Innovations

# The effect of cash conversion cycle on profitability of manufacturing firms in Hawassa city, Ethiopia

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**Abstract**

*Cash conversion cycle is one of the foremostbroadlyutilized measures to survey and degree the risks and returns related to liquidity administration. The objective of this study is to investigate the effect of cash conversion cycle on profitability of manufacturing firms in Hawassa City Administration. The study was limited to the effect of cash conversion cycle on the profitability of manufacturing firms in Hawassa city administration and also limited to average collection period, average payment period, and average inventory period as measures for cash conversion cycle determinant that affect profitability of firms. The study covered the period of five (5) years (i.e. from 2017-2021). The study adopts descriptive research design with quantitative research approach. The target population of this study was all manufacturing firms in Hawassa City Administration and this study adopted a census method sinceit ensures a high degree of accuracy and complete financial data was obtained from all thelisted manufacturing firms using a census. This study employed the use of secondary source of data. The secondary data was derived from financial statements of the list manufacturing firms in Hawassa city administration. The data collected using the data collection instrument was presented using tables and graphs and analyzed using percentages, means, and standard deviation in line with the objectives of the study. The data was cleaned, coded, and entered in to Microsoft excel 2010 and Eviews 8 for analysis. The study used descriptive statistics, correlation and multiple regression analysis to establish the relationship between the independent variables of cash conversion cycle components and the profitability of firms. The study has immense significance to corporate managers, researchers and students.*

***Key words:****1.Average collection period, 2.Average inventory period, 3.Average payment period, 4.manufacturing firms, 5.profitability of firms.*

**Introduction**

Cash conversion cycle is one of the foremostbroadlyutilized measures to survey and degree the risks and returns related to liquidity administration (Raheem& Malik, 2013). From a financial viewpoint, cash change cycle measures the period it takes to convert inventory into cash from the period when stock is bought until the period the inventory is sold and the relatedcosts are recouped. Uyar (2009) argues that cash management is within the long run based on money transformation cycle hence is considered important when considering some of the components that influence the monetaryexecution of firms. This is oftensince it by and large gives the result of how proficient the firm is in managing its accounts receivables, accounts payables, and stock.

The cash conversion cycle is an important accounting mechanism for determining the efficiency of working capital management in many companies, especially manufacturing companies (Marko, 2014). This occurs because the cash cycle demonstrates a company's efficiency in converting inventory into sales, collecting cash from debtors, and paying commercial creditors. Furthermore,Murtala&Sani (2016) found that the problem of cash conversion cycle management relies on the notion of liquidity problems related to the corporate finance literature. Previous researchers have recommended that for businesses to manage cash efficiently and effectively, they need to be aware of how long it takes on average to convert goods and services into cash.

Mohamad&Tayabeh (2014) point out that the process by which changes in cash conversion cycles in recent years affect firm profitability has attracted considerable attention among researchers in various regions of the world. . The research primarily focused on the linear relationship between cash conversion cycles and various profitability metrics at selected research firms. Much of this previous research recommends adopting shorter cash conversion cycles or aggressive working capital management policies to increase the profitability of firms, especially manufacturing.

The ideal relationship between CCC and business profitability is that shortening the cash conversion cycle increases business profitability (Nobanee&AlHajjar, 2014). However, Garanina&Petrova (2015) found that shortening CCC can hurt firm profitability, shortening inventory turnover period can increase the cost of congestion, and shortening collection time can make firms lose high-credit customers. Extending payment terms may damage the company's creditworthiness.

Anser& Malik (2013) used five years of financial data to investigate the impact of CCConfirm's profitability on a listed manufacturing company in Pakistan. The results show that CCC is significantly inversely related to his ROA and ROE. A study by Takon (2013) on the impact of his CCC on his ROA for selected Nigerian listed companies using multiple regression analysis concluded that CCC was negatively associated with profitability. In the case of Nwude and Agbo (2018) on the impact of collection periods on profitability of listed insurers in Nigeria, they found that the insignificant negative impact of collection periods on profitability.

In a study published in 2016, Kumaraswamy found a substantial positive correlation between the payment period and profitability as well as a weak, negligible correlation between the collection period and business profitability. This was stated in his paper, The Impact of Working Capital on Financial Performance of Gulf Cooperation Council Firms from 2008 to 2014. According to the regression model's findings, the average payment term was the second-most important component. In their study, Madugba&Ogbonnaya (2016) examined the effects of the average payment period and the financial performance of manufacturing companies in Nigeria and discovered a weakly negative correlation with profitability.

A study by Muturi, Wachira&Lyria (2015) titled “The effect of Inventory Conversion Period on Profitability of Tea Processing Factories in Meru County” found that the inventory conversion period was statistically negative. Mwaura (2017) conducted a study to determine the impact of inventory turns on the financial performance of medium and

large retail supermarkets in Kenya. The results are in contrast to Muturi et al. (2015) showed that inventory duration had a positive and statistically significant relationship with the financial performance of medium- and large-scale supermarkets in Kenya.Lwiki, Ojera, Mugenda&Wachira (2013), in a study of the impact of inventory management practices on the financial performance of sugar producers in Kenya, found a positive correlation between inventory duration and financial performance.

Previous studies related to how average collection period, average inventory period and average payables period impact on financial performance have drawn mixed results. The study aimed at filling this gap by determining the effects of cash conversion cycle variables on the financial performance (profitability) of manufacturing firms in Hawassa City Administration. Therefore the objective of this study is to investigate the effect of cash conversion cycle on profitability of manufacturing firms in Hawassa City Administration.

## 2. Literature Review

Theliterature review was guided by previous studies that had been done by various researchers and in the same area of study. These were based on the research questions which were toestablish the effect of average collection period on profitability of manufacturingfirms in Hawassa City Adminstration? What is the effect of averageinventory period on profitability of manufacturing companies firms in Hawassa City Adminstration? What is the effect of average payables period on profitability ofmanufacturing firms in Hawassa City Adminstration?

### 2.1. Effects of Average Collection Period (ACP) on Profitability

Researchers have studied accounts receivable individually but mostly as a part of working capital management (Madishetti&Kibona, 2013). They did so from various angles and points of view. They further indicate that, accounts receivable period was found to be having a significant impact on profitability in studies from different countries. Deloof (2003) conducted a study to establish the relationship between ACP and corporate profitability with the use of a sample of 1,009 large Belgian non-financial firms. He found a significant negative relationship between gross operating income and ACP of Belgian firms. The study concluded that financial managers can increase firm profitability by reducing their ACP. Similarly, Garcia and Solano (2007) conducted a study to examine the impact of average collection period on SME profitability in Japan using panel data methodology. The study findings were similar that of Deloof (2003), where average collection period had a significant negative relationship with profitability.

Reduction of ACP enhances the profitability of firms, allowing managers to create value for shareholders by reducing the investment in current assets to an ideal level (Wang, 2002). Sharma & Kumar (2011) conducted a study to establish effects of working capital management on firm profitability in India. They collected data about a sample of 263 non-financial BSE 500 firms listed at the Bombay Stock Exchange (BSE) from 2000 to 2008 and evaluated the data using Ordinary Least Squares (OLS) multiple regression. The findings of the study significantly departed from the various previous studies conducted in different markets. The results indicated that working capital management and profitability is positively correlated in Indian companies. The study further revealed that number of days of inventory and number of days of accounts payable are negatively correlated with a firm's profitability, whereas ACP and CCC exhibit a positive relationship with corporate financial performance.

Receivables are recorded in the company's balance sheet when sale of goods or services are on credit. Manufacturing firms manage the receivables so that credit period is well known by the customer and when it's due. Abdullahi, Rahima&Abass (2016) in their study aimed to establish effects of trade receivables and inventory management on SMEs profitability in Malaysia. 66 sample of SMEs Manufacturing covering from 2006-2012 was used for the analysis. Ordinary Least Square regression was used to estimate the relationship between independent and dependent variable. The result indicated that ACP in days are negatively related to SME profitability proxies such as ROA, ROE and net operating profit. The study concluded that profitability of SME manufacturing depends upon effective of working capital components management.

A study by Charitou, Elfani& Lois (2010) on the effect of working capital management on firm's financial performance in an emerging market; found that the cash conversion cycle and all its major components; namely, days in inventory, days sales outstanding and creditors payment period - are associated with the firm's profitability. Specifically, using multivariate regression analysis, they found a significant negative relationship between average collection period and financial performance of firms listed in the Cyprus Stock Exchange. The data in the study consisted of firms listed in the Cyprus Stock Exchange for the period 1998-2007.

Iqbal&Zhuquan (2015) examined the relationship between working capital management and profitability of Pakistani firms listed on Karachi Stock Exchange for a period of six years during 2008-2013. The study used regression analysis as a means for finding out for the impact of average collection period on financial performance of Pakistani firms listed in Karachi Stock Exchange. The study found negative relationship between ACP and financial performance of listed Pakistani firms.

**2.2. Effects of Average Inventory Period (AIP) on Profitability**

Nawaz, Hamid, Khurran & Asim (2016) conducted a study to establish the impact of inventory management on the financial performance of industrial firms in Pakistan for the period 2010 to 2014. Correlation, OLS, Generalized Linear Models (GLM), and Hausman test were used evaluate the panel data. Correlation indicates that ROA had weak positive relationship with AIP. ROE has a positive weak relationship with AIP, total assets and Leverage ratio.

Total Asset has positive impact and Financial Leverage has significant negative impact on ROA. The study concluded that AIP has an insignificant positive impact on ROE.

An empirical analysis of inventory turnover on the financial performance of Chinese firms for the period 2007 to 2016 was carried out by Junaid, Shiming& Muhammad (2016). The study employed ex-post facto research design and used secondary data collected from the annual ratio report of selected firm for the analysis. The study findings revealed that the there is a negative correlation between AIP and profit margin percentage, while positive correlation exists between AIP and sales.

In a study led by Madhusudhano&Prahlada (2009) to establish the effects of AIP onfinancial performance, the Pearson Correlation coefficient was calculated to establish therelationship and a t-test administered to the significance of the relationship. The studyfindings indicated that AIP has a positive significant impact on financial

performance. The study also concluded that a low average inventory indicated how best the firm is operating economically in selling its products. The study also concluded that a high inventoryturnover ratio indicated how best the firm is operating economically in selling its products.

Furthermore, Folinas & Shen (2014) explored the links among inventory management and financial performance in the agricultural machinery industry in the United Kingdom. Specific performance measures such as Earnings before Interest and Tax to Sales Ratio, Gross Profit to Sales Ratio, and Return on Assets were examined by conducting statistical analyses to determine the correlations between AIP and financial performance in agricultural machinery industry. The analysis of AIP with financial performance measures did not indicate any links between the two variables. Furthermore, based on the results, AIP plays a role in the financial performance of organizations however to varying degrees.

According to Yasin, George &Gaoy (2013) inventory as a key item in manufacturing companies' plays a crucial role in corporate profitability. Proper management on inventory and sales policies can maintain a business unit in competition market or eliminate it. The purpose of inventory productivity is the proper use of inventory to earn profits. Hamid and Zahra (2014) conducted a study to establish the relationship between inventory turnover and gross profit margin and sales shock of companies listed in the TSE. To investigate thehypothesis test, using the regression, estimation of the research model by dependent and independent variables was done. To test the hypothesis, cumulative data of 79 companies listed in Tehran Stock Exchange for the years 2009 to 2013 was used. The results indicated that there is a significant inverse relationship between the variable of gross profit margin and AIP. The results also indicate no significant relationship between variables of sales shocks and AIP.

While manufacturing firms pursue efficient inventory management, there is limited evidence of improved financial performance related to inventory management practices. Maintaining an appropriate level of inventory is a key issue to firms' operational performance. The supposition is that better inventory management is closely related with firms' better financial performance. While excess inventory does increase costs, a shortage of inventory may result in lost sales. Seungjae, Kevin &Spurlin (2015) carried out a study to establish effects of inventory management efficiency on profitability of manufacturing firms in the United States. The results showed that a lower ratio of AIP to sales for a firm is associated with higher profit margin for the firm.

### 2.3. Effects of Average Payables Period on Profitability

Arunkumar & Ramanan (2012) analyzed the impact of working capital management on financial performance of manufacturing enterprises in India. The sample included 1,198enterprises, with a period of 10 years, from 2005 to 2014. The result showed that financial performance will be improved with quicker cash conversion cycle. Meanwhile, this study stressed that enterprises tend to extend average accounts payables period (APP) and shorten its conversion cycle for short-term asset to enhance its business performance. Similarly, Doan, Bui and Hoang (2016) studied the impact of average payable period on financial performance of SMEs in Vietnam. Using panel data for 1,209 SMEs in the period from2008 to 2015, with OLS as the method of estimation, the study findings indicated that APP affects the financial performance of SMEs in Vietnam.

Average payable period measures the average time that a firm takes before paying its creditors. A study conducted by Kroes & Manikas (2014) aimed at establishing the effectsof cash flow management on financial performance of manufacturing firms. The study wasconducted using the Generalized Estimating Equations(GEE) methodology to analyze alongitudinal sample of eight quarters of cash flow and financial performance data from1,233 manufacturing firms. The study established that APP had a significant positiverelationship with financial performance. Similarly, Kumaraswamy (2016) carried out astudy to establish the impact of the components of cash conversion cycle on the financialperformance of Gulf Corporation firms. The study identified positive relationship betweenaverage payment period with profitability and a negative relationship amid averagecollection period and firm profitability.

A study was conducted by Naeem, Nalik, Muhammad &Mehboob (2014) to establish the specific aspects of working capital management on financial performance of non-listed firms in Pakistan. Panel econometric technique namely pooled ordinary least squares was used to estimate the relationship between working capital and financial performance. Data were taken from the annual reports of non-financial firms listed on the Karachi Stock Exchange Pakistan during 2007-2010. Three performance measures namely gross profit margin return on asset and return on equity are used to estimate the impact of working capital variables such as average age of inventory, average collection period, and average payment period. In relation to APP, the study findings indicated that APP is positively related to gross profit margin and negatively related to return on asset, but the study findings found an insignificant relationship. However, average payment period is positively and significantly related to return on equity.

Nadzrah (2014) conducted a study to establish the effects of inventory holding period, accounts receivable period and accounts payable period on firms in Malaysia. Data were obtained from DataStream for two sectors in Malaysia. The sectors chosen for the study were construction and material, and food producer sector. The time period for this study covered from year 2008 to 2012. Finding showed ACP and APP affects firms' profitability. In construction and material sector, ROA has negative relationship with days' accounts receivable and days' inventory held, but positive relationship with APP. In food producer sector, ROA has positive relationship with days' accounts receivable and payable but negative relationship with days' inventory held.

## 3. Research Methodology

### 3.1. Research Design

According to McBurney&Theresa (2010) a research design is the arrangement of conditions for the collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy and procedure. This study employed a descriptivesurvey design, which is a type of research undertaken with the aim of describing characteristics of variables in a situation.The descriptive researchdescribed the effects of cash conversion cycle variables on the profitability of manufacturing firms. For the study, descriptive research was concernedwith the relationship that exists between cash conversion cycle variables, and profitabilityof manufacturing firms in Hawassa City Administration.

### 3.2. Population and Sampling Design

#### 3.2.1. Population

In this study, the study companies were all manufacturing firms in Hawassa City Administration. According to the report of Hawassa City Administration trade and industry department,there are currently 11 active manufacturing firms as shown in Table 3.1.

| S.N | Name of Manufacturing Companies | Reamrk |
|---|---|---|
| 1 | MOHA Soft Drinks Industry Hawassa Millennium Plant | |
| 2 | Omega Garment Enterprise | |
| 3 | Isabella Socks Manufacturing Plc | |
| 4 | HawassaAgri Manufacturing Plc | |
| 5 | Kakushbekele construction material manufacturing company | |
| 6 | Hawassa Textile Factory PLC | |
| 7 | Dos Detergent and Soap Factory | |
| 8 | Hawassa Flour Factory | |
| 9 | Duoley Food Processing PLC | |
| 10 | Azu-Abenezer Soap and Detergent | |
| 11 | ETAB Soap Factory | |

#### 3.2.2. Sampling Design

A census is a type of sampling technique where thetargeted study population is involved in the study. The study adopted a census method sinceit ensures a high degree of accuracy and complete financial data was obtained from all thelisted manufacturing firms using a census. Census was also used to enable the researcherto completely examine each of the eleven listed manufacturing firms and also gatherimportant financial information suitable for secondary data.

### 3.3. Data Collection Methods

The study utilized secondary data as the method of datacollection. The researcher preferred secondary data as it was readily available. Thesecondary data involved collecting financial data from the eleven listed manufacturing companies. The secondary data was obtained from the financial statement onthe involved companies. The financial statements critical in obtaining the secondary dataincluded: audited financial statement of financial position, income statements, cash flowstatements and the financial notes. The researcher prepared a data review tool to collectsecondary data. The financial data collected covered the period from 2017 to 2021.

### 3.4. Data Analysis Methods

Data analysis according toBougie&Sekaran (2014) is a process which implies editing, coding, classifying and tabulating the collected data. The dependent variable for this study was profitability of manufacturing companies in Hawassa City Administration. This was measured usingreturn on assets (ROA). ROA was calculated by dividing the net income by the averagetotal assets of the manufacturing companies.

The independent variables of the study were the specific variables of Cash ConversionCycle (CCC). According to Zainudin (2008) the CCC was determined by adding the averageinventory period with average collection period and subtracting average payables period. Similar toÖzbayrak&Akgün (2006) the average collection period was determined bydividing the accounts receivable by credit sales multiplied by 365 days. Inventory period was measured by using the average inventory period. According to Bolek,Kacprzyk&Wolski (2012), the average inventory period was calculated by dividing theaverage inventory with the cost of goods sold multiplied by 365 days. The average payable period was calculated bydividing the average accounts payable bythe total credit purchases multiplied by 365 days (Madhusudhano&Prahlada, 2009).

### 3.5. Model Specification

The study used a regression model to determine the effects of cash conversion cycle on the profitability of listed manufacturing companies in Hawassa City Administration for the period 2017 to 2021.This was performed using the linear regression equation as shown;

$$ROA= \alpha +\beta_1 ACP +\beta_2 AIP +\beta_3 APP + e$$

Where: ROA= Profitability, $\alpha$ is a constant,$\beta_1$ACP = coefficient of average collection period,$\beta_2$AIP = coefficient of average inventory period, $\beta_3$APP = coefficient of average payment period, and e = margin of error

The data collected was analyzed descriptively and inferentially using SPSS Statistics 24.Descriptive statistics which included mean and standard deviation was used to indicate the trends in financial performance of the eleven manufacturing companies in Hawassa City Administration.Inferential statistics was also used in the study to test and determine the level of relationshipbetween cash conversion cycle and financial performance. The study findings werepresented in the form of graphs and charts in the next section.

## 2. Results and Discussion

### 4.1.Descriptive Statistics

This section dealt with the results of descriptive statistics for the effect of cash conversion cycle on profitability of manufacturing firms in Hawassa City Administration. It showed the mean, standard deviation, minimum and maximum values of the variables employed in the study and it also gives a clear picture about these values, which helped in understanding the different dimensions of variables. The descriptive statistics are calculated and presented in Table 4.1

**Table 4.1 Descriptive Statistics**

| Variables | ACP | APP | AIP | ROA |
|---|---|---|---|---|
| Minimum | 9.1183 | 1.4137 | 66.7984 | 0.2594 |
| Maximum | 30.8275 | 40.4858 | 1316.3606 | 0.4421 |
| Mean | 22.6364 | 7.7834 | 222.4983 | 0.3707 |
| SD | 8.0997 | 11.9567 | 384.9267 | 0.0621 |
| N | 55 | 55 | 55 | 55 |

*Source: Excel Output from Secondary Data (2017 – 2021)*

Table 4.1 gives descriptive statistics for 5 years data of manufacturing firms in Hawassa city administration. The study has used four variables for the analysis purpose which is classified in to three independent variables and one dependent variable. The dependent variable which measures the profitability of the firms' is return on asset.

As it is presents in table 4.1, the average return on assets for the whole sample period is 37.07% in which the lowest number is 25.94% and the highest one is 44.21% and standard deviation is 6.21%. This figure means that the value of return on assets can deviate from mean to both sides by 6.21%.

Information from descriptive statistics shows that the firmscollect their bills on average 22.64 days with standard deviation of 8.10 days. The maximum and minimum average collection period is 30.83and 9.12 days respectively.

The mean time of paying to suppliers is 7.78 days and the standard deviation is 11.96 days. Maximum time taken by the firms to pay for their suppliers is 40.49 days while minimum time taken for this purpose is 1.41 days.

Lastly, it takes an average 222.50 days in order to sell inventory with standard deviation of 384.93 days. Maximum time taken by firms is 1316.36 days, while minimum time to convert inventory into sales is 66.80 days.

### 4.2.Correlation Matrix Result

Prior to regression result, it is important to check the correlation between different variables onwhich the analysis is built. Correlation matrix is used for data to see the relationshipbetween variables such as those between cash conversion cycle and firm's profitability (ROA).

**Table 4.2: Correlation Matrix**

| | ACP | APP | AIP | ROA |
|---|---|---|---|---|
| **ACP** | 1.0000 | | | |
| **APP** | -0.4540 | 1.0000 | | |
| **AIP** | -0.5971 | 0.9565 | 1.0000 | |
| **ROA** | -0.4362 | 0.1531 | -0.0273 | 1.0000 |

*Source: Excel Output from Secondary Data (2017 – 2021)*

Table: 4.2, shows that the result of the correlation analysis of profitability measures with average collection period (ACP), average payment period (APP), and average inventory period (AIP). It shows negative relationship between the Correlation Coefficient Matrix and ROA with ACP and AIPP. Furthermore, it shows the positive relationship with APP.

The researcher has started the analysis of correlation results between the average collection period (ACP) and return on assets (ROA). The result of correlation analysis shows a negative coefficient 0.44. It indicates that if the average collection period increases it will have a negative impact on the profitability and it will decrease.

Correlation results among the average payment period (APP) with return on assets (ROA) shows that there is a positive relationship between this variable. When businesses delay payment to suppliers, and using for short-term investments will increase profitability. However, in practice, delays in payment will affect the relationship between the two parties, and then the supplier will reduce the credit limit or punish a loss fee, thus reducing the ability to profit.

Average inventory period (AIP) and return on assets (ROA) relationships are negative with a coefficient of 0.03. This suggests that the shorter the rotation of the inventory, the higher the profitability.

### 4.3.Regression Results

The previous section showed the correlation of components of cash conversion cycle with firm's profitability. The weak side of the above section is that they do not allow identifying causes from consequences. To overcome this shortcoming, the researcher conducted regression analysis to determine how much of each of the variables of cash conversion cycle effect on profitability.

The study examined the study variables at 90% confidence level to establish whether they were significant or not. The results obtained are as shown by table 4.2,

**Table 4.3: Regression Output**

| Dependent Variable: ROA | | | | |
|---|---|---|---|---|
| Method: Least Squares | | | | |
| Sample: 2017 2021 | | | | |
| Included observations: 55 | | | | |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C | 7.8905 | 4.5749 | 1.7247 | 0.0830 |
| ACP | -0.0205 | 0.0154 | -1.3301 | 0.0755 |
| APP | 0.0022 | 0.0082 | 0.2793 | 0.0981 |
| AIP | -0.0273 | 0.0131 | -0.1335 | 0.0352 |
| R-squared | 0.7568 | Mean dependent variable | | 0.3707 |
| S.E. of regression | 0.0531 | S.D. dependent variable | | 0.0621 |
| Sum squared resid | 0.0085 | Akaike info criterion | | -2.8382 |
| Log likelihood | 21.1911 | Schwarz criterion | | -2.6264 |
| F-statistic | 1.5561 | Hannan-Quinn criterion | | -3.0705 |
| Prob(F-statistic) | 0.0848 | Durbin-Watson stat | | 2.7160 |

*Source: Eviews- 8 Output from Secondary Data (2017 – 2021)*

The resultant regression equation is as follows

$$ROAit = 7.8905 - 0.0205ACPit + 0.0022APPit - 0.0273AIPit + \varepsilon$$

As per the results on table 4.3, Average Collection Period (ACP) and Average Inventory Period (AIP) have a negative relationship with profitability (ROA). This indicates that an increase in inventory, creditor days and debtor days will have a negative impact on profitability.

On the other hand, Average Payment Period (APP) has found to have a positive relationship with profitability (ROA) indicating that positively affects profitability.

Additionally, table 4.3, showed Average Collection Period (ACP), Average Payment Period (APP), andAverage Inventory Period have a significant relationship with profitability since P-values of (0.0755, 0.0981, and 0.0352 respectively, which is < 0.10).

### 4.4.Interpretation of the Findings

This study examined the effect of cash conversion cycle on profitability of manufacturing firms in Hawassa city administration. Profitability is measured using the Return on assets (ROA) while cash conversion cycle is measured using Average collection period, Average payment period, and Average inventory period as the independent variables.

## 5. Summary, Conclusion and Recommendations

The chapter presents a summary of the study findings on the effects of working capital management on profitability of national alcohol and liquor factory as per the study objectives. The chapter also presents the study conclusions and recommendations and suggestions of further research.

### 5.1.Summary

The purpose of this study is to examine the effect of cash conversion cycle on profitability of manufacturing firms; with reference to Hawassa city administration. The study aims to examine the statistical significance between firm'scash conversion cycle and profitability.

The descriptive results showed that the minimum and maximum ROA for the period (2017 to 2021) is 0.2594 and 0.4421 with a mean of 0.3707 and standard deviation of 0.06. ACP and APP have maximum and minimum values of 30.83, 9.12;40.49, 1.41 and means and standard deviations of 22.64, 8.10; 7.78 and 11.96 respectively. AIP has maximum andminimum values of 1316.36, 66.80 and means and standard deviations of 222.50 and 384.93 respectively. The study used the correlation coefficient matrix to measure of the strength of a linear association between the variables. Average collection period (ACP) and Average inventory period (AIP) to have a negative correlation with return on assets (ROA) while average payment period (APP), has a positive correlation.

The correlation coefficient (R=0.7568) indicated a strong relationship between cash conversion cycle and profitability of manufacturing firms. In addition, the regression results investigated a negative significant relationship between average collection period (ACP), and Average inventory period (AIP) and profitability (ROA) of manufacturing firms. Additionally, the study revealed that there is a positive significant relationship between average payment period (APP)and profitability (ROA).

### 5.2.Conclusions

The study found that there is a significant negative relationship between average collection period (ACP) and profitability (ROA) of manufacturing firms which indicates that delay in collecting receivables reduces profitability. Thus, the study concludes that a relax debt collection policy reduced profitability of manufacturing firms in Hawassa city administration. The study also revealed significant positive relationship between average payment period (APP) and profitability (ROA) of manufacturing firms in Hawassa city administration which indicates that delaying paying creditor's increases profitability. Thus, the study concludes that payables management influence profitability. Additionally, the study found that there is a significant negative relationship between average inventory period (AIP) and profitability (ROA) of manufacturing firms in Hawassa city administration; which indicates that holding inventory for longer periods reduces profitability. Hence, the study concludes that inventory conversion period significantly affects profitability.

### 5.3.Recommendations

Based on the study findings the study recommends thatmanufacturing firms in Hawassa city administration managers should speed up the collection of receivables so that they can maximize profits. However, they should take caution to avoid losing loyal customers.

In addition, the study recommends that the firms should avoid holding excessive stocks since this would reduce profitability. The firms should hold optimum inventory levels to avoid stock outs due to insufficient stock and avoid wastage due to high levels of inventory.

The study also recommends that the firms should delay paying creditors to maximize profitability but should take caution so that they do not affect their credit status and to avoid losing trade discounts.

### 5.4.Suggestions for Further Research

This study was not able exhaust all working capital management components that have effects on profitability in manufacturing firms. Therefore, effects of prepayments, accrued expenses, government regulations and policy, economic environment, culture and external variables (inflation, interest) on profitability of firms need to be established in future studies by incorporating all manufacturing firms in Ethiopia.

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