Haslsey (2004) defined working capital management as a measure of liquid assets that provides a safety cushion to creditors. It is also important in measuring liquid reserves available to meet contingencies & the uncertainties surrounding a company's balance of cash and outflows. Filbeck and Kruegger (2005) defined working capital management as the difference between resource in cash or readily convertible into cash (current assets) and organizational commitments for which cash soon will be required (current liabilities).

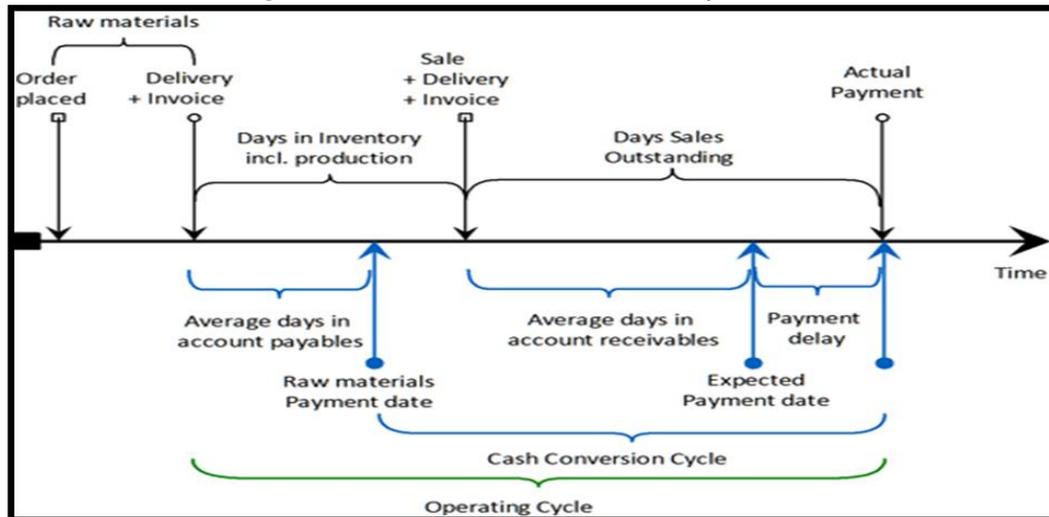
#### **2.1.2 Cash Conversion Cycle**

The level of accounts receivables, payables and inventories affects the liquidity position of the firm significantly, while current and liquidity ratios have been recognized traditionally. However both of these ratios are static and their appropriateness for liquidity analysis is questionable. Therefore, a dynamic liquidity measure for the cash conversion approach had been introduced by Hager (1976). The cash conversion cycle (CCC) is the length of time that funds are tied up in working capital or the length of time between paying for working capital and collecting cash from the sale of working capital (Brigham and Houston, 2007). Brealey, Myers and Mraclus (2001), defined cash conversion cycle as "the longer the production process, the more cash the firm must keep tied up in inventories". Similarly, the longer it takes customers to pay their bills, the higher value of accounts

receivable. On the other hand, if certain firm can delay paying for its own materials, it may decrease the amount of cash it needs as there is no any cash outflow at the moment. In other words account payables reduced net working capital.

To understand on which way that the working capital is managed, CCC and its components will be statistically analysed. Cash conversion cycle can be either negative or positive. A positive result would indicate the number of days that a company must borrow or tie up capital while awaiting payment from a customer. A negative result indicates the number of days a company has received cash from sales before it must pay its suppliers (Hutchison et al., 2007). The ultimate goal is having low CCC, if possible negative on account of the shorter CCC, more efficient the company in managing its cash flow. Theories regarding the elements of cash conversion cycle can be described as Figure 1.

**Figure 1 – Elements of Cash Conversion Cycle (CCC)**



Source: Jordan (2003)

The cash conversion cycle depicted the interrelationship of sales, cash collections, and trade credit in a manner that the individual numbers may not. To the extent a firm uses credit, the length of the cash (operating) cycle is reduced.

### 2.1.2.1 Inventory and Inventory Conversion Period (ICP)

Inventory management is typically much more complicated for exporters in general and for multinational companies in particular, than for purely domestic firms. The product and manufacturing economics of scale that might be expected from selling products globally may prove elusive if product must be tailored for individual local market, as very frequently happens, or if actual production takes place in factories around the world (Gitman, 2003). Inventory affects both income statement as well as balance sheet. In the income statement, inventory is vital in determining result of operation for a particular period while for balance sheet, especially in merchandising companies are the most significant current assets. Ross et.al (2003) defined inventory as composed of raw material to be used in production, work in process and finished goods. Further Inventory can be classified into two primary categories such as optimum inventory and average inventory. The optimum inventory is defined as the exact amount of inventory required to support immediate production needs while average inventory is defined as additional inventory beyond the minimum inventory required supporting immediate production requirements (Farris and Hutchison, 2002).

The average number of day's in inventories represents the period that inventories are held by the companies before they are sold. To have a short cash conversion cycle, a lower number of days would be better. The average amount of inventory is received by taking the sum of the beginning and ending balance of inventory for a year, and divide with two, to get the average. The average amount of inventory is then divided with the cost of goods sold to see how big part of cost goods sold that comes from the inventory. In order to get the outcome of the cash conversion cycle in days the amount given is multiplied with the average amount of days a year, 365 (Lantz, 2008). The study by Deloof (2003) found a significant negative relation between gross operating income and number of day's inventories. This explains that an increase of the inventories is an affect from a decrease in sales which leads to lower profit for the companies. Boisjoly (2009) also found an increase of inventory turnover over a period of fifteen years that indicates that companies have improved their inventory management. To manage inventory, there are several managements accounting practices to apply namely just-in-time procedures, make-to-order procedures, lean manufacturing initiatives with the intention of expanding

their operating processes, quality programs to minimize the number of parts and supplier reasoning to reduce number of suppliers.

### **2.1.2.2 Account receivables and Account Receivable Conversion Period (RCP)**

Accounts receivable is one of a series of accounting transactions dealing with the billing of customers for goods and services received by the customers. In most business entities this is typically done by generating an invoice and mailing or electronically delivering it to the customers, who in turn must pay. Weygand Keiso and Kimmel (2005) defined trade receivables are amounts by customers on an account which resulted from sales of goods and services. These receivables generally are expected to be collected within 30 to 60 days. They are the most significant type of claim held by a company. Ross et.al (2008) stated that the account receivable as “amounts not yet collected from customers for goods or service”.

### **2.1.2.3 Account Payables and Payable Conversion Period (PCP)**

Accounts payable are major source of unsecured short term financing for business firm. They results from transactions in which merchandise is purchased but no formal note is signed to show the purchaser's ability to the seller. The purchaser agrees to pay the supplier's amount that required in accordance with credit terms normally stated on the supplier's invoice (Gitman, 2003). The study of Deloof (2003) showed a negative relation between average number of day's accounts payable and profitability which indicated that profitability has an effect on accounts payable policy by means of a company with lower profit would take longer payment period. In the case of Belgian companies, the suppliers offer substantial discount for the cash payment as customers would lead to increasing profit of the company. In the study of Boisjoly (2009), it showed an increase in account payable turnover over the 15 year time period which is contrary to expect as large companies have extended their payment periods to suppliers from 45 to 60 days or 60 to 90 days. The explanations are that only few companies succeeded in increasing their payment terms, increasing in amount of accounts payable or decreasing in fund for working capital.

## **2.2 Empirical Aspect**

The study by Schilling (1996) identified that the optimal level of liquidity position is obtained at minimized level of liquidity by deployment of available resources in working capital. In a way to attain and maintain optimal level of liquidity, the study further set up the association of cash conversion cycle with the required minimal level of liquidity. Moreover, if at times cash conversion cycle increases the minimal level required for liquidity it would get to upper levels; and if at times the cash conversion cycle decreases the minimal level required for liquidity oppositely it moves down to lower levels. Shin and Soenen (1998), by using a sample consisting of American manufacturing firms for the period 1974-1995 derived a statistically negative relationship between cash conversion cycle and profitability.

Lyrouti and Larzridis (2000) examined whether there is any relationship between the cash conversion cycle and profitability, by using a sample of 82 manufacturing companies which are listed on Greece Stock Exchange and they found positive relationship between cash conversion cycle and return on assets except return on equity. Accordingly Wang (2002) also examined whether there is any sort of relationship between liquidity management and company profitability and value for Japanese and Taiwanese manufacturing firms for the period of 11 years and observed, there was a negative significant relationship was between the CCC and profitability including Return on Equities and Returns on Assets ratio. Furthermore the study revealed that, a strong liquidity management caused by decreasing the CCC would create improved company performance and as a result the value of the company would increase consequently. Yung -jang (2002) conducted a study by using a sample of 5 Japanese companies and 5 Taiwan companies to evaluate the relationship between cash conversion cycle and firm performance and the results highlighted that there is a significant negative relationship between cash conversion cycle and return on assets (ROA) and between cash conversion cycle and return on equity in five manufacturing companies(food, construction, manufacturing, services and other industries) based on the Pearson correlation coefficient. For Taiwanese companies, the results show significant negative relation between CCC and ROA in most of industries. Result from regression analysis confirms the significant negative relationship between CCC and ROA. Deloof(2003) with the sample of 1009 Belgian manufacturing firms for a period of 1992-1996, discussed the possible relationship between cash conversion cycle and profitability by dividing cash conversion cycle into its components inventory, receivables, and payables respectively. Result of the study concluded that increases in all of this period affect profitability negatively.

Eljelly (2004) empirically examined the relationship between profitability and liquidity through the measurements of current ratio and cash conversion cycle on a sample of 929 Joint stock companies in Saudi Arabia. It has been concluded that the effect of cash conversion cycle on profitability is stronger than the effect of current ratio on it and found significant negative relationship between the firm's profitability and its liquidity

level. Amit, Debashish and Rakshit(2005) studied the relationship between liquidity and profitability in the context of Indian Pharmaceutical industry and concluded that no definite relationship can be established between liquidity and profitability. There is a positive relationship between CCC and CR, QR but however, a negative relationship subsists with net profit ratio as well as return on equity (ROE).They were surprised to find out that, no relationship was observed between the CCC and the Return on Assets (ROA).A study on all manufacturing companies in the United States by Nobanee (2006) suggested that CCC is the measure of the effectiveness of WCM that considers all cash flows associated with inventory, accounts receivable and accounts payable. The study investigated that to attain optimal levels of inventory, receivables and payables will reduce the cost of handling and opportunity costs of holding inventories, debtors and creditors, and direct to an most favorable length of the cycle cash conversion. Another study conducted on Spanish small and medium size manufacturing firms (SMEs) in Span by Teruel and Solano (2007) also confirmed the negative association between the profitability and the number of days accounts receivable and inventory days. The study more emphasized that SMEs should be worried about the WC management, as it can help by minimizing its CCC at a minimum.

Samiloglu and Demirgunes (2008) conducted a study to examine the effect of cash conversion cycle as working capital management technique on company profitability of listed manufacturing companies in Istanbul Stock Exchange for the period from 1998 to 2007. According to their observations cash conversion cycle, accounts receivable period and inventory period were used as measurements and return on assets was used as a measurement of profitability. Results from regression analysis showed that profitability has a significant positive relation with firm growth and significant negative relations with accounts receivable period inventory period. Falope and Ajilore (2009) investigated the impact of cash conversion cycle on profitability by using a sample of 50 Nigerian manufacturing firms for the period 1996 -2005. The study utilized the panel data econometrics in a pooled regression, where the time-series and cross-sectional observations were both merged and estimated. They found a significant negative relationship between net operating profit and the receivable days (RD), inventory turnover days (ITR), payable days (PD) and the CCC. Furthermore, they found no significant variations in the effects of working capital management between large and small firms and there is a significant negative relationship between the time taken by the firms to collect cash from its receivables and the profitability. Consequently, there was a positive relationship between the time taken to convert the inventories into turnover and profitability by contradicting the observation while there has been existed a highly significant positive relationship between the time it takes the firm to pay its payables and the profitability.

Zariyawati et al. (2009) established a similar relationship between the CCC and corporate profitability. CCC was the main ratio which used as a WC ratio for the panel data for 1,628 companies from the period of 1996-2006 listed in Bursa Malaysia. The coefficient results of pooled OLS regression analysis suggested that, there was a strong negative significant relationship between the CCC and the corporate profitability which means that, more quickly cash comes in the hands of the business the better becomes the profitability of that business. So, it should be the aim for every manager to reduce the CCC unless the level is achieved. Mohmmadi (2009) examined the impact of cash conversion cycle on profitability for listed companies on Tehran Stock Exchange by using a sample of 92 companies for the period of 1996-2005. Research findings showed that there was a negative relationship between number of day accounts of day accounts receivable, number of days inventories, member of days accounts payable, cash conversion cycle and profitability. The observation made by Nobanee and AlHajjar (2009) analyzed a sample of 2,123 manufacturing companies listed in the Tokyo Stock Exchange for the period 1990-2004 and he approved the statement of Zariyawati et al. (2009) by saying that, profitability could be increased by shortening the CCC, RD and the ITR. His results also explained that, by extending the PD profitability could be increased but while doing so managers need to be careful because extending the PD might affect the credit reputation of the company and cause endanger to its profitability in the long run.

Gill et al (2010) used a sample of 88 American manufacturing firms listed on New York Stock Exchange for a period of 3 years from 2005 to 2007. They found statistically significant relationship between cash conversion cycle and profitability, measured through gross operating profit and moreover found a highly significant negative relationship between accounts receivables and firm's profitability. They suggested that firm can enhance their profitability by keeping their working capital to a minimum. This is because they argued that less profitable firms will pursue a decrease of their accounts receivables in an attempt to reduce their cash gap in the CCC. Dong (2010) similarly reported that the firms' profitability and liquidity were affected by working capital management by analyzing pooled data of 2006-2008 for assessing the companies listed in stock market of Vietnam. The study focused on the variables mainly profitability, conversion cycle and its related elements and the relationship that exists between them. The results were found that the relationships among these variables were strongly negative and denoted that decrease in the profitability occurs due to increase in cash conversion cycle. It is also found that if the number of days of account receivable and inventories were diminished then the profitability will increase numbers of days of accounts receivable and inventories. The

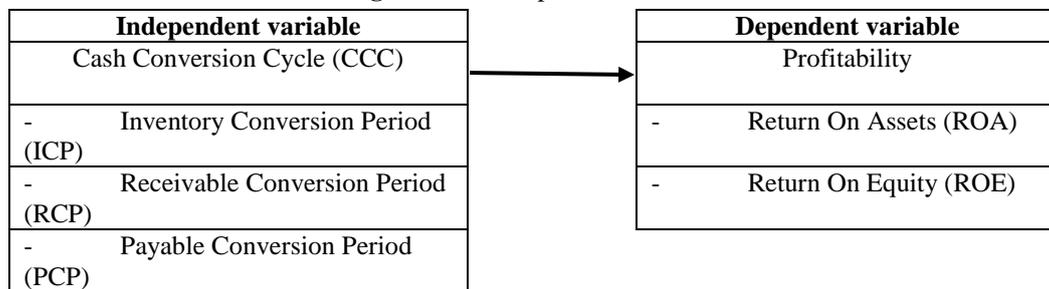
study by Mohamad and Saad (2010) used Bloomberg’s database of 172 listed companies which have been randomly selected from Bursa Malaysia main board for the period of five year from 2003 to 2007. Applying correlations and multiple regression analysis, they found that current assets to total asset ratio was having positive significant relationship with Tobin Q, ROA and ROI. Cash conversion cycle, current asset to current liabilities ratio and current liabilities to total assets ratio illustrated negative significant relations with Tobin Q, ROA. There is an adverse relationship between profitability of the firm and the average receivable collection period, average conversion inventory period, average payment period and cash conversion cycle. Nimalathasan (2010) conducted a study regarding the impact of cash conversion cycle (WCM) on profitability (A selected manufacturing companies in Sri Lanka) with set of hypothesis and according to analyzed results, it found that ICP is highly significant at present level by indicating that with increasing level of ICP, ROA will be increased negatively. At the correlation calculations, cash conversion cycle and ROA are negatively correlated. It revealed that by cash conversion cycle increases ROA decrease. Moreover the study suggested that management can increase profitability by reducing number of day’s inventory and receivables.

The study by Anser and Ali Malik (2013) concerned about evaluating how cash conversion cycle would impact on profitability of manufacturing sector organizations listed at Karachi stock exchange of Pakistan with the objective of investigating the existing literature on the role of cash conversion cycle in enhancing return on assets and equity of the companies and to measure the impact of cash conversion cycle on profitability of manufacturing companies in Pakistan. Return on equity and return on assets have been used as the measures of profitability to represent dependent variables while firm size and debt ratio were taken as control variables and cash conversion cycle is considered as independent variable. The data have been collected from financial statements for five years from 2007 to 2011. Findings of this study revealed that manufacturing companies were having low average return on asset and high average return on equity with reasonable average cash conversion cycle. Moreover cash conversion cycle was having significantly inverse association with both return on assets and equity indicating that lesser the cash conversion cycle greater would be the profitability measured through return on assets and equity ultimately. Murugesu (2013) examined the effect of cash conversion cycle on profitability in ten listed plantation companies in Sri Lanka from 2008 to 2012 and revealed that there was a negative relationship between return on equity and cash conversion cycle at the consideration. Besides that cash conversion cycle also had negative impact on return on asset. Therefore the effect of cash conversion cycle on total profitability as whole contains significant value on plantation sector in Sri Lanka.

**III. Material And Methods**

The study aims at identifying the impact of cash conversion cycle on firm’s profitability at manufacturing sector in Sri Lanka. Accordingly, ten manufacturing companies listed in Colombo Stock Exchange have been selected as the sample space on the basis of availability of information for the period of 2013 to 2017. With the combination of inventory conversion period, receivable conversion period and payable conversion period; Cash Conversion Cycle (CCC) considered as independent variable while Profitability measure through return on assets and return on equity would be the independent variables as shown in Figure 2.

**Figure 2 – Conceptual Framework**



Source: Developed by Researcher

**Hypothesis**

Following the studies of Dong (2010), Mohamad and Saad (2010), Murugesu (2013) and many others assumed that there is an impact of cash conversion cycle on firm’s profitability. According to this study the hypotheses are:

- H<sub>1</sub>-: There is a significant relationship between cash conversion cycle on Firm’s profitability.
- H<sub>1a</sub>-: There is a significant relationship between Inventory Conversion Period (ICP) on Firm’s Profitability.
- H<sub>1b</sub>-: There is a significant relationship between Receivable Conversion Period (RCP) on Firm’s Profitability.
- H<sub>1c</sub>-: There is a significant relationship between Payable Conversion Period (PCP) on Firm’s Profitability.

**Data collection and Sampling**

The study was mainly based on secondary data which have been collected through published financial statements of 10 listed companies which are operating in manufacturing electrical appliances for the period of 5 years from 2013 to 2017. Sample space have been derived on stratified sampling method by filtering the proportions from different companies in same industry with same disciplines.

**Data Analysis**

Descriptive Statistic, Correlations and Regression Analysis were conducted to test the hypothesis of this study. As the main analysis tool, two linear multiple regression models which have been developed as follows:

Model 1:  $ROA = \beta_0 + \beta_1 ICP + \beta_2 RCP + \beta_3 PCP + \epsilon$

Model 2:  $ROE = \beta_0 + \beta_1 ICP + \beta_2 RCP + \beta_3 PCP + \epsilon$

Where,

ROA = Return On Assets

ROE = Return On Equity

ICP = Inventory Conversion Cycle

RCP = Receivable Conversion Cycle

PCP = Payable Conversion Cycle

$\beta$ = Constant

$\epsilon$ = Error term

**IV. Result**

The study has been designed with the analysis tools of Descriptive Statistic, Correlation, Coefficients and Regression Analysis to test whether the created hypothesis which have been used to answer the research questions can be accepted or not.

The descriptive analysis of Table 1 shown below depicting the descriptive statistics of all selected variables in the study including Maximum, Minimum, Mean and Standard Deviation of the data set to measure the central tendency values. The average values of data set indicating by means while standard deviation values imply whether those mean values are concentrated around the mean or scattered far and wide with respective mean values. As it showed, return on assets and payable conversion period deemed to be concentrated around the mean and all other variables seemed to be scattered far with its mean values respectively.

**Table 1 – Descriptive Analysis**

	Maximum	Minimum	Mean	Std. Deviation
ROA	16.09	-22.53	3.7434	7.44129
ROE	151.55	-499.57	5.0946	78.80255
ICP	588.95	24.52	93.216	83.43185
RCP	305.96	0.76	79.626	46.61356
PCP	216.09	1.56	42.863	39.85373

Source: Research Data

Correlation analysis is a tool to analyze the relationship between independent and dependent variable and in this scenario, two models have been developed to separately analyze the impact on ROA and ROE.

**Table 2: Correlation Analysis between ROA and ICP, RCP and PCP**

Variable	ROA	ICP	RCP	PCP
ROA	1			
ICP	0.103	1		
RCP	0.000*	0.704	1	
PCP	-0.113	0.624	0.588	1

Source: e-views data

\* Correlation is Significant at the 0.05 Level (1-Tailed).

\*\* Correlation is Significant at the 0.01 Level (2-Tailed).

Table 2 depicting that ROA is positively correlated with ICP with the implication if ICP increased, ROA would be increased or if ICP decreased, ROA would be decreased. Besides that RCP considered to be weakly and positively plus significantly correlated while PCP negatively correlated with ROA.

**Table 3:** Correlation Analysis between ROE and ICP, RCP and PCP

Variable	ROE	ICP	RCP	PCP
ROE	1			
ICP	-0.037*	1		
RCP	-0.096	0.704	1	
PCP	-0.259	0.624	0.588	1

Source: e-views data

\* Correlation is Significant at the 0.05 Level (1-Tailed).

\*\* Correlation is Significant at the 0.01 Level (2-Tailed).

According to Table 3, ROE have been considered as dependent variable and ICP, RCP, PCP considered as independent variables. All three components in cash conversion cycle weakly and negatively correlated with the ROE while inventory conversion period (ICP) would be the only one component which significantly related, hence entire cash conversion cycle negatively affect to the overall profitability of manufacturing sector in Sri Lanka.

**Table 4 – Results of Regression Analysis on ROA**

Model 1: $ROA = \beta_0 + \beta_1 ICP + \beta_2 RCP + \beta_3 PCP + \epsilon$				
$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$	
4.778	0.034	-0.018	-0.063	
R Square:0.065		Adjusted R-Square: 0.004		N = 50

Source: Research Data

When considered ROA, which denoted that co-efficient between dependent and independent variables were 6.5%., indicated very low level of explanatory power of dependent variable by independent variables.

**Table 5 – Results of Regression Analysis on ROE**

Model 2: $ROE = \beta_0 + \beta_1 ICP + \beta_2 RCP + \beta_3 PCP + \epsilon$				
$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$	
4.084	0.029	-0.01	-0.052	
R Square:0.093		Adjusted R-Square: 0.034		N = 50

Source: Research Data

Table 5 indicated the results of regression analysis of ROE under second model with the view of 9.3% of variation on profitability can be explained by cash conversion cycle at very low level of descriptive power.

Consequently, by observing the results of regression analysis it can be concluded that inventory conversion period is having significant positive relationship while receivable conversion period is having significant negative relationship on firm's profitability. At the consideration of payable conversion period it seem to be having negative but insignificant relationship on firm's profitability at listed manufacturing sector in Sri Lanka. The ultimate result which reflected on this study was that there was a significant relationship between cash conversion cycle and firm's profitability in manufacturing sector in Sri Lanka.

## V. Discussion

According to the findings of many other scholars in this field, it has been revealed that the firm profitability is highly affected by cash conversion cycle in Sri Lanka and following studies can be considered as comparable investigations with current study.

The study conducted by Anser and Ali Malik (2013) investigated the existing literature on the role of cash conversion cycle in enhancing return on assets and equity of the companies and measured the impact of cash conversion cycle on profitability of the manufacturing companies listed at Karachchi Stock Exchange in Pakistan. In this study return on equity and return on assets were taken as proxies of profitability to identify and measure the association and relationship between length of cash conversion cycle and profitability as measured by return on assets and return on equity, while taking size of firm and debt ratio as control variables. 155 manufacturing companies were selected on the basis of availability of information for the period of study under review into consideration of 5 years financial statements data starting from 2007 to 2011. Secondary data was collected through five years financial statements published by State Bank of Pakistan in the form of Balance Sheet Analysis. In the present study, it pointed out that there was an inverse and significant association and linkage of cash conversion cycle with profitability of manufacturing companies descriptively has an opposite effect on return on assets and return on equity; hence cash conversion cycle was negatively related to the profitability of the manufacturing firms. Moreover, it emphasized that shorter cash conversion cycle, inventory conversion period and receivables period of the firms will lead in the direction of increased profitability whereas longer cash conversion cycle, inventory conversion period and receivables period of the firms will lead towards decreased profitability. In addition to that earlier payments to creditors will also drive towards decreased

profitability whereas extended payment periods to creditors of the firms will lead towards increased profitability of the manufacturing firms. Ultimately the study suggested that manufacturing companies required to have well established mechanism to estimate and evaluate the cash flows of the business, to well identify both long run and short run cash inflows and outflows to timely sort out the cash deficiencies and surplus to formulate financing and investing strategies respectively.

In Sri Lankan context, Murugesu (2013) conducted a study to examine the effect of cash conversion cycle on profitability in ten listed plantation companies in Sri Lanka at the time period of 2008 to 2012. The data have been collected in the secondary mode by referring financial statement of selected plantation companies and used regression analysis as the main analysis tool to test whether developed hypothesis can be accepted or rejected. Findings of the study discovered that there is negative relationship between return on equity and cash conversion cycle while explaining 48.5% variation of ROE by CCC. Further Cash conversion cycle also had negative impact on Return on asset with the explanatory power of 61.6% explained by CCC. Additionally it emphasized that the cash conversion cycle have 60.2 % negative impact on net profit of plantation companies in Sri Lanka. Consequently the study have been concluded that cash conversion cycle on total profitability as whole contains significant value in plantation sector in Sri Lanka at large. The results of the current study were seemed to be in line with this study as both studies have been taken place in same geographical area.

## **VI. Conclusion**

The present study has investigated the relationship between cash conversion cycle and profitability of listed manufacturing companies Sri Lanka. The identified variables for this study are inventory conversion period, receivable conversion period and payable conversion period collectively to measure the cash conversion cycle as a proxy of independent variable while return on assets and return on equity as a proxy of dependent variable. The key objective of this study was identifying the relationship between cash conversion cycle and profitability of listed manufacturing companies in Sri Lanka. Stratified sampling method has been used for selecting sample space of this study by covering the area of electrical appliances manufactures in Colombo Stock Exchange. All the data and information for this study are gathered from secondary sources using financial statements. Descriptive statistic and multiple regression statistical technique with two separate models at dependent variable as return on assets and return on equity, have been used to draw conclusions and test the empirical relationships in data. Coefficient of correlation is used to check the causal relationship between the variables with two separate models as components of cash conversion cycle on return on assets (ROA) and components of cash conversion cycle on return on equity (ROE). The results highlighted that positive correlation between inventory conversion period and receivable conversion period while negative correlation between payable conversion periods on ROA as one measure of profitability. There is negative correlation between all the components of cash conversion cycle and ROE at manufacturing sector in Sri Lanka. Multiple regression statistical technique which used to achieve the objectives of the study found that independent variables such as inventory conversion period is having significant positive relationship while receivable conversion period is having significant negative relationship on firm's profitability in manufacturing sector in Sri Lanka. Payable conversion period considered to be having a negative but insignificant relationship on firm's profitability at listed manufacturing sector in Sri Lanka. The ultimate result which reflected on this study was that there was a significant relationship between cash conversion cycle and firm's profitability in manufacturing sector in Sri Lanka at the period of study.

The study contributes to the body of knowledge of cash conversion cycle on firm's profitability in listed manufacturing companies in Sri Lanka. However, in view of the limitations that constrained in this study, it can be provided with suggestions for subsequent studies in future. As the current study aimed to identify the relationship between cash conversion cycle on firm's profitability in listed manufacturing companies in Sri Lanka which can move for another sample segments such as diversified holding sector, construction sector in CSE etc. The concepts of cash conversion cycle can be incorporated as well as extended to border areas of working capital management concepts like debtor management and creditor managements and cash management which would be moreover facilitated for profitability levels of entities at large for better decision making on working capital problems.

## **References**

- [1]. Amit, K. Mallik, Debashish Sur & Rakshit, D. (2005). Working Capital and Profitability: A Study on their Relationship with Reference to Selected Companies in Indian Pharmaceutical Industry. *GITAM Journal of Management*, Vol.3, pp51-62.
- [2]. Anser, R., & Malik, Q.A. (2013). Cash conversion cycle and firms' profitability – A study of listed manufacturing companies of Pakistan. *Journal of Business and Management*, 8(2), 83-87.
- [3]. Brealey, R.A., Myers, S.C., & Marcus, A.J. (2001). *Fundamentals of Corporate Finance*. McGraw-Hill/Irwin, 2001 - Corporations - 798 pages.
- [4]. Brigham, F., & Houston, F. (2007). *Fundamentals of Financial Management*. 10th ed. McGraw-Hill Inc: New York.
- [5]. Boisjoly, R. (2009). The cash flow implications of managing working capital and capital investment. *Journal of Business & Economic Studies*.

- [6]. Deloof, M. (2003). Does working capital management affect profitability of Belgian firms? *Journal of Business and Finance Accounting*, 30: 573-587.
- [7]. Dong, H.P., & Su, J. (2010). The Relationship between Working Capital Management and Profitability: A Vietnam Case. *International Research Journal of Finance and Economics* ISSN 1450-2887.
- [8]. Eljelly, A. (2004). Liquidity-Profitability Tradeoff: An empirical Investigation in an Emerging Market. *International Journal of Commerce & Management*, Vol: 14, No: 2 pp. 48 – 61.
- [9]. Falope, O. I. & Ajilore, O. T. (2009). Working Capital Management and Corporate Profitability: Evidence from Panel Data Analysis of Selected Quoted Companies in Nigeria. *Research Journal of Business Management*, 3 (3): 73–84.
- [10]. Farris II, M. T., & Hutchison, P. D. (2002). Cash-to-cash: the new supply chain management metric. *International Journal of Physical Distribution & Logistics Management*, Vol. 32 No. 4, pp. 288-298.
- [11]. Filbeck, G., & Krueger, T.M. (2005). An Analysis of Working Capital Management Results across Industries. *Mid-American Journal of business*, 20(2).
- [12]. Gill, A., Biger, N., & Mathur, N. (2010). The Relationship between Working Capital Management and Profitability: Evidence from the United States. *Business and Economics Journal*.
- [13]. Gitman, L.J. (2003). *Principles of Managerial Finance*. 10<sup>th</sup> Edition
- [14]. Hager, H.C. (1976). Cash management and the cash cycle. *Manage. Acc.*, 57: 79-88.
- [15]. Hutchison, P. D., Farris II, M. T., & Anders, S. B. (2007). Cash-to-cash analysis and management. *The CPA Journal*, Vol. 77 No. 8, pp. 42-47.
- [16]. Jordan, R. W. (2003). *Fundamentals of Corporate Finance*, 6th ed., McGraw-Hill Companies, Boston.
- [17]. Jose, M. L., Lancaster, C. & Stevens, J. L. (1996). Corporate returns and cash conversion cycles. *Journal of Economics and Finance*, Vol. 20 No.1, pp. 33-46.
- [18]. Lantz, B. (2008). Efficiency of Working Capital Management and Corporate Profitability. *Journal Financial Practice and Education*.
- [19]. Lyroudi, K., & Larzidis, J. (2000). The cash conversion cycle and liquidity analysis of the food industry in Greece. Paper presented at the European Financial Management Association Conference, Athens.
- [20]. Mohamad, N.E.A.B., & MohdSaad, N.B. (2010). Working Capital Management: The Effect of Market Valuation and Profitability in Malaysia. *International Journal of Business and Management*, vol 5, no. 11, pp. 140-147.
- [21]. Mohammadi, M. (2009). Working capital management impact on corporate profitability in the companies listed in Tehran Stock Exchange.
- [22]. Murugesu, T. (2013). Effect of cash conversion cycle on profitability: Listed plantation companies in Sri Lanka. *Research Journal of Finance and Accounting*, 4(18), 132-137.
- [23]. Nimalathasan, B. (2010). Working capital management and its impact on profitability: A study listed manufacturing companies in Sri Lanka. *Manager Journal*, vol. 12, issue 1, 76-82.
- [24]. Nobanee, H. (2006). Working Capital Management and Firm's Profitability: An Optimal Cash Conversion Cycle. Retrieved from <http://ssrn.com/abstract=1471230>.
- [25]. Nobanee, H., Abdullatif, M., & AlHajjar, M. (2009). Cash Conversion Cycle and Firm's Performance of Japanese Firms, Emerald group of publishing limited.
- [26]. Retrieved from <http://www.cse.lk>.
- [27]. Ross, S.A., Westerfield, R.W. & Jordan, B.D. (2003). *Fundamentals of Corporate Finance*. 6th Edn. McGraw-Hill Irwin Publications, New York, ISBN: 0-07-246974-9, pp: 167.
- [28]. Samiloglu, F., & Demirgunes, K. (2008). The Effects of Working Capital Management on Firm Profitability: Evidence from Turkey. *The International Journal of Applied Economics and Finance*. 2(1), 44-50.
- [29]. Schilling, G. (1996). Working capital's role in maintaining corporate liquidity. *TMA Journal*, Vol. 16 No. 5, pp. 4-7.
- [30]. Soenen, L. (1993). Cash conversion cycle and corporate profitability. *Journal of Cash Management*, Vol. 13 No. 4, pp. 53-57.
- [31]. Teruel, P.J.G., & Solano, P.M. (2007). Effects of Working Capital Management on SME Profitability. *International Journal of Managerial Finance*, Vol. 3, No. 2, pp. 164-177.
- [32]. Wang, Y. (2002). Liquidity management, operating performance, and corporate value: evidence from Japan and Taiwan. *Journal of Multinational Financial Management*, Vol. 12 No. 2, pp. 159-169.
- [33]. Weygant, J.J., Keiso, D.E., & Kimmel, P.D. (2005) *Financial Accounting*. 9<sup>th</sup> edition.
- [34]. Wild, J.J., Subramanyam, K.R., & Halsey, R.F. (2004). *Financial Statement Analysis*. 10<sup>th</sup> edition.
- [35]. World Bank. (2016). Value added (% of GDP): Agriculture. Retrieved from [https:// data.worldbank.org/indicator](https://data.worldbank.org/indicator).
- [36]. Yung-Jang, W. (2002). Liquidity management, operating performance, and corporate value: evidence from Japan and Taiwan. *Journal of Multinational Financial Management*, 12(2002), 159-169.
- [37]. Zariyawati, M. A., Annuar, M. N., Taufiq, H., & Abdul Rahim, A. S. (2009). Working Capital Management and Corporate Performance: Case of Malaysia. *Journal of Modern Accounting and Auditing* 5 (11): 47–54.

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