

# Cash Conversion Cycle, Its Properties and Profitability: Evidence from Listed Hotel Companies in Sri Lanka

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## Abstract

The purpose of this study is to examine the relationship between liquidity and profitability of firms at hotels and travels sector in Sri Lanka. Cash conversion cycle (CCC) and its properties namely accounts receivable outstanding days (AROD), accounts payable outstanding days (APOD) and inventory outstanding days (IOD) have been used to explain liquidity management. Profitability is measured through return on asset (ROA), return on equity (ROE), gross profit margin (GPM) and net profit margin (NPM). Analyzing a sample of 26 randomly drawn companies listed in Colombo Stock Exchange (CSE) in hotels and travels sector over three years from 2011 to 2013, the study finds that CCC is positively and significantly related to the profitability. Regression models with AROD, APOD and IOD as predicting variables instead of CCC better explain nearly all profitability measures. This effect of disaggregation is more sensitive when the profitability is measured in terms of net profit margin. Hotels and travels companies can increase profitability by allowing more credit outstanding days and having lower inventory conversion period. Accounts payable outstanding days are found to be insignificantly related to profitability. The findings reveal the effects of aggregation and de-aggregation of CCC in predicting profitability of firms in hotels and travels sector. The study also informs the hoteliers and travels firms about how different components of CCC are to be managed for increased profitability. This investigation is also significant as prior literature on liquidity and profitability nexus in hotels and travels sector is extremely limited. Findings obtained here are useful for hoteliers and policy makers to ensure efficient working capital management at hotel sector in Sri Lanka. Profitability of hotel sector firms in Sri Lanka is investigated in this paper with aggregated and de-aggregated models of cash conversion cycle.

**Keywords:** Liquidity, Profitability of Hotel Companies, Sri Lanka, Cash Conversion Cycle

## 1. Introduction

The interest in working capital management has grown over the last two decades (Lyroudi and Lazaridis, 2000) because it closely connects to *inter alia* firms' performances (e.g. Nobanee *et al.*, 2011) and value (e.g. Gentry *et al.*, 1990, Deloof, 2003). Eljelly (2004) claims that the ultimate measure of the efficiency of liquidity planning and control is the effect it creates on profits and shareholders' value. Profitability is a crucial measure in determining stock return and the share prices thereby influencing firms' valuation. Though an extensive amount of literature is being added in relation to liquidity and profitability no conclusive and uniform pattern of relationship is yet established. Yazdanfar and Ohman (2014) thus claim that previous empirical results are mixed and suffer from ambiguity concerning the form of the relationship between Cash Conversion Cycle (CCC) and firms' profitability. Therefore, the nexus between liquidity and profitability has warranted special attention of researchers and practitioners and empirical evidences are being still sought from different perspectives.

According to Nobanee *et al.* (2011), the efficient working capital management of a firm comprises freeing up cash from inventory, accounts receivable, and accounts payable, and effective management of which reduce firms' dependence on expensive external financing thereby increased efficiency of working capital leading to more profitability and market value. CCC clearly captures aforesaid variables thus serves as an effective measure of efficiency in working capital management. Thus, managing the CCC has been regarded as fundamental to working capital management (Gitman, 1974; Richards and Laughlin, 1980; Jose *et al.*, 1996; Deloof, 2003). Ebben and Johnson (2011) claim that CCC is increasingly been used as the measure of working capital management. Companies having a narrower cash conversion cycle could entertain high profitability due to quick inventory turnover and or by shortening the receivable collection period backed by speedy cash collections and or by extending the deferral period for trade payables. The extended liquidity so achieved can be directed on realizing short term investment opportunities. Rationalization of short-term investment opportunities, which are often made possible via efficiently managed liquidity, is viewed as a crucial role that the working capital management plays in profitability of firms (Lazaridis and Tryfonidis, 2006; Ajilore and Falope, 2009; Banos-Caballero *et al.*, 2010).

Yazdanfar and Ohman (2014) indicate that previous studies of the impact of working capital management on firm profitability have often been industry specific, focusing on the construction, service, agriculture, mining, wholesale, oil and gas, retail, transportation, or manufacturing industries. Mansoori and Muhammad (2012) argue that industries would affect the relationship between profitability, and working capital management. Though there are number of investigations on the association of working capital management and

profitability focusing various others sectors, similar investigations are rare in hospitality sector. Sanjeev *et al.* (2012) who studied financial challenges in the Indian hospitality industry using data from senior finance professionals from a spectrum of hotels in India highlighted that the financial challenges faced by the hospitality industry included *inter alia* working capital issues. Schmidgall (1989) also report that liquidity ratios were considered more useful by corporate executives in hospitality industry. Elgonemy (2002) suggests that the financing of lodging properties requires creativity, flexibility and tenacity. As per that study, the main concern for the hotel companies is to deleverage and hold cash wherever feasible.

The Sri Lankan hotel sector has encountered challenges in raising debt capital due to that banks have been reluctant to lend to the industry concerning its dismal performance during the civil war and the industry's acute vulnerability to adverse macroeconomic conditions (Skies, 2011). Furthermore, the prevalence of high interest rates during the last few years had also discouraged hotels operators from raising debt capital (Skies, 2011). On the other hand, hospitality industry is said to be finding new and creative ways to enhance revenues, cut costs and position themselves for future growth. Thus, the Sri Lankan hotels primarily need to rely on internal cash flows for meeting the current obligation and capital expansion. This scenario necessarily requires efficient management of liquidity of hoteliers in Sri Lanka. Thus, the performance of hotel firms in Sri Lanka is assumed to be interlocked with how they manage their liquidity. The objective of this paper is therefore to examine the liquidity management of hotel companies in Sri Lanka and it further relates liquidity management with profitability, the measure of performance. This study employs cash conversion cycle (CCC) and its properties namely accounts receivable outstanding days (AROD), accounts payable outstanding days (APOD) and inventory outstanding days (IOD) to measure the efficiency of liquidity management. On the other hand, profitability is measured through return on asset (ROA), return on equity (ROE), gross profit margin (GPM) and net profit margin (NPM).

## 2. Literature Review

There is an extensive literature on the nexus between liquidity and profitability. Different findings have been reported in different jurisdictions and sectors. This section attempts to review literature on the relationship between liquidity and profitability with special concern on CCC. Shin and Soenen (1998) examine the relationship between efficiency of working capital management and profitability based on a sample comprising 58,985 US companies operating in seven industries over the 1975-1994 period and find a strong negative relationship between CCC and profitability. They also suggest that for reduction of working capital level, number of days in CCC should be cut rather than increased liabilities. Miansajid and Talaf (2009) show the negative relationship between the profitability measures and the degree of aggressiveness of working capital management policies by analyzing 126 industrial firms in the US market over a period from 1998 to 2005. This study considered firms' size, growth in sales and financial leverage as controllable variables and employed 'Tobin's q method' which compares the value of a company given by financial market with the value of a company's assets. The study suggests that firms with more aggressive working capital policy may not be able to generate more profit. Ebben and Johnson (2011) echoed these finding in their study of 879 small US manufacturing firms and 833 small US retailing firms over the 2002-2003 period.

Deloof (2003) examines the relationship between working capital management and profitability of 1,009 large non-financial companies in Belgium over the 1992-1996 periods and confirms that there exists a significant negative relationship between the gross profit and such independent variables as accounts receivable, inventory, or accounts payable variables. Yazdanfar and Ohman (2014) investigate the impact of cash conversion cycle on profitability in Swedish small and medium-sized enterprises (SMEs) over the 2008-2011 period using a seemingly unrelated regression (SUR) model to analyze cross-sectional panel data covering 13,797 SMEs operating in four industries (namely Metal, Restaurant, Retail and Wholesale sectors) and find that CCC significantly affects profitability. They also report that the firm-level control variables such as size, age, and industry affiliation also significantly affect firms' profitability. These findings imply that managers could increase firms' profitability by improving their working capital management. Some other studies from Europe countries that also found highly significant negative relationship between CCC and firm profitability include Lazaridis and Tryfonidis (2006) in Greece, Garcia-Teruel and Martinez-Solano (2007) in Spain.

Significant negative relationship between CCC and firm profitability has also been reported in many studies conducted in Asian countries. Nobanee *et al.* (2011) investigate the nexus between a firm's cash conversion cycle and its profitability employing dynamic panel data analysis for a sample of Japanese firms over the periods from 1990 to 2004. The study reveals a strong negative relation between the length of the firm's cash conversion cycle and its profitability in all samples under study except for consumer goods companies and services companies. Wang (2002) tests the relationship between liquidity management and operating performance using a sample of 1,555 Japanese firms and 379 Taiwanese firms in various industries over 1985-1996 periods and indicates that the relationship between CCC and return on assets (ROA) and CCC and return on equity (ROE) were generally negative.

Mansoori and Muhammad (2012) investigate the effect of working capital management on firm's profitability. They employed panel data analysis, pooled OLS and Fixed Effect estimation, for a sample of Singapore firms from 2004 to 2011 and find that all components of cash conversion cycle (receivable conversion period, inventory conversion period, and payable deferral period) have negative relationship with profitability. They suggest that managers can increase profitability by efficiently managing working capital thereby by shorted receivable conversion period and inventory conversion period. They also report that industries would also affect the relationship between profitability and working capital management. Napompech (2012) examines the effects of working capital management on profitability on a panel sample of 255 companies listed on the Stock Exchange of Thailand from 2007 through 2009 and reports that there is significant and a negative relationship between the gross operating profits and inventory conversion period and the receivables collection period.

Eljelly (2004), Sabri (2012), Forghani *et al.* (2013) and Almazari (2014) are some recent papers reported from Middle East countries. Eljelly (2004) examines the relationship between profitability and liquidity on a sample of joint stock companies in Saudi Arabia. They measure liquidity using current ratio and cash gap, that is, cash conversion cycle. They report significant negative relation between the firm's profitability and its liquidity level, as measured by current ratio. This relationship is found to be more evident in firms with high current ratios and longer cash conversion cycles. Further, the study adds that cash conversion cycle is a more important measure than current ratio for profitability at the industry level. The size variable is also found to be significantly related to profitability at the industry level. Sabri (2012) examines whether profitability of Jordanian industrial companies is significantly different between companies with lower and higher CCC. The study used a sample of 45 Jordanian industrial companies listed at Amman Stock Exchange (ASE) over a period from 2000 to 2007 and finds that there was a statistically significant difference among the companies that have a high CCC and those which have a low CCC. Eight indexes of performance differed between companies with high CCC and companies with low CCC. Forghani *et al.* (2013) evaluate the relationship between working capital management and company's performance using 56 companies active in Tehran stock exchange during 2003-2007 and show that there is a positive and significant relation between working capital management and return on equity, rate of return on assets and ratio of market value to book value of the companies. Almazari (2014) investigated the relationship between working capital management and firms' profitability with eight listed Saudi cement manufacturing companies and showed that Saudi cement industry current ratio is the most important liquidity measure which effected profitability.

Mathuva (2010) employed a sample of 30 listed Kenyan firms in multiple industries over the period from 1993 to 2008 and reports significant negative relationship between CCC and firms' profitability. Egbide *et al.* (2013) investigate the relationship between liquidity and profitability based on a sample of 30 manufacturing companies listed on the Nigeria Stock Exchange for the period 2006-2010 and reveal that liquidity has low degree of influence on the profitability of manufacturing companies in Nigeria. Akoto *et al.* (2013) examine the relationship between working capital management practices and profitability of listed manufacturing firms among 13 listed manufacturing firms in Ghana covering the period from 2005-2009. Using panel data methodology, the study finds a significantly negative relationship between profitability and accounts receivable days.

However, the firms' cash conversion cycle, current asset ratio, size, and current asset turnover significantly positively influence profitability. Marobhe (2014) evaluates the relationship between working capital management and profitability of manufacturing companies listed in East African stock exchange markets over a period from 2005 to 2012 finds a significant relationship between the components of working capital especially cash conversion cycle and profitability. Cash conversion cycle is negatively related to operating margin. Raheman and Nasr (2007) examined the effect of working capital management on net operating profitability using a sample of 94 Pakistani firms listed on Karachchi Stock Exchange for a period of 6 years from 1999 to 2004. They measure working capital management by average collection period, inventory turnover days, average payment period, cash conversion cycle and current ratio and find a negative relationship between the liquidity and profitability and on the other hand a positive relationship between the size of the firm and profitability. Saghir *et al.* (2011) used a sample of 60 textile companies listed at Karachi Stock Exchange for the period of 2001- 2006 and establish that there is a statistically negative and significant relationship between profitability, measured through return on asset, and the cash conversion cycle.

Attari (2012) studies 31 sampled firms out of 143 total firms in four specific manufacturing sectors namely Automobile and Parts, Cement, Chemical, and Food Producers listed at Karachi Stock Exchange covering the period of 2006-2010 and establish a significant negative correlation between the CCC and the firm size in terms of total assets, and was found a negative correlation between CCC and profitability in terms of return on total assets. Anser and Malik (2013) studies manufacturing sector organizations listed at Karachi stock exchange of Pakistan over the period from 2007 to 2011 and shows that CCC is having significantly inverse association with both return on assets and equity indicating. Ashraf (2011) studies a sample of the 16 Indian firms, listed on Bombay Stock Exchange for a period of five years starting from 2006 to 2011 and shows that

there is a strong negative relationship between CCC and profitability of the firm.

Lingesiya and Nalini (2011) , Niresh (2012), Elangkumaran and Karthika (2013), Murugesu (2013) ,Priya and Nimalathasan (2013) , Ajanthan (2013) and Jayarathne (2014) are some recently reported evidences from Sri Lanka in relation to liquidity and profitability relationship. Conclusions from those works are observed to be sector specific. Lingesiya and Nalini (2011) investigated 30 manufacturing firms in Sri Lanka over a period of 5 years from 2006 to 2010 and report that liquidity is significantly and negatively connected with profitability. Murugesu (2013) ,Priya and Nimalathasan (2013) , Ajanthan (2013) and Jayarathne (2014) who investigated firms in manufacturing sector also report similar conclusion. One the other hand, Niresh (2012) examines liquidity and profitability connections among 31 listed manufacturing firms in Sri Lanka over a period of 5 years from 2007 to 2011 and finds no significant relationship between liquidity and profitability. Similarly, Elangkumaran and Karthika (2013) inquire the liquidity, profitability and risk of listed food, beverage and tobacco companies on in Sri Lanka using six listed companies for six years period from 2006/2007 to 2011/2012 and highlights that liquidity is insignificantly related with profitability. The above review of literature suggests that the direction has differed in different sectors.

All most all the above works indicate that CCC has inverse relationship with profitability. However, several studies have also found a positive relationship between CCC and profitability. Lyrودي and Lazaridis (2000) test the relationship between the liquidity, profitability, and leverage ratios of 82 firms in the food industry listed on the Athens Stock Exchange in 1997 and report a positive relationship between CCC and ROA. Gill *et al.* (2010) who examines a sample of 88 US manufacturing companies over the period from 2005 to 2007 also found a significant positive relationship between CCC and profitability. Similar results were obtained by Sharma and Kumar (2011), who analyzed a sample of 263 non-financial firms in India over the 2000-2008 period. Moreover, Abuzayed (2012) claims based on her study of 93 non-financial firms in 11 industries in Jordan from 2000 to 2008 that profitability and CCC were significantly and positively related. The study established that more profitable firms were less motivated to manage their working capital efficiently.

### 3. Methodology

The main objective of this research is to examine the relationship between liquidity and profitability of Sri Lankan listed hotel companies. The study takes a quantitative approach which will employ only the secondary data collected through annual reports of the firms covering the time span of three (3) years period from 2010 to 2012.

The annual reports were obtained through the online database of Colombo Stock Exchange (CSE). The total number of firms listed in CSO, as at the period of this study, was 287 out of which 40 companies were under hotels and travels sector which constituted the sample frame of this investigation. This research randomly sampled 26 hotel companies which represented 65% of the population.

#### 3.1. Measuring Liquidity and Profitability

Liquidity is the ability of a firm to meet its short-term obligations when they are due using cash or cash equivalents. CCC has been found to be more important as a measure of liquidity than current ratio that affects profitability (Eljelly, 2004). This research therefore employs CCC as the proxy for liquidity of companies. Stewart (1995) defines CCC as a composite metric describing the average period of time needed to turn a dollar invested in raw materials into a dollar collected from a customer. Besley and Brigham (2005) describe a CCC as the average length of time from the payment for the purchase of raw materials to until the collection of receivables associated with the sale of the product. CCC is generally calculated by trade receivable outstanding period added with inventory conversion period and subtracted by trade payable outstanding period.

As Nobanee *et al.* (2011) points out, it is simply calculated as (Receivable collection period + Inventory conversion period- Payable deferral period) where the receivable collection period measures the average number of days from the sale of goods to collection of resulting receivables and calculated as [(accounts receivable/sales)\*365] and where the inventory conversion period represents the average length of time needed for converting raw materials into finished goods and selling these goods which is calculated as [(inventory/cost of good sold)\*365] and where the payable deferral period captures the average length of time needed to purchase goods and pay for them and it is computed as [(accounts payable/cost of goods sold)\*365]. Thus the formula of CCC and its properties are summarized in the table 01.

Table 01: Measures of Independent Variables

Measures	Formula
Account Receivable Outstanding Days ( <i>AROD</i> )	$AR/SAL * 365$
Account Payable Outstanding Days ( <i>APOD</i> )	$AP/COS * 365$
Inventory In Days ( <i>IOD</i> )	$IN/COS * 365$
Cash Conversion Cycle ( <i>CCC</i> )	$[AROD + IOD] - APOD$

Where, AR= Accounts Receivable, AP= Accounts Payable, IN= Inventory, COS= Cost of Sale, AROD = Account Receivable Outstanding Days, IOD= Inventory Outstanding Days and APOD= Account Payable Outstanding Days

Studies that sought to investigate liquidity and profitability relationship have used different profitability measures. This study tests the impact of liquidity on all such profitability measures as return on assets, return on equity, net profit margin and gross profit margin. Table 02 provides the equations used on profitability measures.

Table 02: Measures of Dependent Variables

Measures	Formula
Return on Assets ( <i>ROA</i> )	$PBT/TOA * 100$
Return on Equity ( <i>ROE</i> )	$PAT/EQT * 100$
Net Profit Margin ( <i>NPM</i> )	$NP/SAL * 100$
Gross Profit Margin ( <i>GPM</i> )	$GP/SAL * 100$

Where, PBT= Profit Before Tax, TOA= Total Assets, PAT= Profit After Tax, EQT= Shareholders' Equity, NP=Net Profit, GP= Gross Profit, SAL= Revenue from Sale during the Year.

### 3.2. Model Specification

This study basically seeks to test the relationship between liquidity proxied by cash conversion cycle (*CCC*) and the profitability. Thus, the basic model to test that relationship can be stated as below.

$$Profitability = \alpha + \beta_1 CCC + ei \quad (1)$$

As the profitability, the dependent variable, is here represented by Gross Profit Margin (*GPM*), Net Profit Margin (*NPM*), Return on Assets (*ROA*) and Return on Equity (*ROE*), the above basic model (1) would be analyzed so that each such profitability measure be a dependent variable and thus be expressed as;

$$GPM = \alpha + \beta_1 CCC + ei \quad (2)$$

$$NPM = \alpha + \beta_1 CCC + ei \quad (3)$$

$$ROA = \alpha + \beta_1 CCC + ei \quad (4)$$

$$ROE = \alpha + \beta_1 CCC + ei \quad (5)$$

Further, *CCC* is considered as the function of Accounts Receivable Outstanding Days (*AROD*), Inventory Outstanding Days (*IOD*), and Accounts Payable Outstanding Days (*APOD*) which therefore enable the model (1) to be decomposed as;

$$Profitability = \alpha + \beta_1 AROD + \beta_2 APOD + \beta_3 IOD + ei \quad (6)$$

Accordingly, the segregated model (6) can further be stated as below where each profitability measure under study is analyzed as separate dependent variables.

$$GPM = \alpha + \beta_1 AROD + \beta_2 APOD + \beta_3 IOD + ei \quad (7)$$

$$NPM = \alpha + \beta_1 AROD + \beta_2 APOD + \beta_3 IOD + ei \quad (8)$$

$$ROA = \alpha + \beta_1 AROD + \beta_2 APOD + \beta_3 IOD + ei \quad (9)$$

$$ROE = \alpha + \beta_1 AROD + \beta_2 APOD + \beta_3 IOD + ei \quad (10)$$

Where, *AROD* = Accounts Receivable Outstanding Days, *IOD*= Inventory Outstanding Days, *APOD* = Accounts Payable Outstanding Days, *CCC* = Cash Conversion Cycle, *ROA* = Return on Assets, *ROE*= Return on Equity, *NPM*= Net Profit Margin, *GPM*= Gross Profit Margin

### 4. Results and Discussion

Table 03 summarizes descriptive statistics of the variables ruling this study. Accordingly, the mean value for Accounts Receivable Outstanding Days is nearly 67 days with the standard deviation of nearly 57 days. The Sri Lankan hotel companies take average 62 days to pay its creditors. On an average, hotel companies take 38 days to convert their inventories in to sales with the standard deviation of 20 days. The mean *CCC* is 44 days with standard deviation of 59 days.

Table 03: Descriptive Statistics

	Minimum	Maximum	Mean	Std. Deviation	Variance
<i>AROD</i>	11.33	292.67	66.74	56.70	3215.40
<i>APOD</i>	1.33	161.67	62.19	36.44	1328.11
<i>IOD</i>	3.33	87.67	38.27	19.57	382.82
<i>CCC</i>	-58.00	212.33	44.61	55.08	3033.49
<i>ROA</i>	-15.70	19.06	5.43	7.74	59.85
<i>ROE</i>	-21.20	34.57	7.81	10.76	115.70
<i>GPM</i>	24.73	100.00	68.50	15.09	227.83
<i>NPM</i>	-52.47	73.93	13.65	23.66	559.66

Where, *AROD* = Account Receivable Outstanding Days, *APOD*= Account Payable Outstanding Days, *IOD*= Inventory in Days, *CCC*= Cash Conversion Cycle, *ROA*= Return on Assets, *ROE*= Return on Equity. *NPM*=Net Profit Margin, *GPM*= Gross Profit Margin.

n= 26 (Firms)

\*\*Significance at the alpha value of 0.05

\*\*\*Significance at the alpha value of 0.01

Further, firms under study have an average gross profit margin of 68% and standard deviation of 15%. The table also shows that on an average, firms have a net profit margin of 13% with standard deviation of 27%. The mean of return on assets of hotel firms here is 5% with 9% as standard deviation. The mean of return on equity is 7%.The standard deviation is 13% and minimum and maximum percentages are -43% and 60% respectively.

Table 04: Correlation Results

		<i>AROD</i>	<i>APOD</i>	<i>IOD</i>	<i>CCC</i>	<i>ROA</i>	<i>ROE</i>	<i>NPM</i>
<i>APOD</i>	r	.197	1					
	Sig.	.087						
<i>IOD</i>	r	-.234*	.386**	1				
	Sig.	.042	.001					
<i>CCC</i>	r	.801**	-.350**	-.154	1			
	Sig.	.000	.002	.184				
<i>ROA</i>	r	.235*	-.108	-.299**	.209	1		
	Sig.	.041	.351	.009	.070			
<i>ROE</i>	r	.125	-.210	-.161	.215	.502**	1	
	Sig.	.281	.068	.165	.062	.000		
<i>NPM</i>	r	.374**	-.054	-.279*	.320**	.825**	.405**	1
	Sig.	.001	.645	.015	.005	.000	.000	
<i>GPM</i>	r	.165	.190	.256*	.127	.196	.307**	.031
	Sig.	.154	.100	.026	.274	.089	.007	.794

Where, *AROD* = Account Receivable Outstanding Days, *APOD*= Account Payable Outstanding Days, *IOD*= Inventory in Days, *CCC*= Cash Conversion Cycle, *ROA*= Return on Assets, *ROE*= Return on Equity. *NPM*=Net Profit Margin, *GPM*= Gross Profit Margin.

n= 76 (Firm-year observations)

\*\*Significance at the alpha value of 0.05

\*\*\*Significance at the alpha value of 0.01

Table 4 provides that *AROD* significantly and positively correlate with such profitability measures as *ROA* (  $r=.235$ ,  $p= .041$ ) and *NPM* (  $r = .374$ ,  $p= .001$ ) while *APOD* has no statistically significant relationship with any profitability measures under study. Positive relationship between *NPM* and *AROD* implies that hotels with larger net profit margin allow the customers relatively more outstanding days for their settlements. However, *IOD* has significantly and negatively correlated with *ROA* (  $r=-.299$ ,  $p= .009$ ), *NPM* (  $r = -.279$ ,  $p= .015$ ) and positively with *GPM* (  $r = .256$ ,  $p= .026$ ), while correlation between *IOD* and *ROE* is insignificant. *CCC* as the composite index of liquidity management, recorded significant and positive relationship only with *NPM* (  $r = .320$ ,  $p= .005$ ) while no other profitability measures (*ROA*, *ROE* and *GPM*) are found to have significant relationship with *CCC*.

Regression analysis using OLS is performed for each profitability measure and CCC. CCC is used in the regression model as a composite value and as decomposed into AROD, APOD and IOD. Regression results are summarized in table 05 and table 06. The analysis finds that the composite value of CCC is significant at alpha value of 0.05 when modeled with NPM. CCC in its aggregate is however insignificant in GPM, ROA and ROE models. NPM model has higher explanatory power (Adj R<sup>2</sup>= 9%, F = 8.415) as compared to other models with composite CCC. It is however noted that explanatory power of all profitability models has improved when CCC was employed in the model as the function of AROD, APOD and IOD. That is, the values of AROD, APOD and IOD (which are variable of CCC) when employed as separate independent variables into the regression models, the models were more significant. Thus, the GPM, NPM and ROA are the significant models under decomposed CCC.

Accordingly, AROD, APOD and IOD, the measures of CCC, when employed as independent variables into the regression, explain 8.3%, 14.6% and 8.4% variance of respectively GPM, NPM and ROA. The ROE model which was insignificant when composite value of CCC was the sole independent variable, continues to be insignificant even at the decomposition of CCC in regression model. It is also however noted that NPM model with de-composite CCC is the best model with relatively higher explanatory power ( Adj R<sup>2</sup>= 14.18%, F = 5.288) as compared to all other profitability models tested. The findings reveal that explanatory power of CCC over profitability measures ( GPM, NPM and ROA) improves when CCC is disaggregated into AROD, APOD and IOD to represent the independent variables in the regression model. Further, under both aggregated and disaggregated CCC, NPM models show higher explanatory power than the other models and ROE model continues to be insignificant.

Table 05: Regression Models' Summary

Model	R	R <sup>2</sup>	Adj R <sup>2</sup>	SE	F- Stat	Sig.
$GPM = \alpha + \beta CCC + ei$	.127	.016	.003	14.79	1.216	.274
$NPM = \alpha + \beta CCC + ei$	.320	.102	.090	24.90	8.415	.005***
$ROA = \alpha + \beta CCC + ei$	.209	.044	.031	8.98	3.390	.070
$ROE = \alpha + \beta CCC + ei$	.215	.046	.034	13.18	3.601	.062
$GPM = \alpha + \beta_1 AROD + \beta_2 APOD + \beta_3 IOD + ei$	.346	.120	.083	14.18	3.266	.026**
$NPM = \alpha + \beta_1 AROD + \beta_2 APOD + \beta_3 IOD + ei$	.425	.181	.146	24.12	5.288	.002***
$ROA = \alpha + \beta_1 AROD + \beta_2 APOD + \beta_3 IOD + ei$	.348	.121	.084	8.73	3.298	.025**
$ROE = \alpha + \beta_1 AROD + \beta_2 APOD + \beta_3 IOD + ei$	.272	.074	.035	13.1	1.918	.134

Where, *AROD* = Account Receivable Outstanding Days, *APOD*= Account Payable Outstanding Days, *IOD*= Inventory in Days, *CCC*= Cash Conversion Cycle, *ROA*= Return on Assets, *ROE*= Return on Equity. *NPM*=Net Profit Margin, *GPM*= Gross Profit Margin.

n= 76 (Firm-year observations)

\*\*Significance at the alpha value of 0.05

\*\*\*Significance at the alpha value of 0.01

Table 06: Parameter Estimates of Regression Models

Model	Coefficients			
	$\alpha$	$\beta_1$	$\beta_2$	$\beta_3$
$GPM = \alpha + \beta_1 CCC + ei$	66.279 (.000)***	.031 (.274)	-	-
$NPM = \alpha + \beta_1 CCC + ei$	6.059 (.093)	.140 (.005)***	-	-
$ROA = \alpha + \beta_1 CCC + ei$	4.137 (.002)***	.032 (.070)	-	-
$ROE = \alpha + \beta_1 CCC + ei$	5.534 (.004)***	.048 (.062)	-	-
$GPM = \alpha + \beta_1 AROD + \beta_2 APOD + \beta_3 IOD + ei$	55.164 (.000)***	.056 (.060)	.011 (.815)	.212 (.022)
$NPM = \alpha + \beta_1 AROD + \beta_2 APOD + \beta_3 IOD + ei$	12.936 (.083)	.147 (.004)***	-.033 (.672)	-.225 (.150)
$ROA = \alpha + \beta_1 AROD + \beta_2 APOD + \beta_3 IOD + ei$	8.267 (.003)***	.029 (.114)	-.013 (.656)	-.102 (.073)
$ROE = \alpha + \beta_1 AROD + \beta_2 APOD + \beta_3 IOD + ei$	10.697 (.010)**	.036 (.191)	-.075 (.082)	-.022 (.794)

Where, *AROD* = Account Receivable Outstanding Days, *APOD*= Account Payable Outstanding Days, *IOD*= Inventory In Days, *CCC*= Cash conversion cycle, *ROA*= Return on assets, *ROE*= Return on equity. *NPM*=Net profit margin, *GPM*= Gross profit margin.

n= 76 (Firm-year observations)

\*\*Significance at the alpha value of 0.05

\*\*\*Significance at the alpha value of 0.01

The coefficients of the models suggest that CCC is positively and significantly related to net profit margin of hotel firms in Sri Lanka. Accordingly, the larger the CCC the larger is the net profit margin. AROD, APOD and IOD collectively determine GPM, NPM and ROA at different rate. The coefficients of decomposed models provide that AROD is individually significant and positively related to GPM (at alpha level of 0.1), NPM (at alpha level of 0.01) and to ROA (at alpha level of 0.05). This implies that hotel companies with higher profitability allow more credit outstanding days for their customers (trade receivables) and thus giving an extended credit settlement opportunity for hotels' customers is significantly influencing the profitability in hotels and travel sector. However, APOD is not individually significant in the regression model where GPM or NPM or ROA is the predicted variable. IOD is individually significant and negatively related with GPM (at alpha level of 0.05) and ROA (at alpha level of 0.1) implying that hotel companies with higher gross profit margin or return on assets has lower inventory conversion period.

## 5. Conclusion

The overall analysis indicates that CCC is positively and significantly related to the profitability of companies in hotels and travels sector in Sri Lanka. This relationship is more sensitive when the profitability is measured in terms of net profit margin. Companies in hotels and travels sector in Sri Lanka tend to entertain higher profitability by allowing more credit outstanding days on their customers (trade receivables) and having lower inventory conversion period. Accounts payable outstanding days (*APOD*) has not significantly related with profitability of companies in hotels and travels sector in Sri Lanka.

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