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ADDIS ABABA UNIVERSTIY

COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMENT OF ACCOUNTING AND FINANCE

**THE EFFECT OF WORKING CAPITAL MANAGEMENT ON THE PROFITABILITY
OF TEXTILE MANUFACTURING SHARE COMPANIES IN ETHIOPIA.**

BY

BIRUKTAWIT BERIHU (ID No. GSE/9712/13)

**Thesis Submitted to Addis Ababa University Department of Accounting and Finance in
Partial Fulfillment to the Requirements for the Master of Science (MSC) Degree in
Accounting and Finance**

ADVISOR

ABEBAW KASSIE (PHD)

June 2023 GC

DECLARATION

I, Biruktawit Berihu, hereby assure that this thesis entitled "The Effect of working capital management on the profitability Textile Manufacturing Share Companies in Ethiopia" and submitted in partial fulfillment of the requirements for the Degree of Master of Science in Accounting and Finance, is my own original work that has not been presented for higher degree at any other University or institute anywhere for the award of any academic degree, diploma or certificate, complies with the rules of the university, and meets the recognized standards with respect to originality and quality.

Declared by

Biruktawit Berihu

Name

Signature

Date

Confirmed by Advisor:

Abebaw Kassie (PhD)

Name

Signature

Date

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Internal Examiner:

	(PhD)	_____	_____
Name		Signature	Date

External Examiner:

	(PhD)	_____	_____
Name		Signature	Date

Chair of Department or Graduate Program Coordinator

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ABSTRACT

The management of a company's current assets and liabilities is known as working capital management. Having an adequate amount of working capital can assist firms in maximizing their profits. The aim of this research was to examine how managing working capital affects the profitability of textile manufacturing companies in Ethiopia. The study used a quantitative research approach and analyzed secondary data collected from six manufacturing share companies' financial statements. The data was collected from a population of 66 observations covering an 11-year period (2011-2021) without applying any sampling technique. By employing SPSS and STATA statistical software, the panel data was quantitatively examined using fixed effect model estimation method. Major working capital management components, that are identified throughout this empirical study, such as account receivable period, cash conversion cycle and inventory conversion period shows, a statistically significant negative relationship with profitability, according to the findings. It suggests that, in order to optimize profit and raise the firm's worth, company management must keep the cash conversion cycle and other components of working capital at their optimal levels. On the other hand, the study has found that account payable period had shown statistically significant positive effect on the profitability of textile manufacturing companies thru return on asset. Additionally, the study has discovered that current ratio, has a considerable negative link with profitability, but sales growth has a strong positive relationship with profitability. In contrast to the previous findings, the researcher disclosed that a statistically insignificant positive association between the share companies' debt and profitability.

Keywords: working capital management, return on asset, quantitative, profitability, textile manufacturing, share companies.

List of Acronyms

APP Accounts Payable Period

ARP Accounts Receivable Period

CA Current Assets

CCC Cash Conversion Cycle

CLRM Classical Linear Regression Model

CR Current Ratio

DPO Days Payable Outstanding

DR Debt ratio

DSO Days Sales Outstanding

ERCA Ethiopian Revenue and Custom Authority

FE Fixed Effect

ICO Inventory Conversion Outstanding

ICP Inventory Conversion Period

NWCM Net Working Capital Management

OPM Operating Performance Measure

RE Random Effect

ROA Return on Assets

SPSS Statistical Package for Social Science

TIF Tolerance Inflation Factor

VIF Variance Inflation Factor

WCM Working Capital management

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CHAPTER ONE: INTRODUCTION

The first chapter of this thesis introduces the area of the study providing a background for the paper. This chapter is organized under different section in which the Introduction of the study statement of the problem, objective of the study, delimitation of the study and finally structure of the paper was presented.

1.1 Background of the study

The level of development of a country's manufacturing sector has a substantial impact on economic growth and development (The World Bank, 2012). Manufacturing and industry will play a bigger role in the economy's overall growth. An increase in manufacturing output stimulates production in the manufacturing sector as well as other sectors via direct and indirect production links, thus propelling the entire economy forward.

Any business organization's primary goal is to maximize profit. However, safeguarding the firm's liquidity is also a critical goal. A firm that did not make profit cannot survive in business for a long time and firm with insufficient liquidity will be insolvent in a long run, which will disrupt the operational activities of the firm. In other words, effective and efficient management of profitability and liquidity are very important for firms 'survival.

Working capital management (WCM) is a managerial accounting method that focuses on keeping a company's current assets and liabilities at optimal levels. It is responsible for the management of a company's existing assets and obligations (Harris, 2005). WCM is a critical component of corporate finance since it has a direct impact on a company's liquidity and profitability (Knauer & Wöhrmann, 2013).

Working capital management is concerned with managing and regulating current assets and liabilities in order to prevent the danger of being unable to satisfy short-term financial obligations, as well as avoiding excessive investment in current assets (Eljelly, 2004).

Working capital management deals with current assets and current obligations, and has a direct impact on a company's liquidity and profitability. Current assets are assets that, in the normal

Course of business, return to cash in a short period, usually within a year, as well as temporary investments that can be easily converted in to cash as needed. In addition, current liabilities are obligations that, in the regular course of business, return to the form of cash within a short period, usually within a year, and that are readily payable in cash when needed (Joshi,1995).

Working capital refers to the investment in current assets like inventory, accounts receivable, short-term security, and cash that are needed to run a business on a day-to-day basis. Fixed assets according to Barine (2012), are the organization's primary tools for producing goods and services that match customers' needs. Acquiring the semi movable assets is not a goal in and of itself. Input materials are required to run through these fixed assets in order to produce products and services that meet client needs. Finance is also necessary to ensure that these input materials are available when they are required. These input materials, as well as the funding required to acquire them on a regular basis for firm usage, ensure that fixed costs are met (Barine, 2012: p 216).

The management of working capital has a significant effect on firm's profitability and liquidity, irrespective of the nature and the size of the business. The management of working capital involves the determination of optimum level of working capital to keep, monitoring and controlling the level of individual component of working capital to ensure that the optimum level is not exceeded, and provision of funds to finance current assets (Nwude, 2004:628) For many manufacturing firms, the current asset account is over half of their total asset (Raheman & Nasr, 2012).

Knowing and understanding the consequences of working capital management and their impact on a company's profitability is consequently crucial. Indeed, numerous studies have carried out in various countries to demonstrate the effects of working capital management components on firm profitability. Therefore, it is essential to comprehend how working capital management affects profitability. The primary objective of the study is to investigate how working capital management affects the profitability of Ethiopian textile manufacturing share businesses.

1.2 Statement of the problem

Ethiopia's working capital management practices are still in their infancy in relation to the rest of the world. The adoption of comprehensive working capital management by Ethiopia's industrial sector would directly affect the organization's ability to maximize profit and value (Ephrem,

2011). Short-term finance, particularly working capital management, was given far less attention than long-term investment, according to Pass and Pike (1987), despite the fact that it played a critical role in the firm's growth and profitability. Working capital management planning and control failure is one of the leading reasons of business failure, and it is a neglected topic that has received far too little research handwriting. Both of the key objectives must be met. Making a profit does not always imply that the company's working capital is well managed. Working capital management demands a well-thought –out policy and continuous monitoring.

Companies frequently seek to retain liquidity and operational efficiency by reducing their working capital investment, but this can lead to insolvency. The relative value of a firm's assets over its obligations is known as solvency. Insolvency may lead to the company's eventual bankruptcy. Ethiopia is a cotton-producing country that exports apportion of its output to other countries. However, the industry is growing at a snail's pace. There have been research on working capital management and firm profitability in Ethiopia.

Tewodros (2010) looked at 11 private limited manufacturing companies to see how it affected profitability. As a metric of profitability, he used ROA, OPM, and ROE. Longer accounts receivable and inventory holding times are linked to decreased profitability, according to the findings. There is also a negative association between accounts payable period and profitability indicators; however, this relationship is not statistically significant except for operating profit margin. The findings also suggest that the cash conversion cycle and profitability metrics of the tested enterprises have a substantial negative association. Tiringo (2013), on the other hand, looked at the influence of WCM on the profitability of micro and small businesses in Ethiopia, specifically in the Bahir Dar municipal government. The findings revealed that there is a strong positive link between the two variables.

The textile manufacturing sector in Ethiopia has witnessed significant growth in recent years. However, the profitability of share companies operating in this industry is influenced by various factors, including their ability to effectively manage working capital. Working capital management plays a crucial role in ensuring the liquidity and smooth functioning of textile manufacturing companies, allowing them to meet short-term obligations and support their day-to-day operations. Despite its importance, the specific impact of working capital management on the profitability of textile manufacturing share companies in Ethiopia has not been extensively

studied. Therefore, there is a gap in understanding the relationship between working capital management and profitability in this specific context. This knowledge gap hinders the development and implementation of effective managerial strategies aimed at enhancing profitability. Hence, this study aims to investigate the effect of working capital management on the profitability of textile manufacturing share companies in Ethiopia. By analyzing financial indicators, cash conversion cycles, and various components of working capital management, this research seeks to provide valuable insights into the key factors influencing profitability in the Ethiopian textile manufacturing industry. The findings of this study will contribute to the existing body of knowledge and assist managers, investors, and other stakeholders in making informed decisions related to working capital management and overall business performance in this sector.

1.3 Objectives of the Study

1.3.1 General Objective

The general objective of this study is to examine the effect of working capital management on profitability of textile manufacturing Share companies in Ethiopia.

1.3.2 Specific Objectives

The specific objectives of this study are-

1. To analyze the effect of days sales outstanding or average collection period on the profitability of textile manufacturing share companies.
2. To investigate the effect of days payable outstanding or average payment period on the profitability of textile manufacturing share companies
3. To determine the effect of inventory conversion period on the profitability of textile manufacturing share companies
4. To examine the effect of cash conversion cycle (CCC) on the profitability of textile manufacturing share companies

1.4 Research Hypothesis

The following hypothesis investigated in accordance with the broad purpose statement. The study's

hypotheses based on assumptions about working capital management and profitability that have been developed through time by the manufacturing industry. Researchers and empirical investigations in the past have studied the profitability of a manufacturing industry. As a result, the following hypotheses are tested in the current study on the basis of the objectives indicated earlier on:

Days Sales Outstanding

Days sales outstanding (DSO) is a key metric used by companies to measure how long it takes for them to convert their accounts receivable into cash. In the context of textile manufacturing share companies, DSO can have a significant impact on profitability. If DSO is too high, it can negatively affect a company's cash flow and working capital, leading to lower profitability. This is because the longer it takes a company to receive payment for its goods, the longer it has to wait to reinvest that money in its operations or to pay its own bills.

Lazaridis and Tryfonidis (2006) find the negative relationship between number of day's accounts receivables and profitability measured by gross operating profit. This negative result demonstrated that companies can increase their profitability by decreasing credit term giving to their customers. Deloof (2003) find the significant negative relation between the average number of days accounts receivable and gross operating income as a measure of profitability. Raheman and Nasr (2007) the results report that profitability has significant negative relation with accounts receivable as a measure of liquidity. Furthermore, there is a negative relationship between average collection period and profitability found by Alipour (2011). Also Şamiloglu and Demirgüneş (2008) findings of the study show that accounts receivables period affect firm profitability negatively. Because of previous empirical findings, The First Hypothesis is presented as follows:

H₁: Days sales outstanding negatively affect profitability of textile manufacturing companies.

Days Payable Outstanding

Days Payable Outstanding (DPO) is a financial metric that reflects the average time period a company takes to pay its suppliers of inputs for its purchases. In the case of textile manufacturing share companies, the DPO can have a significant impact on their profitability. A longer DPO means that the company is taking more time to pay its suppliers, which can lead to an increase in cash flow for the company. This increased cash flow can be used for other investments or to improve the company's financial position. On the other hand, a longer DPO may also mean that

the company is stretching its payments to suppliers, which could lead to strained relationships and potential supply chain disruptions. In addition, if suppliers begin to demand faster payments or impose penalties for late payments, the company's profitability could be impacted.

Lazaridis and Tryfonidis (2006) explain significant positive relationship between gross operating profit as a measure of profitability and number of day's accounts payable. The researcher explain this positive significant result as a company delays its payment which affects the higher level of working capital and use to increase its profitability which less-profit companies would make use of this to delay their payment.

Hypothesis 2 can be defined as follows:

H2: Days Payable Outstanding negatively/positively affect the profitability of textile manufacturing companies.

Inventory Conversion Period

Inventory conversion period (ICP) is a measure that highlights the number of days it takes a company to convert its inventory into sales. A longer inventory conversion period could increase holding costs and opportunity costs, reduce sales volume, and increase price erosion, all of which could negatively affect the profitability of textile manufacturing share companies.

Several empirical works have explored the relationship between ICP and the profitability of manufacturing companies in Ethiopia. For instance, a study by Tadesse and Kuma (2018) investigated the effect of ICP on the profitability of manufacturing firms listed on the Ethiopian Stock Exchange. Their findings suggest that the ICP has a significant negative effect on the profitability of manufacturing companies in Ethiopia. Another empirical work by Anteneh and Adane (2021) found that a shorter ICP significantly improves the profitability of manufacturing firms in Ethiopia. The study recommended that manufacturing firms should focus on managing their inventories efficiently to reduce their ICP and improve their profitability.

Accordingly, the hypothesis can be specified as follows

H3: inventory conversion period negatively affect the profitability of textile manufacturing companies.

Cash Conversion Cycle

The relationship between cash conversion duration and profitability is unclear, as two schools of thought have emerged: the traditional notion that a short cash conversion period supports profitability, and the opposing opinion that a longer cash conversion period benefits profitability. Profitability can be improved over time (Shin and Soenen, 1998). Lazaridis, Athens, and Tryfondis (2005) examines a sample of 131 publicly traded companies from 2001 to 2004 and discovers a substantial correlation.

Profitability and CCC have negative association. As a result, they encourage financial managers to can make money for their businesses by managing the cash conversion cycle (CCC) appropriately. Maintain the optimal performance of each CCC component

The researcher expects profitable companies to have excellent working capital management, which results in a quicker cash conversion cycle, based on previous empirical findings. The third hypothesis is as follows:

H4: cash conversion cycle negatively affect the profitability of textile manufacturing companies.

1.5 Significance of the Study

The study allows the researcher to get fresh insights into the subject under investigation and provides a comprehensive image of the research discipline. The goal of this research is to see how working capital management affects the profitability of textile manufacturing businesses. The findings of this study will add to current understanding about the impact of working capital management on textile-manufacturing share companies 'profitability.

The existence of some objectives or goals is necessary for effective financial management. This is because determining whether or not a financial decision is efficient must be done in light of proper working capital management while also ensuring good shareholder returns. Manufacturers' policy makers would significantly benefit from this research. Policymakers could plan their working capital policies based on a better knowledge of the relationship between working capital management and profitability. Academicians and future researchers who want to look in to the performance of businesses in terms of working capital management and profitability will find the study to be a valuable resource.

1.6 Delimitations and Limitations of the Study

The study is delimited to the impacts of working capital management on the profitability of textile

manufacturing share companies in Ethiopia. The total population is considered in the study (i.e. six textile manufacturing share companies) that have eleven years of data.

In this study ROA used as a main financial performance measure. the reason for using ROA as a measurement of textile manufacturing companies performance was because ROA reflects the ability of the company to generate profit from its asset and also indicates how efficiently the company's asset are managed to generate profit. This study only looked at independent variables like DIO, DPO, DSO, and CCC. Other independent control variables are DR, CR and SG.

As a limitation of the study, establishing a direct causal relationship between working capital management and profitability can be challenging there may unmeasured factors or external variables that influence probability making it difficult to attribute changes in profitability solely to working capital management.

Generalizing the findings from the study to other industries or regions outside of textile manufacturing in Ethiopia might not be appropriate the specific characteristics and dynamics of textile manufacturing sector in Ethiopia cold limit the applicability of the studies result to other context.

1.7 Organization of the study

The paper is divided into five chapters. Chapter one covers an over view of the entire study, including the statement of the problem, objectives, relevance, delimitation and limitation, and how the study is organized. The second chapter, literature review, includes a comprehensive assessment of the literature on working capital and the management of its many components. The methodology for the study is presented in Chapter three, which includes a full review of the research design, data source and collection techniques, and data analysis procedures. It also give a rundown of the essential variables used in the model. The fourth chapter is devoted to data presentation, analysis, and interpretation. Chapter Five concludes and offer recommendations for the study.

CHAPTER TWO: LIERATURE REVIEW

This chapter looked at the research on working capital management and its impact on profitability. The chapter is divided in to three sections as a result. The first portion examines the theoretical element, or theoretical review, which includes information gathered from various sources, followed by an empirical assessment of prior works in this area, and finally, a literature review and hypothesis generation section.

2.1 Theoretical Review

2.1.1 An Overview of working capital

According to Firer, Jordan, Ross, and Westerfield (2008), working capital refers to the capital invested in current assets required to operate a business. It is also known as circulating or short-term capital and is used for investing in current assets. Von Horne and John H (2000) describe it as the current assets that are not provided by short-term debtors.

The concept of working capital can be segregated or comprehended by employing two classifications, namely gross working capital and net working capital Khan and Jain (2005).

A. Gross working capital, the term "gross working capital" pertains to the amount of investment a company has in its current assets which can be easily converted into cash within one year. Examples of current assets include trade debtors, prepayments, and cash balances. According to Khan and Jain (2005), this working capital is the money invested in current assets that are utilized in a business, and it is important to optimize the investment in current assets as well as the financing of these assets.

B. The net working capital is the gap between a company's current assets and its current liabilities. Current assets refer to assets that can be turned into cash within a year, while current liabilities are the claims expected for payment within an accounting year. Examples of current liabilities include bills payable, accruals, trade creditors, short-term loans, and ongoing expenses. A positive working capital implies that the company can fulfill its short-term commitments, but a negative working capital suggests that it cannot meet its long-term obligations. This information is according to Brigham and Houston's (2003) study.

Working capital is the amount of capital which is required to run the day-to-day operations of a

business. It can be classified into two categories: permanent working capital and temporary working capital.

- A. Permanent Working Capital, refers to the minimum amount of investment in all working capital that is necessary at all times to carry out a minimum level of business activity (Brigham and Houston,2003).In other words, it indicates the ongoing current assets required throughout the year.
- B. Temporary Working Capital (also known as circulating or transitory working capital) is a type of working capital that is used for a short period of time. This is the amount of money needed to deal with the ups and downs in business activity. Fabozzi and Peterson (2003) described seasonal changes in a firm's activity as a rise in working capital.

2.1.2 Components of Working Capital Management

The proper handling of current assets and liabilities is crucial in financial management, and this area is commonly referred to as working capital management. Its primary objective is to effectively manage these elements while maintaining an acceptable level of both. Since a significant portion of working capital is tied up in assets like cash, receivables, and inventory, it is essential to manage these components with great care (Paramasivan & Subramanian, 2009:165). Working capital is essentially made up of different components of current assets and current liabilities. However, the four essential components of working capital include cash, receivables, payables, and inventory.

2.1.2.1 Cash Management

Block and Hirt (1992) suggest that in today's complex global economy, financial managers must prioritize cash management. Cash management is a highly liquid current asset and a critical component of effective working capital management. Boisjoly and Izzo (2009) propose an incorporative approach to cash management that aligns with the business cycle, as changes to cash management directly affect working capital performance. In practice, a company's capabilities should include developing a cash management strategy that integrates cash inflows and outflows, utilizing cash budgeting and forecasting techniques.

2.1.2.2 Receivables Management

Receivables are accounts that indicate the amount owed to a company from the sale of goods or

services during regular business activities. They represent a substantial portion of a company's overall assets, accounting for approximately 25.97% of an average firm's assets, as cited by Martin et al. (1991). Various factors influence the amount of receivables, including sales volume, credit policies, and trade credit. The primary factor in determining the size of accounts receivable is the level of sales. A business with extensive sales will typically have a higher level of receivables than a business with lower sales, even within the same industry. Sales levels can also be used to predict changes in accounts receivable.

2.1.2.4 Payables Management

Companies commonly engage in credit-based transactions and record debts as account payables in their day-to-day business activities, as noted by Block, Hirk, and Short (2000). Small businesses, due to their limited access to capital from other sources, rely heavily on trade credits in particular. Gitman (2009) and Western and Copeland (1989) identified accounts payable as a critical source of unsecured short-term financing, especially for small businesses. Additionally, Belt (1979) observed that account payables are more flexible since the average payment can be postponed through administrative decisions.

2.1.2.5 Inventory Management

Inventory management, according to Horngren, Datar, and Foster (2013), involves the strategic coordination of the inflows and outflow of inventory within a company. Inventories make up a significant portion of a company's working capital; for instance, data suggests that inventory can constitute anywhere from 30% to 80% of a company's total current assets. The inventory management process spans from the acquisition of raw materials to the production of the final product. Therefore, managing inventory investments properly is crucial.

2.1.3 Significance of Working Capital Management

According to Smith (1980), the management of working capital is essential because it has an impact on a company's risk, profitability, and value. Making investments in working capital requires finding a balance between risk and profitability because decisions that boost profitability usually also increase risk, and vice versa. For manufacturing companies where current assets make up over 50% of their total assets, the effectiveness of working capital management is crucial. Efficient management of working capital also improves a company's cash flow, leading to greater potential for growth and higher returns for shareholders, as noted by Blinder and Mancini (1991).

According to Weston and Brigham (1977), working capital refers to the resources owned by a company that are utilized to carry out daily operations. Since cash is required to pay bills, managing working capital becomes crucial. As a result, it is essential for a company to monitor and control its working capital to ensure that it has sufficient funds to pay its expenses and operate effectively. In simpler terms, working capital management is important for a company to keep its day-to-day operations running smoothly.

- (A) **Solvency:** Solvency refers to the financial stability of a company, where it has adequate working capital to operate its business seamlessly. In such a situation, the company can easily pay off its short-term liabilities within a short period, which ultimately adds value to its overall financial standing. Essentially, solvency ensures that the company can continue its operations without defaulting on its financial obligations. Having enough solvency is crucial for long-term success in the competitive business world.
- (B) **Ability to deal with adversity:** The capacity to handle difficult situations is crucial for any business as it is inevitable to face challenges like economic downturns, market volatility, and conflicts. To handle such adverse circumstances, having enough working capital becomes vital. Working capital refers to a company's current assets that can be utilized to cover operational expenses, debts, and short-term obligations such as salaries, rent, and bills. Adequate working capital can enable a business to survive during difficult times and overcome obstacles that may arise. Therefore, businesses should prioritize maintaining a sufficient amount of working capital to ensure their ability to deal with adversity.
- (C) **Consistent return:** Effective management of working capital allows a company to distribute dividends swiftly and regularly to its shareholders. This is mainly due to the fact that with robust working capital, the company does not have to utilize profits in reinvestment. Consequently, the investors have faith in the company and are more likely to invest in it. In other words, working capital management is crucial in maintaining the trust of shareholders and keeping them invested in the company.
- (D) **Efficient business operation:** When a company has sufficient operating capital, it can operate its business operations smoothly without any financial constraints. This means that the company can easily fulfill its financial obligations, such as paying salaries and meeting

daily expenses, without delay. In such a favorable budget situation, employees' morale is boosted since they do not have to wait for their salaries and other payments to be made. This can result in increased productivity and efficiency among the workforce. Overall, having sufficient working capital is crucial for a business to operate effectively and maintain a positive work environment.

2.1.4 Policies of Working Capital

The concept of working capital policy refers to a set of guidelines that govern the management of a company's current assets and liabilities. The purpose of this policy is to reduce the risk of default and ensure that the business runs smoothly. The impact of the working capital policy on the performance of a company has been studied by various researchers. Brian (2009) notes that effective management of current assets and liabilities is crucial to minimizing the risk of default.

Vishnani and Shah (2007) explored the tradeoff between liquidity and profitability, highlighting two key reasons for this phenomenon. Firstly, if a company desires to generate more significant profits, it may be willing to take on greater risks and thus, lower its working capital. On the other hand, if a company wishes to boost its liquidity, it would raise its working capital which could negatively impact profitability. Thus, firms need to strike a balance between having enough cash to meet their obligations while maximizing their returns. This highlights the importance of having a well-structured working capital policy that takes into account both financial risks and returns.

(A) Aggressive policy: When a company takes an aggressive approach towards working capital management, it means they are willing to operate with lower levels of inventory, trade receivables, and cash in relation to their sales or activity, as pointed out by Cheatham (1989). This strategy can help improve profitability because less cash is tied up in current assets. However, this approach also increases risk because the gap between short-term or liquid assets and short-term liabilities becomes significantly narrow, according to Gallagher and Joseph (2000). In other words, while it may be beneficial for a company to optimize their working capital, they must also ensure that they have enough cash and liquid assets to cover their short-term financial obligations.

(B) Conservative policy: To have a conservative and adaptable working capital policy for a specific sales level, it's recommended to have a higher cash balance. Investing in short-term securities and allowing more generous credit terms to clients is also suggested. For holding

higher levels of inventory, long-term debt and equity can be used. However, using long-term debt carries a high-interest rate, which increases financing costs. Ultimately, this policy can lower the possibility of encountering financial or inventory problems, but it may affect profitability. The aforementioned statement was provided by Cheatham in 1989.

(C) A moderate policy: A moderate approach is seen as the balance between highly aggressive or overly cautious strategies. This approach is being adopted by many companies as it allows them to balance the risk and the reward. It is a combination of defensive and aggressive working capital management, where temporary current assets, which are short-term assets, are funded through short-term loans, while fixed assets and permanent current assets are financed through long-term debts. This policy ensures that a company has enough cash flow to finance its short-term needs, while also securing its long-term financial stability.

2.1.5 Working Capital Management and Profitability

Profitability refers to the rate of return on investment, which can be affected by an unjustified overinvestment in working capital. The primary goal of working capital management is to maintain control over a company's current financial resources, ensuring a balance between profitability and associated risk. Companies that are skilled at managing working capital tend to be more profitable, as noted by Siddiquee and Khan (2008), and experience fewer challenges in securing funds from internal and external sources. It is important to thoroughly examine short-term assets and liabilities, as they are essential components of a company's total assets. Working capital management plays a critical role in a company's profitability, risk, and overall value, bolstering the need for further research in this area (Smith, 1980).

2.2 Empirical Literature

Numerous empirical studies have been undertaken to assess the impact of working capital management on profitability in various nations around the world, with variable results leading to differing conclusions.

2.2.1 Review of previous empirical studies

A study by Chowdhury et al (2018) examined the impact of working capital management on the profitability of textile firms in Bangladesh. The study found that an optimal level of working capital

positively affects the profitability of these firms. Another study by Akhtar, Ali, and Ali (2020) analyzed the relationship between working capital management and profitability of textile firms in Pakistan. The findings of this study suggested that efficient working capital management practices have a significant positive impact on the profitability of textile firms.

In a study conducted by Raza et al. (2016), the authors investigated the effect of working capital management on the financial performance of textile companies listed in Pakistan's stock exchange. The results suggested that working capital management positively impacts the profitability of these firms.

Similarly, a study by Kashif and Ahmad (2015) analyzed the impact of working capital management practices on the profitability of textile firms in Pakistan. The study found that efficient management of accounts receivables, inventory, and accounts payable has a positive impact on the profitability of these firms.

Shin and Soenan (1998) found a strong negative relationship between cash conversion cycle and profitability in the United States. They came to the conclusion that the fewer days in the cash conversion cycle capital, the better the profitability. Eljelly(2004)established a negative association between the firm's profitability and conversion cycle in Saudi Arabia using correlation and regression analysis.

In 2003, Deloof carried out research on the Belgian businesses to examine how their profitability relates to working capital management. Through his correlation and regression analysis, he found a significant unfavorable correlation between the gross operating income and the duration of accounts receivable, inventories, and accounts payable periods. Hence, the efficiency of a company's working capital management has a significant impact on its overall profitability. Also, less profitable companies tend to delay paying their creditors.

A research paper by Nobanee and Haddad (2014) investigated into the effect of managing working capital on the profitability of non-financial companies listed on the Tokyo stock exchange between 1990 and 2004. The study focused on four metrics: receivables collection period (RCP), inventory conversion period (ICP), payable deferral period (PDP), and cash conversion cycle (CCC), which is derived from the former three. The researchers' goal was to analyze the influence of these metrics on return on investment (ROI), which was their dependent variable. Their findings revealed that

reducing CCC, RCP, and ICP leads to higher profitability.

In a study resembling it, Zariyawati, Annuar, and Raman (2009) examined how 1628 Malaysian businesses were affected by working capital management on their profitability. Regression analysis findings indicated that cash conversion cycle and account payable management were beneficial for the business's profitability, while account receivable management and inventory management had a detrimental effect.

2.2.2 Review of previous empirical studies in Africa

The study by Ebenezer and Asiedu, (2013), investigated the effect of working capital management on the profitability of companies in Ghana Stock Exchange market. Secondary data from the Ghana Stock Exchange on manufacturing companies within the Accra metropolis was used to examine whether working capital management influence the profitability of manufacturing companies in the country. The studies result shows that, the major component of working capital management such as inventory conversion periods, account payable and cash conversion cycle have influence on the profitability of manufacturing companies. The study recommended that, manufacturing companies should adopt efficient and effective ways of efficiently managing these components of working capital management. The conclusion indicates that managers of manufacturing companies must adopt efficient and effective working capital management practices to ensure the survival of the business.

In 2013, Kirawa conducted a study in Kenya between 2003 and 2012 to evaluate how working capital management affected the profitability of firms. The study employed a balanced panel data of five manufacturing and construction companies listed on the Nairobi Securities Exchange (NSE). To determine the relationship between working capital management and profitability, Pearson's correlation and ordinary least squares regression models were used. The findings indicated a negative correlation between profitability and the number of days accounts receivable and cash conversion cycle, while a positive association was found between profitability and the number of days of inventory and days payable. Additionally, other factors such as financial leverage, sales growth, current ratio, and firm size had significant impacts on profitability. The study concluded that reducing the number of days of accounts receivable could increase shareholder value. Additionally, increasing inventories to a reasonable level and being cautious about the time taken to pay creditors while maintaining good relations could also benefit shareholders. Finally, firms could

gain a competitive edge by minimizing their cash conversion cycle, thus enhancing profitability through the efficient use of organizational resources.

The purpose of the study made by Akoto, Vitor, and Angmor (2013) was to examine the relationship between working capital management practices and profitability of listed manufacturing firms in Ghana. The study used secondary data collected from all the 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. The study suggests that managers can create value for their shareholders by creating incentives to reduce their accounts receivable to 30 days. It is further recommended that, enactments of local laws that protect indigenous firms and restrict the activities of importers are eminent to promote increase demand for locally manufactured goods both in the short and long runs in Ghana.

In 2013, Akinlo conducted a study on 66 non-financial Nigerian firms spanning from 1997 to 2007, analyzing the correlation between working capital management and profitability. Working capital management was evaluated using the number of days for accounts receivable, accounts payable, and inventory policy, while the cash conversion cycle (CCC) served as a comprehensive measure of this management. The findings illustrated that extending the time needed for payment of accounts receivable, holding inventory longer, and paying accounts payable later all contributed to decreased profitability. On the other hand, reducing the CCC resulted in improved profitability for the firms.

Zawaira and Mutenheri (2014) conducted a study to investigate how various components of working capital management affected the profitability of firms listed on the Zimbabwe Stock Exchange during the dollarization era. They used a random effects model and financial data from non-financial companies listed on the Zimbabwe Stock Exchange between 2010-2012. The study found that receivables collection period, inventory conversion period, cash conversion cycle, quick ratio, current asset to total asset ratio, current liabilities to total asset ratio, debt ratio, and age of company were not significantly associated with profitability. However, there was a strong negative relationship between payables deferral period and profitability. The study concluded that Zimbabwean firms could improve their profits by shortening the time it takes to pay their suppliers. Additionally, the study indicated that liquidity and firm size could enhance profitability. Therefore,

firms in Zimbabwe should pay close attention to their current asset investments.

Ponsian, Chrispina, Tago, and Mkiibi (2014) conducted a study to determine the correlation between a company's working capital management and its profitability. To achieve this objective, the researchers used a quantitative approach to test several research hypotheses. They examined three manufacturing companies listed on the Dares Salaam Stock Exchange (DSE) for ten years (2002-2012), totaling 30 observations. The data was analyzed quantitatively using Pearson's correlation and regression analysis (ordinary least square). The study's key findings include a positive relationship between cash conversion cycle and profitability, suggesting that managers increase the cash conversion cycle to a reasonable level to create positive value for shareholders. On the other hand, a negative relationship between liquidity and profitability was found. Additionally, there was a highly significant negative relationship between average collection period and profitability, while there was a positive correlation between average payment period and profitability. Lastly, low inventory levels were found to be linked to higher profitability, as maintaining sufficiently low inventory levels reduces the cost of storing inventory.

2.2.3 Review of previous empirical studies in Ethiopia

In 2010, Tewodros conducted a study on 11 private manufacturing enterprises in Ethiopia, from 2005 to 2009, to examine the influence of inventory turnover management on profitability. The collected data revealed that on average, the enterprises took 314 days to sell their inventories. The research findings showed that lengthier inventory turnover periods were associated with reduced profitability. This result was consistent with the study by Azam and Haider in 2011.

Mengesha (2014) conducted a study in Addis Ababa to examine how working capital management impacts company performance. The study analyzed a sample of 11 metal manufacturing private limited companies in the city from 2008 to 2012 using correlation and regression analysis. The study found that longer periods of receivables and inventory holding were associated with lower profitability, and there was a strong negative correlation between profitability measures and the cash conversion cycle. Return on investment did not have a significant correlation with cash conversion cycle, account receivable period, inventory conversion period, or account payable period. However, the study revealed a very strong opposite relationship between return on asset and account receivable period, inventory conversion period, and account payable period.

The study by Abera (2007) examined the impact of working capital investment and financing policies on profitability in 11 manufacturing businesses in the Tigray region of Ethiopia from 2005 to 2009. The study used financial statements and profitability metrics such as operating profit margin, return on equity, and return on assets. The study found that longer accounts receivable and inventory holding periods were associated with lower profitability, while the ratio of current liabilities to total assets showed a strong positive association with profitability. The study also found that there is a trade-off between liquidity and profitability, and managers must improve working capital investments and financing strategies while considering this trade-off.

Mohammed (2011) conducted a study on 11 manufacturing private limited businesses in Addis Ababa, Ethiopia, using audited financial statements from 2005 to 2009. The study aimed to evaluate the impact of working capital investment and financing regulations on firms' profitability. The study used various factors, including operating profit margin, return on equity, return on assets, accounts receivable period, inventory holding term, accounts payable period, cash conversion cycle, ratio of current assets to total assets, and ratio of current liabilities to total assets, as well as size, firm growth rate, financial leverage, and annual GDP growth rate as control variables. The analysis employed correlation analysis and pooled panel data regression models. The results show a significant negative correlation between longer holding times for inventories and accounts receivable, and profitability metrics, whereas accounts payable period and profitability metrics have a negative correlation, but not statistically significant. The study also found a strong inverse association between profitability metrics and the cash conversion period. Additionally, the ratio of current liabilities to total assets was strongly positively linked to profitability metrics, while liquidity and profitability measures negatively correlated. The research suggests that managers could increase firms' profitability by improving the efficiency of working capital investment and financing policies, while also considering the trade-off between liquidity and profitability.

In 2011, Mekonnen conducted a study to determine the significance of the correlation between a company's working capital management and its profitability. The study utilized quantitative research methods and examined several research hypotheses using survey and documentation analysis of audited financial statements from a stratified sample of firms. To avoid bias, a straightforward random selection method was used to select companies from each strata within manufacturing organizations, resulting in a sample of 13 businesses over a five-year period, with a

total of 65 observations. The data was analyzed using OLS regression and Pearson's correlation, and the results showed a significant inverse relationship between working capital management and profitability. The study suggested that managing the cash conversion cycle and maintaining each working capital component at its highest feasible level could improve earnings and value for businesses and shareholders. The research also found a significant inverse correlation between profitability and liquidity, and a positive relationship between business profitability and size. However, the study did not find a statistically significant correlation between a firm's profitability and its use of debt.

Vallalnathan and Joriye (2012) conducted a study to examine how working capital management (WCM) affects the profitability of cooperative unions in East Showa, Ethiopia. They used a quantitative research approach and collected secondary data from eight cooperative unions that fulfilled specific criteria and had financial statements available from 1999-2003 Ethiopian calendar (E.C.). They analyzed the panel data using random effect multiple regression models to determine the standard determinants of working capital. The results showed that the average collection period (ACP) had a negative impact on the profitability of the unions, while inventory turnover period (ITP) had a positive effect. The comprehensive measure of WCM, cash conversion cycle (CCC), also had a positive impact on profitability. The study also found a positive correlation between liquidity, measured by current ratio (CR), and profitability, as well as between the size of the unions and their profitability, and between debt usage by cooperative unions and their profitability. These findings may encourage cooperative unions to utilize WCM as a viable source of finance to achieve their goals.

2.2.4. Conclusion and Research gap

A lot of literatures are developed to examine the effect of working capital on firm's profitability but to the best of the researchers knowledge, there isn't an empirical research conducted specifically on the effect of working capital management on the profitability of textile manufacturing companies in Ethiopia. The study tries to examine 11 year recent data and implement appropriate method of analysis. Finally the researcher believed that, the arrangements would fill the gap identified in this study.

Therefore, there is a need for research that specifically investigates the relationship between working capital management and profitability in Ethiopian textile manufacturing companies. Such

studies could provide valuable insights into the factors that drive profitability in this particular industry and could inform the development of strategies to improve financial performance. Given the heterogeneity in location, date, and industry specific sector, the conclusions of the empirical investigations discussed above are diverse and in conclusive. This necessitates more research on the subject, such as the current investigations.

2.3 Conceptual Framework

The following graphical presentation explains the conceptual framework of the relationship between working capital management and profitability of textile manufacturing companies.

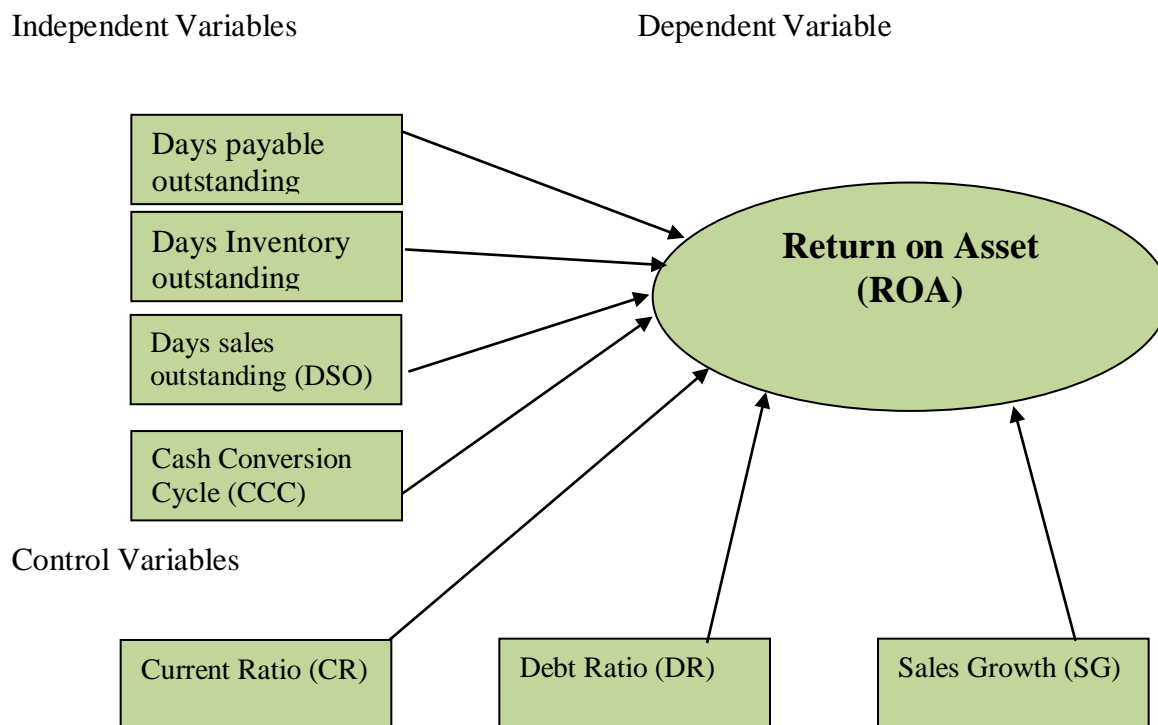


Figure 2.3. Conceptual Framework.

Source: own design from different literatures

CHAPTER THREE: RESEARCH METHODOLOGY

This section presents the methods and techniques adopted for collection of data and for their analysis in the study.

3.1 Research Design

Research design is the plan and structure of investigation so conceived as to obtain answers to research questions. The plan is the overall scheme or program of the research. The design of research entails a plan and structure that aims to provide answers to research questions. It encompasses the entire program of the research. In this particular study, the research type employed is explanatory research, which aims to describe the cause and effect relationship between dependent and independent variables. The researcher aims to establish the correlation between working capital management and profitability of textile manufacturing companies.

3.2 Source of Data

The study relied on secondary data obtained from the companies' financial statements such as income statements and balance sheets spanning a period of eleven years, from 2011 to 2021. The reason for selecting this period is due to the availability of the latest data for analysis. The data was sourced from the audited financial statements of the companies from ERCA higher tax payer branch office.

3.3 Method of Data Collection

The data for the study was obtained by evaluating audited financial statements, specifically the balance sheet and income statement, of the target companies using a structured document. This method was necessary as the study required quantitative data, which could not be acquired by simply distributing questionnaires to company executives or other interested parties. Analyzing the balance sheet and income statement provided the best way to estimate the impact of working

capital management on firm profitability, as it was both convenient and cost effective. However, the use of secondary data has its limitations in terms of obtaining necessary information directly from selected organizations and its dependability.

3.4 Sampling method

The researcher used non probability purposive sampling method which can proved insightful and relevant information related to the research objective. The audited financial statements were collected from the ERCA higher tax payer branch office, which identifies six textile manufacturing share companies in Ethiopia as higher tax payer companies among ten textile manufacturing share companies. These six companies were used as the focus of the empirical studies as they represent the entire population under consideration and availability of eleven years data. The dependent, independent, and control variables for the study were calculated and obtained from the companies' financial accounts.

3.5. Data Analysis Methodology

To study the effect of working capital management on profitability of textile manufacturing companies in Ethiopia, a balanced panel data analysis was conducted. A linear regression model was employed to identify the degree to which each independent variable influenced profitability, as measured by the return on assets (ROA). The assumptions of the classic linear regression model were tested using SPSS statistical software, and the regression model was executed with STATA statistical software package to assess the causal relationship between profitability and potential determinants, and to determine the most significant and influential explanatory variables impacting profitability of textile manufacturing companies.

3.6 Variable Description and Model Specification

3.6.1 Description of Variable

The majority of the study's dependent and independent variables were derived from previous literature on working capital management. Deloof (2003) investigated the relationship between working capital management and business profitability, as previously indicated. (number of days accounts receivable + number of days inventory – number of days accounts payable) is the variable

for the cash conversion cycle. Return on Assets is a metric for determining profitability. Along with working capital characteristics, the current study took in to account some control variables like the firm's sales growth, current ratio, and debt ratio.

✓ **Dependent Variables**

The Return on Assets (ROA) is a dependent variable: It displays profits per birr of assets and demonstrates how well the company's assets are managed to create income, although it may be skewed due to off-balance-sheet operations (Habtamu, 2012).

During the fiscal year ROA can be calculated as:

$$ROA = \frac{Net\ income}{Total\ asset}$$

✓ **Independent variable:**

Inventory Conversion Period or Days Inventory Outstanding (DIO)

$$DIO = \frac{inventory}{Cost\ of\ goods\ sold} * Number\ of\ days\ in\ a\ year$$

Average Collection Period or Days Sales Outstanding (DSO)

$$DSO = \frac{receivable}{sales} * Number\ of\ days\ in\ a\ year$$

Average Payment Period or Days Payable Outstanding (DPO)

$$DPO = \frac{Accounts\ payable}{Cost\ of\ goods\ sold} * Number\ of\ days\ in\ a\ year$$

Cash Conversion Cycle

$$(CCC)=DIO+DSO-DPO$$

✓ **Control variables:**

Current Ratio (CR) =

$$DR = \frac{\text{Current Asset}}{\text{Current liability}}$$

Debt Ratio (DR) =

$$DR = \frac{\text{Total liability}}{\text{Total Asset}}$$

Sales Growth (SG)=

$$SG = \frac{\text{Current year sales} - \text{Previous year sales}}{\text{Previous year sales}}$$

3.6.2 Specification of the model

The study employs balanced panel data regression analysis of cross-sectional and time series data for a twelve-year duration, with the aim to investigate how working capital management affect the profitability of textile manufacturing companies in Ethiopia.

The effect of working capital management metrics (Days Inventory Outstanding (DIO), Days Sales Outstanding (DSO), Days Payable Outstanding (DPO), The Cash Conversion Cycle (CCC), Current Ratio (CR), Debt Ratio (DR), and Sales Growth (SG) on Net Operating Profitability was investigated using Multiple linear regression analysis.

Functions of regression in this study, the **equation of multiple linear regressions** is based on two sets of variables: dependent variables (profitability) and independent variables (Days inventory Outstanding, Days sales Outstanding, Days Payable Outstanding and The Cash Conversion Cycle).

The general formula used for the model is represented as follows:

$$Y_{it} = \sum_{i=t}^t \beta X_{it} + \varepsilon_{it}$$

$$\mathbf{ROA}_{it} = \beta_0 + \beta_1(\mathbf{DIO}_{it}) + \beta_2(\mathbf{DSO}_{it}) + \beta_3(\mathbf{DPO}_{it}) + \beta_4(\mathbf{CCC}_{it}) + \beta_5(\mathbf{CR}_{it}) + \beta_6(\mathbf{DR}_{it}) + \beta_7(\mathbf{SG}_{it}) + \varepsilon_{it}$$

Where:

ROA: Return on Asset for company i, in time t

DIO: Days inventory Outstanding for company i, in time t

DSO: Days sales Outstanding for company i, in time t

DPO: Days Payable Outstanding for company i, in time t

CCC: Cash Conversion Cycle for company i, in time t

CR: Current Ratio for company i, in time t

DR: Debt Ratio for company i, in time t

SG: Sales Growth for company i, in time t

β_0 : Intercept of the equation

β' : coefficients of the independent variables

ε : The error term.

CHAPTER FOUR: DATA ANALYSIS AND DISCUSSION OF THE RESULTS

Introduction

Return on Asset was used to assess the firm's financial success in this study (ROA). Cash Conversion Cycle (CCC), Days inventory outstanding (DIO), Days Payable outstanding (DPO), Days sales outstanding (DSO) and Return on equity (ROE) were the working capital measures used in the study.

The strategy used is to show the data separately first, and then to combine the results from diverse methods to address each study hypothesis. The primary purpose of this study is to determine how working capital management influences a firm's profitability. Surveys of document analysis of corporate financial statements, specifically income statements and balance sheets, are the key data sources for this study. The study's main statistical tools were empirical results from quantitative data analysis using SPSS and STATA software, which presented results from descriptive statistics, correlation matrix, and regression results. The reason for utilizing two statistical software is because, similar to most researchers and statisticians, the researcher thinks that employing various software applications can offer more options and extensive examination depending on distinct requirements and choices.

4.1 Descriptive Statistics

This part presents the result based on the descriptive statistics of both the dependent and independent variables which are described under the following sections. Table 4.1 below, which presents descriptive statistics for 6 textile manufacturing companies in Ethiopia for a period of eleven years from 2011 to 2021. Key figures, including mean, standard deviation, minimum and maximum value were reported. This was generated to give overall description about data used in the

model and served as data screening tool.

Table 4.1 Descriptive Statistics

Variables	N	Minimum	Maximum	Mean	Std. Deviation
ROA	66	-.3912	0.5093	.28218	.1434674
ACP(DSO)	66	2.19	737.87	369.8395	189.93470
APP(DPO)	66	0.16	1979.79	246.5580	409.01014
ICP	66	3.50	610.88	527.9121	638.72611
CCC	66	-180.53	950.78	884.3445	918.71569
CR	66	0.04	0.27	7.4158	4.09071
DR	66	0.11	0.61	0.8562	0.66874
Sales Growth	66	-.08196	.2140	-1.2189	1.91345
Valid N	66				

Source: own computation using SPSS statistical software

Based on, Table 4. 1. The mean of ROA was 28.22% with a minimum of -39.12% and a maximum of 50.93%. That means, the most profitable textile manufacturing company earned 50.93 percent of profit before tax for a single birr invested in the assets of the firm. On the other hand, the least profitable textile manufacturing company loses 39.12% of profit before tax for each birr invested in the assets of the firm. The standard deviation statistics for ROA was 14.35%, shows that the profitability variation was very large among the textile manufacturing companies. The result implies that the value of profitability on both sides of the mean can vary by 14.35%. Previous studies have shown that profitability varies widely in the textile manufacturing industry (**Chakrabarty & Das** 2015). These results have implications for decision-making within the textile manufacturing industry. Firms that are currently underperforming may need to consider changing their business strategies to improve profitability and remain competitive. There could be several reasons for the wide variation in profitability between textile manufacturing companies. Factors such as market conditions, operational efficiency, and financial management could all play a role in determining profitability. Additionally, external factors such as changes in government policies or economic conditions could also affect profitability.

Textile manufacturing companies receive payment against sales after an average of 369 days and a standard deviation of 189 days. The smallest time it takes the Textile manufacturing companies to recover money from accounts receivable is two days, and the greatest period is 737 days. In relating with previous studies, research has shown that accounts receivable turnover varies widely across

industries and can be influenced by factors such as credit policies, payment terms, and customer demographics. However, the average collection period of 369 days seems very long and may raise concerns about the efficiency of the textile manufacturing companies in managing their accounts receivable. The implications of the results indicate that the textile manufacturing companies may need to review their credit policies and payment terms to reduce the average collection period. The longer it takes to recover money from accounts receivable, the more strained their working capital becomes, which can impact their cash flow and overall liquidity. Shortening the collection period may help to improve their financial position and enable them to reinvest in their business or pay off existing debts. Possible reasons for the long collection period could be poor credit policies and enforcement, ineffective collection procedures, insufficient credit scoring and rating systems, and a lack of investment in financial management and control. Addressing these issues may help to reduce the average collection period and improve the financial health of textile manufacturing companies.

Day's payable outstanding is the most essential working capital management component that have a positive relationship in various empirical studies with the firm's profitability, as measured by return on assets. The average time it takes for the textile manufacturing companies to pay for a purchase of raw material and other things from suppliers is 246 days, with a standard variation of 409 days. The smallest time taken by the companies for this purpose is less than a day, and the highest time taken is 1979 days. Possible reasons for the high variation in payment duration among textile manufacturing companies are the differences in their bargaining power, size, industry norms, and financial health. Companies with stronger bargaining power or more significant financial resources may negotiate for longer payment terms, while smaller firms may have to accept shorter payment terms or face cash flow problems. Also, industry norms may influence payment duration, as textile manufacturing may involve longer production cycles and require significant upfront investments.

The average value of Inventory turnover period as a proxy for inventory policy is 527 days. This means, textile manufacturing companies necessities on average 527 days to sell inventory. As it is shown in the above table, the standard deviation of inventory holding period is 638 days. To the sampled firms the inventory holding period ranges between 3 and 610 days as minimum and maximum values respectively. The maximum value of 610 days to convert inventory into sales is a very long period. This is a large figure could be due to various reasons such as inadequate demand forecasting, inefficient supply chain management, poor inventory management practices, or slow-moving products. To address this, firms could consider implementing better demand forecasting

methods, adopting lean inventory management practices, optimizing their supply chain, or analyzing their product mix to identify and address slow-moving inventory. In terms of implications, reducing the inventory holding period can help firms free up working capital and improve cash flow. It can also enable firms to respond more quickly to changes in demand and reduce the risk of obsolescence. Therefore, textile manufacturing firms should aim to optimize their inventory turnover period while maintaining adequate inventory levels to meet customer demand.

The average cash conversion cycle for evaluating working capital management efficiency is 884 days, with a standard deviation of 918 days. The shortest time it takes for the textile manufacturing companies to convert its overall activity is -180 days, this implied the companies were able to generate cash before it had to pay its bills for the purchase of raw materials, which can be a good sign for its financial health and liquidity), on the other hand the longest time it takes is 884 days. Improving the process of converting assets into cash could lead to better liquidity, increased profitability, and reduced financial risks. Moreover, companies need to develop strategies to reduce their cash conversion cycle, such as negotiating better payment terms with their suppliers, reducing inventory levels, and improving their collection processes. Several factors could contribute to the long cash conversion cycle in the textile manufacturing industry. These include long payment terms demanded by suppliers, high inventory levels, inefficient production processes, and slow collection processes. In addition, the textile industry is highly capital-intensive, making it difficult for companies to optimize their cash conversion cycle. Finally, external factors such as economic conditions and government policies could also affect the cash conversion cycle of textile manufacturing companies.

In addition, the above table also incorporates the descriptive statistics of control variables that was used in the study. The liquidity of the companies is checked using a traditional measure of liquidity (current ratio). The average current ratio is 7.42, with a standard deviation of 4.09. The highest current ratio for the textile manufacturing companies in a given year is 0.27, while the lowest current ratio is 0.04. Studies have shown that a high current ratio could indicate good liquidity and financial stability of a company (Ghosh, 2010). This result is in line with the findings of this study. The implications of this result could mean that textile manufacturing companies with a high current ratio may be more attractive to investors as they have strong liquidity positions. It could indicate that these companies are better positioned to meet their short-term obligations. Possible reasons for the high current ratio could be due to efficient inventory management, high cash balances, or low

levels of short-term debt. It is important to note, however, that a high current ratio may not always be a positive indication as it may also suggest that the company is not making efficient use of its assets (Ghosh, 2010).

The debt ratio is also employed as a control variable to assess debt financing and its link with profitability of the textile manufacturing companies in Ethiopia. According to descriptive statistics, the average debt ratio is 85.62%, with a standard deviation of 66.874%. A company's maximum debt financing is 61%, which is uncommon because debt is a larger asset. It is feasible, though, if the company's equity is negative. While the debt ratio must be at least 11%, this indicates that the textile manufacturing companies are using some debt in its operations, but excessive debt can result in financial distress and bankruptcy in the long run. Hence, it is critical to determine the optimal level of debt for sustainability and growth.

Sales growth is employed as a control variable to examine for sales growth and its impact on profitability of the textile manufacturing companies. The average value of sales increase is -121.89%, with a standard deviation of 191.35%, as shown in the above table. The lowest and highest sales growth rates are -81.96% and 21.40%, respectively. Possible reasons for the lower average sales growth rate could be due to changes in market demand, increased competition, changes in consumer preferences, changes in macroeconomic factors, and poor management decisions. These factors could have negatively impacted the sales growth of the textile manufacturing companies.

4.2 Correlation Coefficient Matrix analysis of WCM variables

Pearson's Correlation analysis, which is also known as bivariate correlations, has been performed in order to determine and identify if there is any significant strong relationship between the independent and dependent variables such as the working capital components and control variables towards the profitability of firms measured by ROA under textile manufacturing companies. The summary of the Pearson's correlation matrix is presented in Table 4.2 below.

Table 4.2 Correlation matrix

		ROA	ACP (DPO)	APP (DPO)	ICP	CCC	CR	DR	SG
ROA	Pear. Corr	1							
	Sig. (2-tailed)								

ACP (DSO)	Pear. Corr	-.308	1						
	Sig. (2-tailed)	.047 ^{**}							
APP (DPO)	Pear. Corr	.196 [*]	-.059	1					
	Sig. (2-tailed)	.062	.638						
ICP	Pear. Corr	-.105 ^{**}	.015	.619 ^{***}	1				
	Sig. (2-tailed)	.005	.905	.000					
CCC	Pear. Corr	-.027 [*]	.688 ^{***}	.007	.166	1			
	Sig. (2-tailed)	.083	.000	.954	.183				
CR	Pear. Corr	-.037 ^{**}	.675 ^{***}	-.104	-.018	.660 ^{***}	1		
	Sig. (2-tailed)	.047	.000	.405	.886	.000			
DR	Pear. Corr	.152 ^{**}	-.119	-.030	-.118	-.137	-.148	1	
	Sig. (2-tailed)	.002	.341	.812	.345	.273	.236		
SG	Pear. Corr	.173 ^{**}	.014	-.197	-.018	.019	.004	.028	1
	Sig. (2-tailed)	.001	.909	.113	.884	.881	.976	.825	
<p>[*], ^{**}, ^{***} implies correlation is significant at the 0.1, 0.05, 0.01 level (2-tailed), respectively.</p> <ul style="list-style-type: none"> ➤ N=66 ➤ sig. (2-tailed) stands for the p-value or probability value associated with a statistical test that assumes a two-tailed distribution. 									

Source: own computation using SPSS statistical software

Table 4.2 Shows negative correlation coefficient between Average collection period and profitability measures, i.e. return on asset. From the table, one can notices that correlation coefficient of Average collection period with ROA is -0.308. It indicates that the shorter Average collection period are associated with high profitability and/or longer debtors' collection period is associated with lower profitability. The correlation is statistically significant since the significance level, which is 0.047, is less than 0.05 (the common significance level, at 95% level of confidence).

The average payment time and ROA profitability have a positive correlation with coefficient value of (0.196) and with a p-value of (0.062), which is significant at 10% significance level. This is due to the fact that, other things holding unchanged, the textile manufacturing companies have delayed the payable period so as to reinvest the profit for expansion. The cash conversion cycle has a negative coefficient of -0.027 and a p-value of (0.083). At a significance level of 10%, it is significant. It suggests that if the textile manufacturing companies can reduce the cash conversion cycle, it will be able to boost its profitability. Pearson's correlation table, also reveals a strong negative association between inventory conversion period and profitability. With a p-value of 0.05, the correlation coefficient is -0.105. At 1% significance level, the ratio is marginally significant,

meaning that if a textile manufacturing companies waits longer to convert their raw materials, semi-finished and finished products into more liquid asset, their cash flow will be weak and finally will diminish their profitability. After studying the data, the researcher concluded that if the company can manage these periods effectively, it is actual that its profitability will rise because of this efficiency in management.

A traditional tool for analyzing a company's liquidity is the current ratio. The current ratio has a strong negative relationship with profitability as evaluated by ROA in the above table, with a coefficient of -0.037 and a p-value of (0.057), and the result is significant at a level of 10%. It reveals that liquidity and profitability are mutually exclusive goals. As a result, Textile manufacturing organizations must kept a balance or make a trade-off between these two factors.

At the same time, the Pearson correlation study shows that debt ratio, which is used as a proxy for a textile manufacturing company's leverage, has a positive relationship with return on asset, with a coefficient of 0.152. The p-value (0.002), on the other hand, is significant at a level of 5%. Furthermore, with respect to the control variables, sales growth has a 0.173 coefficient of correlation with the firm's profitability. The p-value, on the other hand, is significant.

Pearson's correlation table, discloses a strong positive association between the average collecting period and cash conversion period, inventory with average payment period, and current ratio with average collection period and cash conversion period. With a p-value of 0.000, the correlation coefficients are 0.619, 0.688, 0.675 and 0.660 respectively. Similarly, there is a strong positive correlation between inventory and average payment period, and current ratio with average collection period and cash conversion period. The correlation coefficients for all these associations are positive and range between 0.619 and 0.688, which indicates that these financial ratios move together in a similar direction.

Bases on the forgoing correlation coefficient matrix analysis, it can be understood that working capital management has a very significant and sizeable impact on the profitability of textile manufacturing enterprises. To end with, the researcher accepts all hypothesis and it is confirmed that because of the coefficient for average payment period is positive and the accompanying probability value is significant at 5% when evaluated by return on asset. The researcher of this study has a gut to say the 6 high tax payer textile manufacturing companies during the period from 2011 -

2021 shows there profitability was inversely related with average collection period, inventory conversion period, cash conversion period and current ratio. However, on the other hand average payment period, debt ratio and sale growth were directly related with the profitability metric.

4.3 Testing Assumptions of Classical Linear Regression Model (CLRM)

Before conducting the regressions of the models, the basic CLRM assumptions are tested. In order to draw correct estimation, using regression model to analyze the data requires certain assumptions to be fulfilled. Under this subsection, the study presented four different results for the tests of CLRM such as tests of normality assumption, tests for multicollinearity, tests for homoscedasticity, and tests for the absence of autocorrelation.

4.3.1 Test for normality assumption

One of CLRM's assumptions is to determine if the disturbances are regularly distributed or not. As a result, one of the most often used tests for normality is either graphical or numerical approaches. In this study to check whether the normality test was adequately meet, the numerical approach was used. Table 4.3.1 compares the Kolmogorov-Smirnov and Shapiro-Wilk test for normality assumption. The probability values for both Kolmogorov-Smirnov and Shapiro-Wilk test is 0.059 and 0.687 respectively, in which the values are greater than 0.05. In this case we are failed to reject the null hypothesis for which the residuals or the error term or the disturbance term show normal distribution.

Table 4.3.1 Test for Normality

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
sqres ^b	.335	66	0.059	.489	66	0.687
a. Lilliefors Significance Correction,						
b. sqres refers the square of unstandardized residual in SPSS						

Source: own computation using SPSS statistical software

4.3.2 Test for Heteroscedasticity assumption

This part focuses on another important diagnostic test, i.e. heteroscedasticity test. Heteroskedastic means “differing variance” which comes from the Greek word “hetero” (‘different’) and “skedasis” (‘dispersion’). It refers to the variance of the error terms in a regression model in an independent

variable. If heteroscedasticity is present in the data, the variance differs across the values of the explanatory variables and violates the assumption.

Table 4.3.2 Test for Heteroscedasticity assumption

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.011	7	.002	.880	.528 ^b
	Residual	.101	58	.002		
	Total	.111	65			
a. Dependent Variable: sqres						
b. Predictors: (Constant), Sales Growth, CR, ICP, DR, APP(DPO), ACP(DPO), CCC						

Source: own computation using SPSS statistical software

Likewise the test for normality assumption, either graphical or numerical approaches can be used to test for Heteroscedasticity assumption. As per the results, indicated in table 4.3.2, the p-value is 0.528 which is significant enough to reject the alternative hypothesis. Therefore, the dataset had not heteroskedastic variances. In other word, the dataset has homoscedastic variances.

4.3.3 Multicollinearity Assumption

The multicollinearity test is utilized to detect the correlation between independent variables and to prevent double impact of the same variable in the model. In practical situations, the relationship among explanatory variables is generally non-zero but not significant enough to cause a loss of precision. However, multicollinearity occurs when independent variables are very highly correlated, which can lead to misspecification of regression test results. Field (2005) suggests that multicollinearity only becomes problematic when the correlation coefficient exceeds 0.80. Therefore, checking for multicollinearity is necessary to ensure the accuracy of regression test outcomes. Table 4.2 correlation matrix shows that no single correlation coefficient exceeds 0.80, hence, we can conclude that multicollinearity is not a concern. According to Brooks (2008), a small degree of association between explanatory variables will almost always occur.

To confirm the result of Table 4.2, we have undergone a variance and tolerance inflation factor test. Based on the analysis of Maddala (1992) and Gujarati (2004) for instance, we can compare the reciprocals (VIF) with a predetermined tolerance. There is evidence of multicollinearity in the

comparison if the VIF result for each variable is larger than 10 or the reciprocal of each variable's VIF is less than 0.1. Chatterjee and Hadi (2006) also suggested that the mean of all the VIFs is much bigger than one in addition to this comparison. The findings on both instances reveal no indication of a multicollinearity issue in our independent variables.

Table 4.3.3 Test for multicollinearity assumptions

(Variables)	VIF < 10	Tolerance > 0.1
ACP(DPO)	1.148	0.950
APP(DPO)	1.827	0.472
ICP	1.999	0.205
CCC	3.483	0.300
CR	2.421	0.145
DR	1.059	0.945
Sales Growth	1.075	0.930
Mean of VIF	1.86 >1	

Source: own computation using SPSS statistical software

4.3.4 Test for Autocorrelation assumption

We have proved that the independent variables identified in this model are found to be uncorrelated or orthogonal. What about the error or the disturbance term? It is assumed that the errors are uncorrelated or orthogonal with one another. If the errors are correlated with one another, it would be stated that they are “autocorrelated” or that they are “serially correlated”. The Durbin–Watson, Baltagi-Wu test, Pasaran CD, and Breusch–Godfrey tests are the most commonly used to test this assumption (Boorks, 2008, p. 144). The SPSS statistical software provides a probability value for Durbin–Watson test for autocorrelation, which is common in panel data and time series data categories.

Table 4.3.4 Test for Autocorrelation assumption

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.834 ^a	0.696	0.659	.04165	1.527
a. Predictors: (Constant), Sales Growth, CR, ICP, DR, APP(DPO), ACP(DPO), CCC					
b. Dependent Variable: sqres (square of residuals)					

Source: own computation using SPSS statistical software

Makridakis and Wheelwright (as cited in Baveld, 2012) consider as Durbin Watson value between 1.5 and 2.5 as acceptable levels indicating no presence of autocorrelation. As showed in Table 4.3.4, the DW statistic is 1.527, which falls within the acceptable range, suggesting that the residuals are not autocorrelated and the null hypothesis cannot be rejected. Therefore, it can be concluded that autocorrelation is not a problem in the model.

4.3.5 Panel unit root test

A panel unit root test must be conducted first before moving on to consider panel regression analysis. This test is helpful to identify whether the panel data has unit root or not. In panel data analysis, stationarity (no presence of unit root) is preferred over non-stationarity (has unit root). Stationarity implies that statistical properties of a variable, such as mean and variance, remain constant over time and do not show any trend or systematic change in behavior. This makes it easier to estimate the coefficients of the panel model and interpret the results. On the other hand, non-stationarity implies that these properties change over time, making it difficult to interpret the results and draw meaningful inferences. Additionally, if non-stationarity is present in the data, it can lead to spurious regression results. Therefore, it's important to check for the presence of non-stationarity in panel data. One of the most popular panel unit root tests is the Levin-Lin-Chu (LLC) test, which was introduced by Levin et al. (2002). The LLC test is a panel unit root test that allows for cross-sectional dependence and heterogeneous trends in the data. The LLC test has been widely used in various fields such as finance, economics, and environmental studies. The decision to reject or accept the null hypothesis relies on Significance level (i.e. the commonly used 0.05). Hence, as displayed on Table 4.3.5, the calculated p-value is less than 0.05, we reject the null hypothesis and conclude that our panel data sets are stationary at zero level or don't have unit root problem.

Table 4.3.5 Panel Unit root test using Levi-Lin-Chu approach

Variable	Stationary level	Levi-Lin-Chu	
		Statistics	P-value
ROA	I(0)	-10.7109	0.0000
ACP (DSO)	I(0)	-1.0012	0.0000
APP (DPO)	I(0)	-41.1866	0.0000

ICP	I(0)	-16.9473	0.0000
CCC	I(0)	-26.8587	0.0000
CR	I(0)	-9.2068	0.0000
DR	I(0)	-11.5145	0.0000
SG	I(0)	-9.7245	0.0000

Source: own computation using STATA statistical software

4.4 Results of Regression Analysis

This section presents the empirical findings from the econometric results on the effect of working capital on the profitability of textile manufacturing companies in Ethiopia. The section covers the empirical regression model used in this study and the results of the regression analysis.

While the Pearson correlation analysis shows the relationship between the variables, it does not identify the causes from consequences (Shin and Soenen, 1998; and Deloof, 2003). The Pearson correlation does not provide a reliable indicator of association in a manner which controls for additional explanatory variables. Examining simple bivariate correlation in a conventional matrix does not take account of each variable's correlation with all other explanatory variables (Padachi, 2006). Consequently, it's necessary to perform regression analysis. The regression is estimated and run using Return on asset as an dependent variable. Further, all independent variables are run using cash conversion period, account receivable period, inventory conversion period, average payment period and other control variables such as debt ratio, current ratio, firm growth rate and firm size. Therefore, this section present the regression outputs for the model specified in chapter three of this study.

i.e.

$$ROA_{it} = \beta_0 + \beta_1(DIO_{it}) + \beta_2(DSO_{it}) + \beta_3(DPO_{it}) + \beta_4(CCC_{it}) + \beta_5(CR_{it}) + \beta_6(DR_{it}) + \beta_7(SG_{it}) + \varepsilon_{it}$$

4.4.1 Hausman's specification test

The primary methods utilized in econometric modeling of panel data are fixed-effects and random-effects estimations. In the fixed-effects approach, time-invariant, unobservable factors for each observation unit are either explicitly captured by dummy variables or wiped out through time-demeaning. In contrast, these time-invariant unobservable are treated as part of the disturbances in the random-effects model, thereby assuming that their correlation with the regressors is zero. If this

assumption is met, the random-effects estimator confers the advantage of greater efficiency over the fixed-effects estimator. Violation of the assumption, however, implies biased estimates. Hausman's (1978) specification test is frequently used to examine the suitability of either of these two methods (Amini, S., Delgado, M. S., Henderson, D. J., & Parmeter, C. F. (2012).

Hausman's specification test shall be conducted to choose the appropriate estimating model, and scholars are sometimes advised to use a Hausman (1978) specification test to choose between FE and RE models Clark, T. S., & Linzer, D. A. (2015).

shall be conducted to choose the appropriate estimating model, and scholars are sometimes advised to use a Hausman (1978) specification test to choose between FE and RE models Clark, T. S., & Linzer, D. A. (2015).

Brooks (2008) claimed that a p-value of less than 1% in the Hausman test suggests that the fixed effects model is more suitable than the random effects model. Therefore, based on Table 4.4.1 of the Hausman specification tests, the model yielded a p-value of 0.0011. This indicates that the fixed effect is preferred to the model.

Table 4.4.1 Hausman Specification Test

$\chi^2(6) = (b-B)'[(V_b - V_B)^{-1}](b-B)$	1.31
Prob>chi2	0.0011

Source: own computation using STATA statistical software.

4.4.1 Regression result of Fixed Effect for the model

In the course of estimating the model specified in chapter three of this research paper, we tried to use most of the estimation methods applicable to a balanced panel model estimations in order to attain at an all-encompassing and sound result. This is the fixed effect.

Table 4.4.1 Estimation Results of FE and RE

Variables	(Fixed Effect)
------------------	-----------------------

	ROA		
	Coeff & Std. error	t	P > t
ACP (DSO)	-1.066*** (0.706)	-1.59	0.001
APP (DPO)	0.259* (0.512)	-0.51	0.057
ICP	-0.027*** (0.714)	-0.04	0.001
CCC	-1.067* (0.641)	-1.66	0.099
CR	-0.025* (0.019)	-1.32	0.066
DR	0.160 (0.274)	0.58	0.216
SG	0.114** (0.169)	0.67	0.038
Constant	-0.039** (0.331)	-0.12	0.049
Observations	66		
Number of Year	11		
Prob > chi2	0.042		
R-Squared-Within	0.22		
R-Squared-Between	0.77		
Overall R-Squared	0.22		

Standard errors are in parentheses for FE & RE respectively. ***, ** and * indicate statistical significance at 1 %, 5 % and 10 % levels, respectively.

Source: own computation using STATA statistical software

As can be displayed from Table 4.4.1, Estimation Results of FE , the prob > chi2 value is typically associated with statistical significance. This value indicates the probability that the coefficients in the model are zero, or in other words, the probability that the variables included in the model do not have a significant effect on the outcome variable. The prob > chi2 value is less than 0.05 significance level for FE (0.042) , it suggests that the model coefficients of the FE are statistically significant and meaningful. This means that the variables included in the FE estimated models are significantly associated with the outcome variable and can help to explain its variation, the vice versa holds true for RE. Thus, it seems that a fixed effects model would be more appropriate for this study. A fixed effects model controls for unobserved heterogeneity (i.e. differences in profitability that are specific to each textile companies) by including dummy variables for each company in the regression analysis. This allows the researcher to isolate the effect of managing working capital on

profitability while controlling for other factors that may differ between companies. Also, since the study does not use any sampling technique (only considers the total population of textile share companies) and the data is collected from a population of 66 observations covering a period of 11 years, a fixed effects model would be more appropriate for this type of panel data analysis.

Accordingly, in the subsequent sub-section econometric analysis has been made on the basis of the fixed effect model regression result as depicted in **Table 4.4.2**. From the **Table 4.4.2** average collection period with a coefficient value of (-1.066) has shown a negative effect on return on asset, which is also significant at a level of 1%. The coefficient can be interpreted as, other working capital component remain unchanged, a day increase in the average collection period was associated with a 1.066 unit decrease in return on asset or profitability over the period 2011 – 2021 in the textile manufacturing company. These findings are consistent with prior empirical research Jain and Yadav (2014) found that the longer the average collection period, the lower the ROA in Indian manufacturing firms, Al-Najjar and Abed (2019) examined the impact of working capital management on the financial performance of Jordanian industrial firms, and found that the increase in average collection period negatively influences ROA, Atanasova and Nikolov (2017) on Bulgarian manufacturing companies concluded that longer collection periods decreased their profitability, Garcia-Teruel and Martinez-Solano (2007) indicated that an increase in the average collection period had a negative impact on the return on assets in Spanish SMEs.

Average payment period had a positive (0.259) and significant association at 10% level of significance with return on asset in the estimated model, which indicates that a day increase in the Average payment period was associated with a 0.259 unit decrease in profitability of share companies in Ethiopia, holding all other factors constant. There are several prior empirical literatures that are consistent with the finding that the average payment period has a negative impact on return on assets (ROA). One study by Zhang, Gao, and Zhang (2010) found that a longer average payment period was associated with lower profitability in Chinese manufacturing firms. Another study by Ayanda, Adetunji, and Hammed (2016) found that a longer payment period was associated with lower ROA for Nigerian firms. Similarly, a study by Pradhan and Paudel (2016) found that a longer average payment period had a negative effect on profitability in Nepalese firms. Another study by Tuarob and Singkharat (2017) found that a shorter payment period was associated with higher profitability in Thai firms.

Inventory conversion period on the other hand, had a statistically significant at 1% and negative effect (0.027) on return on asset or profitability in the estimated model. It can be interpreted that, an increase in the day of inventory outstanding without conversion, is associated with a 0.027 decrease in profitability of textile manufacturing companies, other factors remain not changed. This finding is consistent with prior empirical literature that suggests that an increase in the inventory conversion period is negatively associated with profitability in manufacturing companies. The longer a company takes to convert its inventory into sales, the higher its holding costs become, which can gradually decrease its profitability. This has been shown in studies conducted by Alvarez and Asmild (2010), Kim and Choe (2015), and Lin and Luo (2016), among others.

The research had also found that, Cash conversion cycle with coefficient value (-1.067) had a negative and statistically significant effect on profitability of textile manufacturing companies over the period 2011 – 2021 at 10% significant level. Holding other factors not unchanged, a day increases in cash conversion period is associated with a decrease in profitability of textile manufacturing companies by 1.067 unit on average. There have been several studies that have established a negative relationship between cash conversion cycle and profitability of firms. These studies include: Raheman, Mirza, and Akhtar (2010) found a negative relationship between cash conversion cycle and profitability of Pakistani firms. Deloof (2003) found a negative relationship between cash conversion cycle and profitability of Belgian firms. Filbeck and Krueger (2005) found a negative relationship between cash conversion cycle and profitability of U.S. manufacturing firms. Nazir and Afza (2009) found a negative relationship between cash conversion cycle and profitability of Pakistani textile firms.

Furthermore, the regression result in table 4.4.1, illustrates that enterprises with high liquidity are likely to have poor profitability, and vice versa, with a relatively lower level of significance. The regression coefficient -.025 and p-value 0.66 are significant at 10%, representing a negative link between company profitability and liquidity. The coefficient can be interpreted as, other factors remain unchanged, a unit increase in the current ratio was associated with a 0.025 unit decrease in return on asset or profitability over the period 2011 – 2021 in the textile manufacturing company. The result is consistent with some empirical literature that enterprises with high liquidity are likely to have poor profitability. A study by Koulakiotis et al. (2014) found that high liquidity was negatively correlated with profitability in Greek small and medium-sized enterprises. A study by Al Mamun et al. (2017) found a negative correlation between liquidity and profitability in the banking

sector in Bangladesh. A study by Lu and Yu (2017) found that higher liquidity was associated with lower profitability in the Chinese stock market, although the effect was stronger for state-owned enterprises than for private enterprises.

In contrast to the current ratio, the regression output for debt ratio as a measure of a textile manufacturing companies leverage shows that as debt grows, profitability also upsurges. The p-value (0.216) shows that the result is insignificant.

The intercept value, which represents the starting point of the regression line, with coefficient value of -.039, in the estimated model represents the estimated constant in our regression model. This means that when all other independent variables in our regression model are equal to zero, profitability is expected to take a value of -.039. Hence, there is a negative and statistically significant inverse relationship between, profitability and the intercept term at 1% level of significance.

4.5 Discussions of the results

Examining the effects of working capital management on textile manufacturing enterprises is done with reference to the findings of the regression analysis performed in the preceding section. Regression was performed using the return on asset as the dependent variable and the account receivable period, average payment period, cash conversion period, and inventory conversion period as the independent variables. The study discovered that the lower account receivable period significantly increases profitability, and the lower account payable term has a slight but favorable effect on profitability. Inventory turnover and cash turnover have a favorable relationship with profitability. The following is a further discussion of the fixed effect regression results.

4.5.1 Days Sales outstanding or Average Collection Period

Based on the fixed regression results in Table 4.4.1, the coefficient on days sales outstanding (DSO) or average collection period is negative and statistically significant. This means that as DSO

increases (or the company takes longer to collect its accounts receivable), the return on asset (ROA) decreases for textile manufacturing companies in Ethiopia. Therefore, textile manufacturing companies in Ethiopia should focus on implementing effective credit and collection policies to manage their accounts receivable more efficiently and improve their cash flow. This can help to reduce DSO and ACP, improve profitability, and increase their overall return on assets. For example, the findings of Deloof (2003), Lazarides et al. (2006), Mekkonen (2011), and Gill et al. (2011), which indicated a negative significant effect, are justified by the idea that company reduce their accounts receivable in order to narrow the liquidity gap in the cash conversion cycle.

4.5.2 Days Payable Outstanding or Account Payable Period

Days Payable Outstanding or Account Payable Period affect return on asset positively and significantly as indicated in table 4.4.1 and the regression result in the model is significant at 10% significance period. With an increase in Account payable period resulting in an increase in return on asset for Ethiopian textile manufacturing enterprises. The possible reason for this is, businesses delay paying their bills longer in order to benefit from cash available for working capital needs, and longer delays in payments result in higher levels of working capital that can be reserved and used to boost profitability. There are limited prior empirical literatures on the relationship between accounts payable period and return on assets in Ethiopian manufacturing companies. However, some relevant studies in other countries have found similar results which are consistent with this finding. For instance, a study conducted by Chen and Wang (2011) in Taiwan found that there is a positive relationship between accounts payable period and return on assets, which suggests that a longer accounts payable period leads to a higher return on assets. Similarly, in a study by Chiang and Chen (2007) in the US, they found that there is a positive relationship between accounts payable period and profitability, indicating that an increase in the accounts payable period is associated with an increase in profitability. Moreover, in a study by van der Stede and Young (2013) in Canada, they found that longer accounts payable periods are associated with better financial performance, suggesting that manufacturers can improve their financial performance by increasing their accounts payable period.

Mathuva (2009) found that the number of days that accounts payable takes to be paid has a positive impact on profitability. The empirical conclusion can be explained by the fact that less profitable companies typically pay their bills later. This is also supported by Deloof (2003), and the findings are consistent with those of the following researchers' studies: Mathuva (2009), Sharma and Kumar

(2011), Lazaridis and Tryfonidis (2006), Padachi (2006), Eljelly (2004), and Lazaridis and Tryfonidis (2006).

4.5.3 Days Inventory Outstanding or Inventory Conversion Period

Inventory conversion is a significant working capital component for textile manufacturing companies in Ethiopia. This is because textiles are a raw material-intensive industry, and the cost of raw materials often comprises a significant portion of a textile manufacturer's operating expenses.

In the textile manufacturing process, the raw materials must be converted into finished goods through various stages such as spinning, weaving, dyeing, and finishing. These stages require a substantial amount of input materials, equipment, and labor, which all contribute to the inventory of the finished goods. Managing inventory levels is crucial for textile manufacturing companies to minimize the costs associated with holding and managing inventory. Hence, inventory conversion is vital for textile manufacturing companies in Ethiopia, and effective management of inventory levels is critical to maximizing profits and reducing operational costs.

Inventory conversion times, as shown in table 4.4.1, have a negative and considerable impact on the return on assets for Ethiopian textile manufacturing companies. The negative and considerable impact on the return on assets for Ethiopian textile manufacturing companies indicates that the longer inventory conversion times negatively affect the financial performance of these companies. This means that if the inventory conversion times are longer, it takes more time to convert the inventory into sales, which ties up the company's financial resources and reduces its profitability. Therefore, in order to improve the financial performance of these companies, it would be necessary to reduce inventory conversion times. This can be due to a variety of reasons, such as poor inventory management, inefficient manufacturing processes, or weak demand for the products. In the case of Ethiopian textile manufacturing companies, it could be due to inefficiencies in the supply chain, lack of modern technology in manufacturing, or insufficient market demand for the products. Additionally, the textile industry is highly competitive, and companies that are slow to respond to changing consumer demands or market conditions may struggle to generate satisfactory returns. However, the outcome is in line with earlier empirical research, including those by Deloof (2003), Karaduman (2004), Raheman and Nasr (2007), Lazarides and Tryfonidis (2006), Ternel and Solano (2007), Mekonnen (2011), and Wubishet (2014), which indicated a negative relationship between the number of days of inventory and profitability.

4.5.4 Cash Conversion Cycle (CCC)

The cash conversion cycle is one of the most often used indicators of working capital management (Deloof, 2003). Over the years, researchers found a negative effect of number of days Cash Conversion Cycle on profitability (Soekhoe, 2012), Mintesnot, G., & Tilahun, B. (2018).

The findings of the study, as indicated in table 4.4.1, reveal that the CCC has a significant negative impact on the profitability of these companies. Possible reasons for this negative impact could be that companies with longer CCCs may have to finance their operations through higher levels of borrowing which can lead to higher interest expenses, reducing the profitability of the company. Additionally, companies with longer CCCs may have difficulty in managing their working capital, resulting in inefficient use of resources and poor cash flow management. This can further impact their profitability as they may not be able to utilize their resources as effectively as companies with shorter CCCs. Thus, the study also suggests that textile manufacturing companies in Ethiopia need to focus on reducing their CCC by improving their inventory turnover, accounts receivable turnover, and accounts payable turnover in order to enhance their profitability. Moreover, the study highlights the importance of efficient working capital management practices as a key instrument for the success of textile manufacturing companies in Ethiopia.

4.6 Hypotheses Testing

The profitability of Ethiopian textile manufacturing companies is determined by a number of explanatory factors and regressors, and the results for each are shown in the section that follows. Overall, hypothesis testing is an important tool for drawing conclusions and making decisions based on data in a systematic and objective way.

H₁: Average Collection period has negative significant effect on textile manufacturing companies' profitability in Ethiopia over the period observed from 2011 to 2021.

The average collection period negatively affects the profitability of textile manufacturing companies in Ethiopia from **2011 to 2021**. The statistical analysis conducted in our model table 4.4.1 reveals a significant negative effect (-1.066) of the average collection period on profitability, with a p-value of **0.001**. As a result, the null hypothesis was not rejected, supporting the claim that the average collection period has a negative impact on profitability.

H₂: Average payment period has significant positive effect on textile manufacturing companies' profitability in Ethiopia over the period observed from 2011 to 2021.

The average payment period positively affects the profitability of textile manufacturing companies in Ethiopia between **2011** and **2021**. The statistical analysis conducted in our model table 4.4.1 reveals a significant positive effect (2.59) of the average payment period on profitability, with a p-value of **0.057**. As a result, the null hypothesis was not rejected, supporting the claim that the average payment period has a positive impact on profitability.

H₃: Inventory conversion period has significant negative effect on textile manufacturing companies' profitability in Ethiopia over the period observed from 2011 to 2021.

The inventory conversion period negatively affects the profitability of textile manufacturing companies in Ethiopia between **2011** and **2021**. The statistical analysis conducted in our model table 4.4.1.1.1 reveals a significantly negative effect (-0.027) of the inventory conversion period on profitability, with a p-value of **0.001**. As a result, the null hypothesis was not rejected, supporting the claim that the inventory conversion period has a negative impact on profitability.

H₄: Cash conversion cycle has significant negative effect on textile manufacturing companies' profitability in Ethiopia over the period observed from 2011 to 2021.

From 2011 to 2021, textile manufacturing companies in Ethiopia were adversely impacted by longer Cash conversion cycle, as evidenced by statistical analysis conducted in our model table 4.4.1. The analysis revealed a significant negative impact (-1.067) on profitability, with a p-value of 0.099. Consequently, the null hypothesis was upheld, supporting the assertion that profitability is negatively affected by the inventory conversion period.

CHAPTER FIVE: CONCLUSIONS and RECOMMENDATIONS

This chapter presents the conclusions drawn from the study and provides corresponding recommendations for further action. The purpose of this chapter is to summarize the key findings of the research, provide insights on how these findings could impact the field, and offer practical recommendations to address the gaps identified. The conclusions and recommendations outlined in this chapter are based on a comprehensive review of the literature, data analysis, and expert opinions. These insights will be valuable to stakeholders and decision-makers looking to enhance their understanding of the subject matter and improve their practices. This chapter serves as the final act of this research study, drawing all the threads together into a coherent tapestry of ideas that can guide future efforts in the field.

5.1 Conclusions

The study assessed the effect of working capital management on six textile manufacturing

companies in Ethiopia over the period from 2011 to 2021. To achieve the objective of the study, the balanced panel data was analyzed on quantitative basis using descriptive statistics, Pearson's correlation and fixed effect regression analysis. The findings revealed that working capital management has a significant impact on the profitability of textile manufacturing companies in Ethiopia. The analysis showed that the companies that practiced efficient working capital management exhibited better financial performance, higher liquidity, and profitability ratios.

However, to start with, the preliminary findings of the study thru descriptive analysis, the study conducted a descriptive analysis of the profitability of textile manufacturing companies. The findings revealed that, on average, these companies earned a net income of 0.028218 from their total assets. However, this figure varied greatly, with the maximum value being 0.5093 and the minimum value being -0.3912. This indicates that some companies are performing significantly better or worse than others.

Another metric that was analyzed was the cash conversion period. This is a comprehensive measure of working capital that adds the account receivable period to the inventory conversion period and then subtracts the account payable period. The results showed that the average cash conversion period for textile manufacturing companies was 884 days. Once again, this figure ranged widely, with the minimum value being -180 days and the maximum value being 950 days.

On average, it takes the six textile manufacturing companies 369 days to receive pay for credit sales, while their accounts payable period has a mean value of 246. The minimum accounts payable period is less than one day, and the maximum is 1979 days. Additionally, the inventory conversion period was used as an independent variable, measuring the number of days the companies wait for inventory sales. Based on the results of this study, on average, the textile manufacturing companies wait 527 days for inventory sales and have a minimum of 3 days and a maximum of 610 days.

The Pearson correlation analysis indicates that return on asset exhibits a positive correlation with account payable, debt ratio, and sales growth with correlation coefficients of 0.196, 0.152, and 0.173, respectively. Conversely, return on asset displays a negative correlation with cash conversion period, account receivable period, inventory conversion period, and current ratio with correlation coefficients of -0.308, -0.105, -0.027, and -0.037, respectively.

Fixed effect estimation technique was employed as a major estimation scheme of the regression model to examine the effect of working capital management on Ethiopian textile manufacturing companies' profitability but before running the regression the CLRM assumptions were tested using the SPSS statistical software, these are normality test, Multicollinearity test, autocorrelation test, heteroscedasticity test, and test for significance of the model were tested and all tests fulfilled the assumption.

Based on the regression result mentioned, it appears that the longer period of account receivable negatively impacted the profitability of the Ethiopian textile manufacturing company. To improve profitability, the company could consider lowering the period of account receivable, which would involve granting lower credit periods to customers. The rationale behind this recommendation is that by offering lower credit periods, the company can reduce the amount of time it takes to receive payment from customers, which in turn can improve cash flow and ultimately lead to increased profitability. Additionally, by being more responsive to competition and sustaining its market position, the company may be able to increase sales and revenue, further boosting its profitability.

Accounts payable period has a significant positive effect on Ethiopian textile manufacturing companies' profitability. The regression result also indicates that inventory conversion period and cash conversion period have significant effect on profitability of Ethiopian textile manufacturing companies. Inventory conversion period has a significant negative effect on the observed textile manufacturing companies in Ethiopia. For textile manufacturing companies, the raw material and finished product inventory is a critical working capital component that is essential for their operations. Raw materials such as cotton, silk, wool, and other fibers are the primary inputs required for manufacturing textiles. These materials are usually purchased in bulk and stored in inventory until they are needed for production. Hence firms shall reduce the time period for this conversion process in order to gain more profit from the venture.

Generally, the overall result suggest that the Ethiopian textile manufacturing company can improve its profitability by reducing the account receivable period and improving its inventory and cash conversion periods. By implementing these changes, the company can increase its cash flow, reduce working capital costs, and improve market competitiveness. Overall, these findings can be valuable for textile manufacturing companies in Ethiopia looking to maximize their profitability and gain a sustainable market position.

5.2 Recommendations

Based on the outcome of the descriptive and econometric regression analysis, the study forwarded the following recommendations.

Ethiopian textile manufacturing companies should shorten their credit period to their customers by implementing applicable collection policy for the sector. By offering discounts for early which reduces the account receivable period, by making clear credit policies that outline payment terms and limit credit extensions to customers who have a good credit history, by monitoring receivables regularly thru establishing a strict account receivable monitoring system to track any overdue payments or irregularities in the payment process. By implementing these strategies, a company can improve its account receivable period, which helps to increase cash flow and boost profitability.

The study suggests that in order to increase profitability of Ethiopian textile manufacturing companies, they have to systematically and carefully delay to pay their bills and this can positively impact the company's profitability because it allows the company to hold its cash for a longer period of time, which in turn increases its liquidity. Ethiopian textile manufacturing companies can do these on to systematically and carefully delay their bills. Firstly by negotiate longer payment terms with suppliers. Since textile manufacturing companies require an immense amount of raw material and to keep the relationship with the supplier seamless, textile manufacturing companies should be careful in negotiating. Secondly by utilizing trade credit, which allows to delay payment without incurring interest charges. However, it's important to remember that while extending the payable period can positively impact profitability, it shouldn't come at the expense of your supplier relationships or their ability to operate effectively. It's important to maintain good communication and transparency with suppliers to ensure a mutually beneficial solution. By accurately forecasting demand for products, a company can order the right amount of inventory and reduce excess inventory that ties up capital. In doing so, a company reduce its inventory conversion period, increase profitability, and improve its competitive position in the market.

In regards to the cash conversion cycle, the researcher also suggests textile manufacturing companies to decrease the cash conversion cycle to positively increase a company's profitability thru Negotiate longer payment terms with suppliers, Decrease inventory levels and Collect receivables more quickly.

5.3 Limitations and Further Research Directions

The focus of this research was on the impact of working capital management on the profitability of textile manufacturing firms in Ethiopia. For the purpose of this study, only textile manufacturing companies were considered. Future research could broaden the scope by including companies from various manufacturing sectors. The study was restricted to using return on assets as the sole measure of profitability, thus future research could enhance the analysis by incorporating other measurements such as return on equity, net profit margin, gross profit margin, and the like. The study only considers the effect of working capital management on profitability, while other factors such as government policy, market competition, and management practices could also have an impact. The study only uses a fixed effect estimation method, and other methods such as, pooled OLS, and dynamic panel models could produce different results. Ultimately, additional research could extend the study's scope by utilizing long-term time series data and reinforcing the research by integrating primary data.

This study has identified areas where future research could be conducted. Future research may focus on extending the study to cover more business forms when more data becomes available. Future research may also consider extending this study by introducing other variables into the model. Other factors such as operating efficiencies, pricing strategies, and market competition can also affect a firm's profitability. This could increase the comprehensiveness and accuracy of the study results will help to further understand the effect of working capital management.

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Appendix

Data collected from financial statement of textile manufacturing companies

Year	Company Id	ROA	ACP(DSO)	APP(DPO)	ICP	CCC	CR	DR	SG
2011	1	0.1519	20.46	299.51	283.75	4.7	0.16	0.54	0.214
2012	1	0.1279	79.89	561.71	602.52	130.71	0.23	0.55	0.102
2013	1	0.1313	94.73	607.22	607.36	94.87	0.18	0.61	-0.0174
2014	1	0.1411	112.33	656.42	607.36	63.27	0.17	0.6	-0.0169
2015	1	0.1435	133.2	710.31	608.56	31.45	0.16	0.51	-0.0132
2016	1	0.1573	157.94	765.6	607.36	-0.29	0.26	0.48	-0.0119
2017	1	0.1591	187.29	828.45	608.56	-32.6	0.17	0.43	-0.0115
2018	1	0.1691	222.08	896.46	610.88	-64.62	0.19	0.41	0.0128
2019	1	0.1777	263.33	971.02	607.58	-96.11	0.22	0.39	0.0981

2020	1	0.1796	312.25	1050.74	602.79	-125.7	0.17	0.36	0.0781
2021	1	0.1903	370.26	1135.88	601.58	-154.04	0.13	0.35	0.0561
2011	2	-0.1477	30.01	46.76	135.67	118.92	0.18	0.58	0.1659
2012	2	-0.0602	65.07	96.27	208.67	177.47	0.17	0.61	0.1935
2013	2	-0.0472	8.66	136.42	220.6	92.84	0.15	0.36	0.1396
2014	2	-0.0415	66.11	213.2	149.38	2.29	0.19	0.44	0.0745
2015	2	-0.3912	3.5	172.86	3.5	-165.86	0.04	0.58	0.1354
2016	2	0.3607	7.29	211.38	23.56	-180.53	0.22	0.42	0.1542
2017	2	0.3532	7.51	225.71	202.55	-15.65	0.19	0.35	0.1453
2018	2	-0.1075	21.4	242.3	149.47	-71.44	0.23	0.55	-0.0801
2019	2	-0.129	83.18	1165.65	124.93	-57.55	0.22	0.57	-0.08196
2020	2	-0.0562	68.48	1079.17	195.46	-95.22	0.26	0.38	0
2021	2	-0.0153	70.29	993.01	193.5	270.78	0.21	0.35	0
2011	3	-0.0009	737.87	1979.79	476.88	865.65	0.21	0.26	0.1793
2012	3	-0.0547	112.92	79.82	290.62	323.72	0.25	0.4	0.1974
2013	3	-0.2239	38.52	50.92	177.95	165.55	0.2	0.54	0.1946
2014	3	-0.0023	31.21	46.17	177.45	162.48	0.25	0.57	0.0498
2015	3	0.004	43.71	81.91	113.83	75.63	0.21	0.59	0.0858
2016	3	0.0037	35.54	74.09	109.72	71.17	0.17	0.61	0.0588
2017	3	0.0017	28.89	69.96	110.42	69.35	0.24	0.47	0.1199
2018	3	0.0019	32.62	63.28	92.52	61.86	0.14	0.61	0.199
2019	3	0.0025	26.52	57.24	89.1	58.39	0.24	0.61	0.1917
2020	3	0.0018	21.56	51.77	85.65	55.44	0.26	0.44	0.1153
2021	3	0.0015	24.35	46.83	82.56	60.08	0.17	0.37	0.1
2011	4	0.0705	117.87	0.16	384.07	950.78	0.25	0.25	0.08
2012	4	0.0462	125.67	0.53	298.1	823.23	0.22	0.4	-0.0175
2013	4	0.002	111.71	4.53	294.52	501.69	0.17	0.54	-0.0528
2014	4	-0.0087	103.31	4.62	566.1	464.78	0.13	0.51	-0.0164
2015	4	-0.1242	233.01	5.25	602.74	850.51	0.21	0.58	-0.0179
2016	4	-0.2221	33.48	2.4	225.57	256.65	0.26	0.32	0.16
2017	4	-0.0796	32.56	2.99	139.3	168.86	0.27	0.57	0.11
2018	4	-0.3157	41.32	6.73	142.5	177.09	0.24	0.52	-0.0069
2019	4	0.1553	53.15	5.74	108.63	156.04	0.19	0.57	-0.0193
2020	4	0.2159	76.96	25.24	71.76	123.48	0.14	0.33	-0.0487
2021	4	0.5093	44.41	29.33	127.97	143.06	0.18	0.16	-0.0422
2011	5	0.0079	32.85	1.92	221.9	252.83	0.12	0.21	0.17
2012	5	0.0076	32.85	1.13	169.39	201.11	0.15	0.11	0.16
2013	5	0.0093	33.51	1.24	181.39	213.66	0.13	0.18	0.18
2014	5	0.0076	109.43	1.82	182.12	289.73	0.12	0.51	0.15
2015	5	0.0068	80.81	3.22	312.85	390.44	0.19	0.56	-0.0396
2016	5	-0.1302	116.28	1.26	129.85	244.86	0.06	0.56	-0.0129
2017	5	-0.0122	76.02	2.31	133.92	207.63	0.27	0.56	0.14

2018	5	0.1231	58.22	2.11	225.8	281.91	0.25	0.59	0.16
2019	5	-0.1202	14.6	2.5	199.7	211.8	0.24	0.58	0.18
2020	5	-0.0116	20.12	3.67	252.12	268.57	0.14	0.48	0.15
2021	5	-0.0516	11.52	4.36	402.48	409.64	0.19	0.49	0.14
2011	6	0.0394	2.35	24.25	603.63	741.57	0.06	0.15	0.11
2012	6	0.04	2.55	36.15	606.68	682.72	0.05	0.26	0.129
2013	6	0.0449	2.7	49.78	601.95	664.36	0.16	0.44	0.1544
2014	6	0.0466	2.19	26.62	328.15	303.72	0.17	0.6	0.1497
2015	6	0.064	4.45	56.01	184.89	131.06	0.14	0.53	0.2041
2016	6	0.0944	4.69	7.45	197.94	192.68	0.18	0.52	0.1464
2017	6	0.0636	2.44	20.11	240.36	222.44	0.22	0.57	0.1442
2018	6	0.0545	26.3	9.56	271.95	264.58	0.21	0.53	0.1558
2019	6	0.0519	9.27	78.39	239.87	163.67	0.15	0.52	0.1559
2020	6	0.052	6.29	71.87	220.97	151.29	0.19	0.6	0.1918
2021	6	0.0435	9.12	111.75	157.85	48.29	0.24	0.57	0.1912

Source: ERCA High Tax Payers Revenue Office