The Impact of Working Capital Management on Firms' Profitability (In Case of Manufacturing Share Companies in Addis Ababa)

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ABSTRACT

The purpose of this study is to investigate the impact of working capital management on firms' profitability. The study aims to examine the statistical significance between firms' working capital management and profitability. In light of this objective, the study adopted quantitative method of research approach to test a series research hypothesis. Specifically, the study used survey of documentary analysis of companies audited financial statements. Stratified sampling design was employed based on nature and turnover of companies. Then companies were selected based on simple random sampling method from each stratum to avoid biases and represent firms from each sub classification (stratum) within manufacturing companies. Consequently, the study selected a sample of thirteen (13) companies for the period of five years (2013-2017) with the total of 65 observations. Data was then analyzed on quantitative basis using correlation and multiple regression analysis. The results showed that there is significant positive relationship between profitability and working capital management. It means that, companies' managers can create profits or value for their companies and shareholders by handling correctly the cash conversion cycle and keeping each different component of working capital to a possible optimum level. The researcher found that there is an insignificant negative relationship between Cash conversion cycle and profitability. Moreover, the study finds that there is significance positive relationship between Average payable period and firm profitability. Finally, the study will suggest about management of manufacturing firms made under study can create value for the shareholders as well to make the firms performance well by reducing: the net time interval between actual cash expenditures on a firm's purchase of productive resources and the ultimate recovery of cash receipts from product sales.

Keywords: working capital, working capital management, Average collection period, average payable period, cash conversion cycle and profitability.

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ACRONYMS

ACP: Average Collection Period

APP: Average Payment Period

CCC: Cash Conversion Cycle

CLRM: Classical Linear Regression Model

COGS: Cost of Goods Sold

CR: Current Ratio

CSA: Central Statistics Agency

DR: Debt Ration

EOQ: Economic Order Quantity

ERCA: Ethiopian Revenues and Customs Authority

GOP: Gross Operation Profit

GWC: Gross Working Capital

NPM: Net Profit Margin

NWC: Net Working Capital

ROA: Return on Asset

WC: Working Capital

CHAPTER ONE

1. INTRODUCTION

1.1. Background of the Study

Management of working capital which aims at maintaining an optimal balance between each of the working capital components, that is, cash, receivables, inventory and payables is a fundamental part of the overall corporate strategy to create value and is an important source of competitive advantage in businesses (Deloof, 2003). In practice, it has become one of the most important issues in organizations with many financial executives struggling to identify the basic working capital drivers and the appropriate level of working capital to hold so as to minimize risk, effectively prepare for uncertainty and improve the overall performance of their businesses (Lamberson, 1995).

Working capital management is a very important component of corporate finance because it directly affects the liquidity and profitability of the company. It deals with current assets and current liabilities. Working capital management is important for several reasons such as, the current assets of a typical manufacturing firm accounts for over half of its total assets. For a distribution company, they account for even more. Excessive levels of current assets can easily result in a firm's realizing a substandard return on investment. However, firms with too few current assets may incur shortages and difficulties in maintaining smooth operations (Horne and Wachowicz, 2000). Many surveys have indicated that managers spend considerable time on day -to-day problems that involve working capital decisions. One reason for this is that current assets are short- lived investments that are continually being converted into other asset types (Rao, 1989).

With regard to current liabilities, the firm is responsible for paying these obligations on a timely basis. Liquidity for the on going firm is not reliant on the liquidation value of its assets, but rather on the operating cash flows generated by those assets (Soenen, 1993). Efficient working capital management involves planning and controlling current assets and current liabilities in a manner that eliminates the risk of inability to meet due short-term obligations on the one hand and avoid excessive investment in these assets on the other hand (Eljelly, 2004).

Working capital management, which deals with the management of current assets and current liabilities, directly affects the liquidity and profitability of the company. However, an appropriate attention usually is not given for. The ability of the firm to continuously operate for longer period is depending on how they deal with investment in working capital. There are much empirical evidences in the financial literature that present the importance of working capital management (Deloof 2003; Teruel and Solano, 2007; Shin and Soenen, 1998 and Wang, 2002; Raheman and Nasr, 2007). Results of these empirical analysis show that there is statistical evidence for a strong relationship between the firm's profitability and its WCM efficiency. The studies also give significant evidence that issues of WCM vary for different industries and firms from different industry sectors adopt different approaches to working capital management and follow an appropriate working capital management approach that is favourable to their industry.

1.2. Statement of the Problems

The management of a firm's liquidity is necessary for all businesses, small, medium or large. When a business does not manage its liquidity well, it will have cash shortages and as a result experience problem paying its obligations when they fall due. Indeed, working capital starvation has generally been credited as a major cause, if not the main cause of small business failure in many developed and developing countries (Rafuse, 1996). Working capital management is important because of its effect on the firm's profitability and risk, and consequently its value (Smith, 1980). Investments in current assets represent a very significant position of total assets. Working capital management is critical to all firms but particularly to small ones because they do not have access to long term financing yet they must finance the current assets. Additionally, there is risk-return trade off; in that the optimal level calls for a balance between profitability and solvency by minimizing the total costs of liquidity and cost of illiquidity, the working capital management's objectives being enhancing profitability and liquidity (Pandey, 1997).

On the other hand, Tiringo (2013) examined the impact of WCM on profitability of micro and small enterprises in Ethiopia for the case of Bahirdar city administration. The result showed that there is a strong positive relationship between number of day's accounts payable and enterprises profitability. However, number of days accounts receivable, number of days inventory and cash conversion cycle have a significant negative impact on profitability. Working capital management is a particular importance to the profitability growth of a business entity. This is because without a proper

management of working capital, it is difficult for the firm to run its operations smoothly. That is why Brigham and Houston (2003) conclude that about 60 percent of a typical financial manager's time is devoted to working capital management. Hence, the crucial part of managing working capital is maintaining the required liquidity in day-to-day operation to ensure firm's smooth running and to meet its obligations.

Further, working capital management has been major issue especially in developed countries. As a result, in order to explain the relationship between working capital management and profitability different researches have been carried out in different parts of the world especially in developed countries. However, despite the above importance this issue failed to attract the attention of researchers in Ethiopia and the major gap that is found by the researcher have to maintain the balance between profitability and liquidity as a result many manufacturing companies do not make such kind of analysis in order to maintain the survival of the companies. In its effect most, Ethiopian company's managers thought regarding working capital management is, to shorten the cash conversion cycle (traditional views) to increase firm's profitability.

However, if firm has higher level of account receivable due to the generous trade credit policy, it would result to longer cash conversion cycle. In this case, the longer cash conversion cycle would increase profitability and thus, the traditional view of managers cannot be applied to all circumstances. Hence, lack of miss management of working capital in the area gives a chance for Ethiopian company's managers to have limited awareness in relation to working capital management to increase firm's profitability.

Even though the studies conducted on foreign countries relationship between the management of working capital and the firm's profitability is generally acceptable, it is difficult to draw an inference from this perspective towards Ethiopia. There are few studies available that shows the existence of the causal relationship between working capital management and profitability of the firms. Therefore, there is a room to do the study on this issue for Ethiopian case. The researcher is intended to focus basically on industries and firms located in capital city, Addis Ababa.

Therefore, by keeping the above problem in mind, the study would try to find out the impacts of working capital management on firms' profitability. The question that this study should seek to answer; is there a relationship that exists between working capital management practices

employed by the firm and financial performance in the listed manufacturing companies in Ethiopia?

1.3. Objective of the study

- **General objective**

  Is to determine the relationship between working capital management and the profitability of Addis Ababa Manufacturing companies.

- **Specific objectives**

The study would be guided by the following specific objectives

- ✓ To analyze the relationship between average collection period and profitability.
- ✓ To establish the relationship between average payment period and profitability.
- ✓ To evaluate the relationship between cash conversion cycle and profitability.

1.4. Hypotheses development

This study aims to examine the impacts of working capital management on profitability of Firms in Addis Ababa city with a special reference to the manufacturing sector of share companies. Therefore, in light of the above research objective, several statements of supposition can be made in view of the impacts of working capital management on firms' profitability. The following discussion covers the hypotheses that this study would attempt to test.

Fried (2013) articulated that Accounts receivable period measures the number of days it takes to collect cash from debtors. Fabozzi and Peterson (2003) mentioned that when a firm allows customers to pay for goods and services at a later date, it creates accounts receivable or refers to trade Amir Shah and Sana (2006), Garcia-Teruel and Martinez- Solano (2007), Falope and Ajilore (2009), Dong and Su (2010) and Mathuva (2009) All agree that smaller number of days accounts receivable and shorter cash conversion cycle improved

HP1: *Accounts receivable period have significant negatively related to a firm's profitability.*

Accounts Payable Period (APP) measure the number of days a firm takes to pay its suppliers. Thus, this ratio represents an important source of financing for operating activities. Research was the association between the average payment period and profitability and found out to be positive. Shin and Soenen (1998), Wang (2002) and Deloof (2003) but corroborate that of

Padachi (2006) and Sharma and Kumar (2011) argue in favor of a negative relationship between CCC and firm profitability

HP2*: The account payable period of a firm is significant positively related to a firm's Profitability.*

Cash conversion cycle is one factor that would affect profitability of firms. Weston and Brigham (1977, P. 690) mentioned that firms typically follow a cycle in which companies purchase inventory, sell goods on credit, and then collect accounts receivable. This cycle is referred to as the cash conversion cycle (CCC). Thus, CCC focuses on the length of time between when the company makes payments and when it receives cash inflows. Sound working capital policy is designed to minimize the time between cash expenditures on materials and collection of cash on sales depend upon working capital policies of firms. Gitman (1999) argued that CCC is a key factor in working capital management. Therefore, CCC can be shortened first by reducing inventory conversion period by processing and selling goods more quickly. Secondly, by reducing receivables collection period through speeding up collections and finally, by lengthening the payables deferral period through slowing down the firm's own payments. Therefore, to the extent that these actions can be taken without increasing costs or depressing sales, it increases firm's profitability. Thus, the second hypothesis is developed as follows:

HP3*: There is a negative relationship between cash conversion cycle and profitability of firms.*

1.5. Scope of the study

The study would delimit in its title to the impacts of working capital management on the profitability of manufacturing share companies located in Addis Ababa city administration. Finally, the study would take only five years data starting from year 2013 – 2017.

1.6. Significance of the study

The study's findings would help the manufacturing firms and other companies in general improve on their financial decision making so as to optimize the value of the shareholders and maintain a favourable trade- off between liquidity and profitability. The findings would also be of great benefit to future researchers in the field of working capital management in providing relevant literature in building up the course of study. It shall benefit other scholars and students

of finance who may use the findings for academic purposes. With the working capital management playing a major role in financial stability of different firms its efficient utilization is necessary in achieving the goals of financial stability. The study would recommend ways through which working capital can be effectively utilized in financial decision making, policy makers, investors and managers. This effective utilization in the long run shall increase wealth of the shareholders.

1.7. Limitations of the study

The quality of one research is highly depending on the genuine information acquired from concerned populations or companies. So that, lack of willingness and reliability of the data was the main problems face in the study process which have taken a lot of time and money to accomplish. Also lack of adequate accounting disclosure and treatment have limited the scope of the study on current measurements and analysis. Moreover, shortage of latest reference books and literature on the area in Ethiopian context have narrowed the study depth.

1.8. Organization of the study

The study would focus on examining the impacts of working capital management on profitability of manufacturing share companies found in Addis Ababa city administration. The rest of this study will organize as follows. Chapter 2 introduces the core issues of concern that are connected with working capital management and reviews preceding works that tackled them analytically and empirically. Chapter 3 provides the research design and methodological frameworks employed to accomplish the stated objective of the study. Chapter 4 presents result and detail discussion of data and analysis. The last chapter will present conclusion and recommendation.

CHAPTER TWO

2. LITERATURE REVIEW

2.1. Introduction

The term working capital implies company's investment in short term assets like cash, short term securities, accounts receivables and inventories (Weston and Brigham, 1977). Precisely, these assets are financed by short-term liabilities like accounts payable and short-term borrowings; thus, net working capital is defined as the difference between current assets and current liabilities. Working capital management is the decision relating to working capital and short-term financing, and this includes managing the relationship between the company's short-term assets and its short-term liabilities. This enables the company to continue operations and to have enough cash flow at its disposal to satisfy both maturing short-term debts and upcoming operational expenses, which is the major objective of working capital management.

The purpose of this chapter is to review the evidence on working capital management and profitability measures of a firm. Hence, the chapter is arranged into three sections. The first section presents the theoretical review of working capital management while the second section reviews the empirical evidence pertaining to working capital management. Third, the section presents conclusions on the literature review and identifies the knowledge gap that this study attempts to fill in. finally, under section fourth, section present nature of manufacturing companies.

2.2. Theoretical review

The term working capital originated with the old Yankee peddler, who would load up his wagon with goods and then go off on his route to peddle his wares. The merchandise was called working capital because it was what he actually sold, or "turned over," to produce his profits. The wagon and horse were his fixed assets. He generally owned the horse and wagon, so they were financed with "equity" capital, but he borrowed the funds to buy the merchandise. These borrowings were called working capital loans, and they had to be repaid after each trip to demonstrate to the bank that the credit was sound. If the peddler was able to repay the loan, then

the bank would make another loan, and banks that followed this procedure were said to be employing "sound banking practices" (Brigham and Houston, 2003).

The term working capital is commonly used for the capital required for day-to-day working in a business concern, such as for purchasing raw material, for meeting day-today expenditure on salaries, wages, rents rates, advertising and the like. But, still there is much disagreement among various financial authorities (Financiers, accountants, businessmen and economists) as to the exact meaning of the term working capital. Working capital is defined as "the excess of current assets over current liabilities and provisions". However, as per accounting terminology, it is difference between the inflow and outflow of funds. In Arnold (2008) working capital is defined as it includes "stocks of materials, fuels, semi-finished goods including work-in-progress and finished goods and by-products; cash in hand and bank and the algebraic sum of various creditors as represented by outstanding factory payments e.g. rent, wages, interest and dividend; purchase of goods and services; short-term loans and advances and sundry debtors comprising amounts due to the factory on account of sale of goods and services and advances towards tax payments".

On the other hand, the term working capital is often referred to "circulating capital" which is frequently used to denote those assets which are changed with relative speed from one form to another i.e., starting from cash, changing to raw materials, converting into working- progress and finished products, sale of finished products and ending with realization of cash from debtors (Weston and Brigham, 1977). Further, Shin and Soenen (1998) defined working capital as a "time lag between the expenditure for the purchase of materials and the collection for the sale of the finished products".

In summary, working capital means the funds (i.e. capital) available and used for day to day operations of an enterprise. It consists broadly of that portion of assets of a business which are used in or related to its current operations. Further, it refers to funds which are used during an accounting period to generate a current income of a type which is consistent with major purpose of a firm existence. In light of the above definition of working capital the following discussions present components of working capital, types of working capital, factors determining working

capital requirement, working capital management, working capital policy, profitability and liquidity measures and trade-off between liquidity and profitability in an orderly manner.

2.2.1. Components of working capital

The core concept of working capital has been subjected to considerable change over the years. A few decades ago the concept was viewed as a measure of the debtor's ability to meet his/her obligations in case of liquidation. The prime concern was with whether or not the current assets were immediately realizable and available to pay debts in case of liquidation. In applying this measure, a one-year period was frequently used to classify assets and liabilities as those due within one year for working capital purposes. In recent years, the focus has shifted from this liquidation point of view and the current emphasize shifted to the ability of the firm to pay its maturity obligations from the funds by current operations. In this sense, working capital is dynamic measure of the margin or buffer for meeting current obligations.

To understand working capital, it is better to have basic knowledge about various aspects of working capital. To start with, there are two concepts of working capital known as gross and net.

Gross working capital (GWC): Gross working capital generally deals with overall corporate assets. It is also the total cash, and cash equivalent that a business has on-hand to run the business. Cash equivalents may include inventory, account receivable and investments, on marketable securities, which may be liquidated within the calendar year (Paramasivan and Subramanian, 2009). Generally, gross working capital is simply called as the total current assets of a firm.

Net working capital (NWC): it's the amount of assets or cash that remain after subtracting a company's current liabilities which refers to the claims of outsiders which are expected to mature for payment within an accounting year and include creditors for goods, bills payable, bank overdraft and accrued expenses from its total current asset (Brealey and Myers, 2006). This can be mathematically presented as: In this equation net working capital may be positive or negative. A positive net working capital arises when current assets exceed current liabilities and a negative net working capital arises when current liabilities exceed current assets.

According to Brigham and Houston (2003) both (positive or negative NWC) aspects have equal importance for management. Therefore, positive WC focuses the attention on the optimum investment in and financing of the current assets, while negative WC indicates the liquidity position of the firm and suggests the extent to which working capital needs may be financed by permanent sources of funds.

2.2.2. Types of working capital (WC)

Most businesses experience seasonal or cyclical fluctuations. For example, construction firms have peaks in the spring and summer, retailer's peak around Christmas, and manufacturers who supply both construction companies and retailers follow similar patterns. Similarly, all businesses must build up current assets when the economy is strong, but they then sell off inventories and reduce receivables when the economy slacks off. Hence, based on time, working capital may be classified into two important types as permanent and temporary working capital (Paramasivan and Subramanian, 2009) and briefly discussed below.

Permanent Working Capital: it's also known as fixed working capital and it refers to a minimum amount of investment in all working capital which is required at all times to carry out minimum level of business activities (Brigham and Houston, 2003). In other words, it represents the current assets required on a continuing basis over the entire year. Further, working capital has a limited life and usually not exceeding a year, in actual practice some part of the investment in that is always permanent. Since firms have relatively longer life and production does not stop at the end of a particular accounting period some investment is always locked up in the form of raw materials, work-in progress, finished stocks, book debts and cash. Investment in these components of working capital is simply carried forward to the next year. This minimum level of investment in current assets that is required to continue the business without interruption is referred to as permanent working capital (Fabozzi and Peterson, 2003 p. 679). It's financed through long term debt and common stock.

Temporary Working Capital: it's also known as the circulating or transitory working capital. This is the amount of investment required to take care of the fluctuations in the business activity. Fabozzi and Peterson (2003 p. 678) they defined as a rise of working capital from seasonal fluctuations in a firm's business. Because firms do not have to maintain this form of working

capital throughout in the year, or year after year, it may be better to use short-term (bank credit) rather than long-term sources of capital to satisfy temporary needs. In other words, it represents additional current assets required at different times during the operating year. For example, extra inventory has to be maintained to support sales during peak sales period (seasonal working capital). Similarly, receivable also increase and must be financed during period of high sales. On the other hand, investment in inventories, receivables and the like will decrease in periods of depression (special working capital). Temporary working capital fluctuates over time with seasons and special needs of firm operations, whereas, permanent WC changes as firms' sizes increases overtime. Further, temporary WC is financed by short term debt.

2.2.3. Factors determining working capital requirements

The total working capital requirement of a firm is determined by a wide variety of factors. These factors affect different organizations differently and they also vary from time to time. In general factors influencing working capital decisions of a firm may be classified as two groups, such as internal factors and external factors (Paramasivan and Subramanian, 2009). The internal factor includes nature of business, size of business, firm's product policy, credit policy, and growth and expansion of business. The external factors include business fluctuations, changes in the technology, infrastructural facilities, import policy and the taxation policy. These factors are discussed in brief in the following lines:

Internal factors: These are factors that the companies will take in to account while determining the optimal level of working capital needed for the business concern by looking inherent factors related to the business and they are presented as follows:

Nature and size of the business: The working capital requirements of a firm are basically influenced by the nature and size of the business. Size may be measured in terms of the scale of operations. A firm with larger scale of operations will need more working capital than a small firm. Similarly, the nature of the business influences the working capital decisions. Trading and financial firms have less investment in fixed assets. But require a large sum of money to be invested in working capital. Retail stores, business units require larger amount of working capital, whereas, public utilities need less working capital and more funds to invest in fixed assets.

Firm's production policy: The firm's production policy (manufacturing cycle) is an important factor to decide the working capital requirement of a firm. The production cycle starts with the purchase and use of raw material and completes with the production of finished goods. On the other hand, production policy is uniform production policy or seasonal production policy, also influences the working capital decisions. If the company maintains continues or uniform production policy, there is a need of regular working capital. If the production policy of the company depends upon the situation or conditions like season, working capital requirement will depend upon the conditions laid down by the company and changing demand.

Firm's credit policy: The credit policy of a firm influences credit policy of working capital. A firm following liberal credit policy to all customers requires funds. On the other hand, the firm adopting strict credit policy and grant credit facilities to few potential customers will require less amount of working capital.

Growth and expansion of business: Working capital requirement of a business firm tend to increase in correspondence with growth in sales volume and fixed assets. A growing firm may need funds to invest in fixed assets in order to sustain its growing production and sales. This will, in turn, increase investment in current assets to support increased scale of operations. Thus, a growing firm needs additional funds continuously.

External factors: Sometime firm's working capital requirement can be affected by external factor which will not be controlled through the business internal administration and management process and they are discussed as follows:

Business fluctuations: Most firms experience fluctuations in demand for their products and services. These business variations affect the working capital requirements. When there is an upward swing in the economy, sales will increase, correspondingly, the firm's investment in inventories and book debts will also increase. Under boom, additional investment in fixed assets may be made by some firms to increase their productive capacity. This act of the firm will require additional funds. On the other hand, when, there is a decline in economy, sales will come down and consequently the conditions, the firm try to reduce their short-term borrowings. Similarly, the seasonal fluctuations may also affect the requirement of working capital of a firm.

Changes in the technology: The technological changes and developments in the area of production can have immediate effects on the need for working capital. If the firm wish to install a new machine in the place of old system, the new system can utilize less expensive raw materials, the inventory needs may be reduced there by working capital needs may be affected.

Taxation policy: The amount of tax to be paid is determined by the prevailing tax regulations and very often taxes have to be paid in advance. Hence, the tax policies of the Government will influence the working capital decisions. If the Government follows regressive taxation policy, i.e. imposing heavy tax burdens on business firms, they are left with very little profits for distribution and retention purpose. Consequently, the firm has to borrow additional funds to meet their increased working capital needs. When there is a liberalized tax policy, the pressure on working capital requirement is minimized. In general, if tax liability increases, it will lead to an increase in the level of working capital and vice versa. In summary, firm's financial manager should have to take in to account the above determinants while deciding on the optimal level of working capital needed and the timing for day to day activities of the business operations.

2.2.4. Working capital management

In order to understand the importance of working capital one has to understand the working capital cycle which is described as the core for working capital management. Arnold (2008, p.529-530) said that working capital cycle includes all the major dimensions of business operations. It is quite clear that a bad management of a single account in this cycle might cause a big trouble for the non-living entity which might leads to its death. Therefore, the management of working capital and balance between components of working capital is extremely important for the smooth running of business.

Similarly, the basic aim of financial management is to maximize the wealth of the shareholders and in order to achieve this; it is necessary to generate sufficient sales and profit. However, sales do not convert in to cash instantly. The time between purchase of inventory items (raw material or merchandise) for the production and their conversion into cash is known as operating cycle or working capital cycle.

Therefore, working capital management deals with the act of planning, organizing and controlling the components of working capital (current asset and liability) like cash, bank balance, inventory, receivables, payables, overdraft and short-term loans (Paramasivan and Subramanian, 2009). Weston and Brigham (1977) defined working capital management as it is concerned with the problems that arise in attempting to manage the current asset, current liabilities and the interrelationship that exists between them. Whereas, Smith (1980) noted that working capital management is the administration of the whole aspects of both current assets and current liabilities.

Generally, working capital management involves two basic questions: first, what is the appropriate amount of current assets, both in total and for each specific account, and second, how should those current assets be financed? Therefore, a brief description regarding the various issues involved in the management of each of working capital components is discussed as follows:

2.2.4.1. Receivable management

Businesses have either products or services to sell to their customers; they also want to maximize their sales. So, in order to increase the level of their sales they use different policies to attract customers and one of them is offering a trade credit. Trade credit basically refers to a situation where a company sells its product now to receive the payment at a specified date in the future. Fabozzi and Peterson (2003 p. 651) mentioned that when a firm allows customers to pay for goods and services at a later date, it creates accounts receivable or refers to trade credit. Account receivables (trade credit) also have opportunity cost associated with them, because company can't invest this money elsewhere until and unless it collects its receivables. More account receivables can raise the profit by increasing the sale but it is also possible that because of high opportunity cost of invested money in account receivables and bad debts the effect of this change might turn difficult to realize. Hence, it calls for careful analysis and proper management is compulsory task of company's credit managers. Therefore, the goal of receivables management is to maximize the value of the firm by achieving a trade-off between risk and profitability. For this purpose, the finance manager has to obtain optimum (non-maximum) value of sales, control the cost of receivables, cost of collection, administrative expenses, bad debts and opportunity cost of funds blocked in the receivables. Further, financial manager has to maintain the debtors at

minimum according to the credit policy offered to customers, offer cash discounts suitably depending on the cost of receivables and opportunity cost of funds blocked in the receivables (Gallagher and Joseph, 2000). Indeed trade credit management has to look through cost and benefit analysis including credit and collection policies of companies in maintaining receivable.

Monitoring account receivable

Companies can monitor how well accounts receivable are managed using aging schedules and financial ratios. In aging analysis, a company's account receivables are classified into different categories based on number of days they are past due after sales such as 1 to 30 days, 31 to 40 days, 41 to 50 days and so on and it helps managers to get a more detailed picture of collection efforts. The schedule can represent the receivables according to how many there are in each age group or according to the total dollars the receivables represent in each age group. Hence, the higher the number of accounts or dollars in the shortest-term groups, the faster the collection or efforts are made (Fabozzi and Peterson, 2003 p. 660).

Whereas, financial ratio can be used to get an overall picture of how fast credit manager collect accounts receivable. Therefore, the average collection period (ACP) represents the average number of days for which a firm has to wait before its debtors are converted into cash. It is calculated by dividing accounts payable by purchases and multiplying the result by 365 and written as:

Average collection period (ACP) = Receivables / (Sales/365)

This ratio measures the quality of debtors. A short collection period implies prompt payment by debtors. It reduces the chances of bad debts. Similarly, a longer collection period implies too liberal and inefficient credit collection performance. It is difficult to provide a standard collection period of debtors (Brigham and Houston, 2003, p. 691).

2.2.4.2. Cash management

Brealey and Myers (2003) indicated that cash is the oxygen which enhances a survival and prosperity, and is the basic indicator of business health. Cash includes both cash in hand and cash at bank. A company needs cash for transaction and speculation purposes. It also provides the

liquidity to the company but the question is why company should have cash reserves when it has an option to utilize it by investing it in short term securities. The answer to this question is that it provides more liquidity than marketable securities. Cash should be considered as an inventory which is very important for the smooth running of the business. No doubt a company can earn some interest if cash is invested in some marketable securities but when it has to pay its liabilities it needs cash and in order to convert marketable securities into cash it has to pay some transaction cost. So, there is a fair possibility that cost of holding marketable securities might exceed their benefit.

Holding a cash reserve is justifiable for all the businesses but how much cash a company should have? It is a big and very important question because too little cash might push a company in a situation where it will not be able to pay its current liabilities. On the other hand, having high cash balance will not produce any return. The minimum level of cash reserve depends on the ability of a company to raise cash when it is required, future cash needs and companies will to keep cash to safeguard future unexpected events. Companies also want to have enough cash reserve to exploit the investment opportunities available in the future but having a very high level of cash reserve can turn out to be an idle resource. The maximum level of cash reserve depends on investment opportunities available in the future, return on these investments and transaction cost of making the investments (Gallagher and Joseph, 2000).

2.2.4.3. Accounts Payables management

Account payable is defined as a debt arising from credit sales and recorded as an account receivable by the seller and as an account payable by the buyer. Firms generally make purchases from other firms on credit, recording the debt as an account payable. Accounts payable is the largest single category of short-term debt, representing about 40 percent of the current liabilities of the average nonfinancial corporation (Brigham and Houston 2003, p. 720)

Arnold (2008 pp.479-482) described that account payable is the cheapest and simplest way of financing an organization. Accounts payable are generated when a company purchases some products for which payment has to be made no later than a specified date in the future. Accounts payable are a part of all the businesses and have some advantages associated with it e.g. it is available to all the companies regardless of the size of the company and earlier payment can

bring cash discount with it. Companies not only need to manage their account payables in a good way but they should also have the ability to generate enough cash to pay the mature account payables. This is because, in case if a company fails to generate enough cash to fulfil the mature account payables then such a situation will pass the negative signal to the market and it will directly affect the share price, relationship with creditors and suppliers. Hence, in this situation it will be difficult for the company to raise more funds by borrowing money or get more supplies from the suppliers. Such a financial distress will lead to the death of the non-living entity.

Therefore, one way of monitoring accounts payables is by the Average payment period (APP) or day's payables outstanding ratio which measures the average length of time between the purchase of materials or labour and the payment of cash for supplies (Brigham and Houston 2003, p. 720). It can be calculated as:

Average Payment period (APP) = Payables / (Cost of Goods Sold/ 365) In general, if a company has a small number of accounts payable days, it could mean that the company is paying the bills very early or is taking advantage of purchase discounts (requiring early payment). On the other hand, if a company has a large number of accounts payable days, it could mean that the company has low cash flows not sufficient to pay bills on time.

2.2.4.4. Short term borrowings

These are the short-term financing instruments which a company uses and it includes bank overdraft, commercial papers, bill of exchange, and loan from commercial finance companies and the like. All these liabilities have a maturity less than one year (Arnold, 2008 pp.474-79). One reason for which company should have a proper working capital policy is short term borrowings because a poor working capital policy might cause the cash distress as a result company might not be able to pay its short-term borrowing liability. The consequence of this default can be destructive for a business because after such a situation a company will not be able to win the trust of other financial institutions to borrow more money, market will perceive this situation in a negative way and the value of the share will fall, suppliers and creditors might hesitate to enter in a new contract.

2.2.4.5. The cash conversion cycle (CCC)

Cash conversion cycle is a time span between the payment for raw material and the receipt from the sale of goods. Weston and Brigham (1977, P. 690) mentioned that firms typically follow a cycle in which companies purchase inventory, sell goods on credit, and then collect accounts receivable. For a manufacturing company it can be defined it more precisely as, a time for which raw material is kept for the processing plus the time taken by the production process. And plus the time for which finished goods are kept and sold, including the time taken by the debtors to pay their liability, minus the maturity period of account payable. By this definition it is quite clear that longer cash conversion cycle required more investment in the current assets. Furthermore, good cash conversion cycle (depend up on companies target) is helpful for the organization to pay its obligations at a right time which will enhance the goodwill of a company. On the other hand, company with poor cash conversion cycle will not able to meet its current financial obligations and will face financial distress. Cash conversion cycle is also used as a gauge to measure the aggressiveness of working capital policy. It is believed that longer cash conversion cycle corresponds to defensive working capital policy and shorter cash conversion cycle corresponds to aggressive working capital policy (Arnold, 2008, pp.530-31). In order to calculate the CCC one has to first calculate average collection period, inventory turnover in day and average payment period (as discussed previously in this section). In deed the formula used to compute cash conversion cycle is represented as follows:

CCC = Average collection period + Inventory Turnover in day – Average Payment Period

In general, depend up on the company policy lowering CCC without increasing cost and reducing sales may be preferable for the firm to have a good position of liquidity.

2.2.5. Working capital policy

Working capital policy can be best described as a strategy which provides the guideline to manage the current assets and current liabilities in such a way that it reduces the risk of default (Afza & Nazir, 2007). Working capital policy is mainly focusing on the liquidity of current assets to meet current liabilities. Liquidity is very important because, if the level of liquidity is too high then a company has lot of idle resources and it has to bear the cost of these idle

resources. However, if liquidity is too low then it will face lack of resources to meet its current financial liabilities (Arnold, 2008). Current assets are key component of working capital and the WCP also depends on the level of current assets against the level of current liabilities (Afza & Nazir, 2007). On this base the literature of finance classifies working capital policy into three categories as defensive or hedging, aggressive and conservative working capital policy (Arnold, 2008 pp.535-536) and discussed as follows:

Defensive policy: Company follows defensive policy by using long term debt and equity to finance its fixed assets and major portion of current assets. Under this approach, the business concern can adopt a financial plan which matches the expected life of assets with the expected life of the sources of funds raised to finance assets (Paramasivan and Subramanian, 2009). Inventory expected to be sold in 30 days could be financed with a 30- day bank loan; a machine expected to last for 5 years could be financed with a 5-year loan; a 20-year building could be financed with a 20 year mortgage bond; and so forth (Weston and Brigham, 1977, P. 716). Defensive policy reduces the risk by reducing the current liabilities but it also affects

Profitability because long term debt offers high interest rate which will increase the cost of financing (Arnold, 2008 p.530). This means a company is not willing to take risk and feel it appropriate to keep cash or near cash balances, higher inventories and generous credit terms. Mostly companies that are operating in an uncertain environment prefer to adopt such a policy because they are not sure about the future prices, demand and short-term interest rate. In such situation it is better to have a high level of current assets. Which means, keeping higher level of inventory in the stock, to meet sudden rise in demand and to avoid the risk of stoppage in production.

This approach gives a longer cash conversion cycle for the company. It also provides the shield against the financial distress created by the lack of funds to meet the short-term liability but as the researcher discussed earlier long-term debt have high interest rate which will increase the cost of financing. Similarly, funds tied up in a business because of generous credit policy of company and it also have opportunity costs. Hence, this policy might reduce the profitability and the cost of following this policy might exceed the benefits of the policy (Arnold, 2008 p.530).

Aggressive policy: Companies can follow aggressive policy by financing its current assets with short term debt because it gives low interest rate. However, the risk associated with short term debt is higher than the long-term debt. Paramasivan and Subramanian (2009) pinpointed that in aggressive policy the entire estimated requirement of current assets should be financed from short-term sources and even a part of fixed assets financing be financed from short- term sources. This approach makes the finance mix riskier, less costly and more profitable. Furthermore, few finance managers take even more risk by financing long term asset with short term debts and this approach push the working capital on the negative side. Managers try to enhance the profitability by paying lesser interest rate but this approach can be proved very risky if the short-term interest rate fluctuates or the cash inflow is not enough to fulfil the current liabilities (Weston and Brigham, 1977, P. 716). Therefore, such a policy is adopted by the company which is operating in a stable economy and is quite certain about future cash flows. A company with aggressive working capital policy offers short credit period to customers, holds minimal inventory and has a small amount of cash in hand. This policy increases the risk of default because a company might face a lack of resources to meet the short-term liabilities but it also gives a high return as the high return is associated with high risk (Arnold, 2008 p.536).

Conservative policy: Some companies want neither to be aggressive by reducing the level of current assets as compared to current liabilities nor to be defensive by increasing the level of current assets as compared to current liabilities. So, in order to balance the risk and return these firms are following the conservative approach. It is also a mixture of defensive WCP and aggressive WCP. In this approach temporary current assets, assets which appear on the balance sheet for short period will be financed by the short-term borrowings and long-term debts are used to finance fixed assets and permanent current assets (Weston and Brigham, 1977 P. 718). Thus, the follower of this approach finds the moderate level of working capital with moderate risk and return. It is called as "low profit low risk" concept (Paramasivan and Subramanian, 2009). Moreover, this policy not only reduces the risk of default but it also reduces the opportunity cost of additional investment in the current assets. On the other hand, apart from the above points the level of working capital also depends on the level of sale, because, sales are the source of revenue for every companies.

Sales can influence working capital in three possible ways (Arnold, 2008 p.534-35).

- As sales increase working capital will also increase with the same proportion so, the length of cash conversion cycle remains the same.
- As the sales increase working capital increase in a slower rate.
- As the sales increase the level of working capital rises in misappropriate manner i.e.

The working capital might raise in a rate more than the rate of increased in the sale. Company with stable sale or growing sale can adopt the aggressive policy because it has a confidence on its future cash inflows and is confident to pay its short-term liabilities at maturity. On the other hand, a company with unstable sale or with fluctuation in the sale can't think of adopting the aggressive policy because it is not sure about its future cash inflows. In such a situation adoption of aggressive policy is similar to committing a suicide. Hence, searching other method might be the best choice.

2.2.6. Working capital management, profitability and liquidity

Jose et al (1996) showed that day-to-day management of a firm's short-term assets and liabilities plays an important role in the success of the firm. Firms with growing long-term prospects and healthy bottom lines do not remain solvent without good liquidity management. Profitability is more important because profit can usually be turned into a liquid asset, and that liquidity is also important but does not mean that the company is profitable.

Gitman (1999), while acknowledging the relative importance of both, submits that liquidity is more important because it has to do with the immediate survival of the company. Profitability tells whether the business is sustainable while liquidity tells whether the business has enough cash to pay its obligations. He cited the examples of two computer companies, Gateway and Dell. According to him, gateway survived years of losses because it was very liquid. Despite years of losses, it functioned because it had enough "liquid" to survive. Dell survived for many years because it was profitable even though it had billions of dollars in debt. Therefore, he submits that both are important, and that neither measure alone can give a true picture of any company's ability to continue. However, he states that at some point, if a company does not gain profitability, it will fail.

For Gitman (1999) in addition to profitability, liquidity management is vital for ongoing concern. Jose et al (1996) suggests optimum liquidity position, which is minimum level of liquidity necessary to support a given level of business activity. He says it is critical to deploy resources between

working capital and capital investment, because the return on investment is usually less than the return on working capital investment. Therefore, deploying resources on working capital as much as to maintain optimum liquidity position is necessary. Then he sets up the relationship between conversion cycle and minimum liquidity required such that the cycle lengthens, the minimum liquidity required increases, and vice versa.

2.2.7. Relationship between liquidity and profitability

Investors are always concerned with the firm's ability to generate, maintain, and increase income. Profitability can be measured in many differing but interrelated dimensions. First there is the relationship of a firm's profits to revenue, that is, the residual return on the firm per sales dollar. Another measure, return on asset (ROA), relates profits to the investment required to generate them. Analysis of income is of vital concern to stock holders because they derive revenue in the form of dividends. Further, increased profits can cause an increase in market price, leading to capital gains. A company's ability to sustain its short-term debt-paying ability is important to all users of financial statements. If the company cannot keep a long-term debt-paying ability, nor will it able to satisfy its stockholders. Even a very profitable company will find itself bankrupt if it fails to meet its obligations to short-term creditors. The ability to pay current obligations when they due is also related to the cash generating ability of the company.

Analysing the short-term debt-paying ability of the company, reveal a close relationship between the current assets and the current liabilities. Generally, the current liabilities will be paid with cash generated from the current assets. The profitability of the firm does not determine the short-term debt-paying ability. In other words, using accrual accounting, the company may report very high profits but may not have the ability to pay its current bills because it lacks available funds. If the entity reports a loss, it may still be able to pay short-term obligations. The Liquidity contra Profitability Principle, there is a differentiation between liquidity and profitability; gaining more of one ordinarily means concede some of the other. The liquidity as a determinant of profitability is similar to that considered in research on profitability, which classified as management controllable internal determinants. On the other hand, to choose short term investment with low profitability i.e. low return and high liquidity. However, creditors of the company want managers to invest in short term assets because they are easy to liquidate but it reduces the profitability because of low interest rate. On the other hand, if the managers prefer the long-term investment to enhance the profitability

then in case of default lenders or creditors have to wait longer and bear some expense to sell these assets because the liquidity of long-term investment is low. In reality, none of the managers choose any of these two extremes instead they want to have a balance between profitability and liquidity which will fulfil their need of liquidity and gives required level of profitability (Arnold, 2008).

2.2.8. Profitability and liquidity measures

Profitability ratio is a measure of profit generated from the business and is measured in percentage terms e.g. percentage of sales, percentage of investments, percentage of assets. High percentage of profitability plays a vital role to bring external finance in the business because creditors, investors and suppliers do not hesitate to invest their money in such a company (Fabozzi and Peterson (2003 p. 733). There are several measures of profitability which a company can use. Few measures of profitability are discussed here:

Net profit margin (NPM): It calculates the percentage of each sale dollar remains after deducting interest, dividend, taxes, expenses and costs. In other words, it calculates the percentage of profit a company is earning against its per dollars sale. Higher value of return on sale shows the better performance (Gitman, 1999).

NPM = (Earnings available for common stakeholder / Net sales) *100

Return on asset (ROA): This ratio explains that how efficient a company is to utilize its available assets to generate profit. It calculates the percentage of profit a company is earning against per dollar of assets (Weston and Brigham (1977, P. 101). The higher value of ROA shows the better performance and it can be computed as follows:

ROA = (Earnings Available for Common Stockholders / Total Asset) *100

Gross operation profit (GOP): this ratio explains that how efficient a company is to utilize its operating assets. This ratio calculates the percentage of profit earned against the operating assets of the company (Weston and Brigham, 1977, P. 101).

Gross operating profit = (Sales – COGS) / (Total asset –financial asset)

On the other hand, Liquidity ratio measures the short-term solvency of financial position of a firm. These ratios are calculated to comment upon the short-term paying capacity of a concern or the firm's ability to meet its current obligations (Fabozzi and Peterson, 2003 p. 729) and they are discussed as follows:

2.2.9. Nature of manufacturing companies

In its earliest form, manufacturing was usually carried out by a single skilled artisan with assistants and training was by apprenticeship. In much of the pre-industrial world the guild system protected the privileges and trade secrets of urban artisans. Before the industrial revolution, most manufacturing in the world was occurred in rural areas, where household-based manufacturing served as a supplemental subsistence strategy to agriculture (and continues to do so in places). Entrepreneurs organized a number of manufacturing households into a single enterprise through the putting-out system. However, the market place of the twenty-first century is evolving into one of merging national markets, fragmented consumer markets, and rapidly changing product technologies in manufacturing industry. These changes are driving firms to compete, simultaneously, along several different dimensions: design, manufacturing, distribution, communication, sales and others. Although manufacturing has not been utilized as a competitive weapon historically, the market place of the twenty first century will demand that manufacturing assume a crucial role in the new competitive arena.

Progress in human society has been accomplished by the creation of new technologies in deferent industries and that is why last few years have witnessed unparalleled changes throughout the world. Rapid changes in the markets demand drastically shortened product life cycles and high-quality products at competitive prices. Customers now prefer a large variety of products and this phenomenon has inspired manufacturing firms to look for progressive computerized automation in various processes. Thus, mass production is being replaced by low-volume, high-variety production so as to maximize sale and there by profitability.

Manufacturing firms have recognized the importance of flexibility in the manufacturing system to meet the challenges posed by the pluralistic market. The concept of flexibility in manufacturing systems has attained significant importance in meeting the challenges for a variety of products of shorter lead-times, together with higher productivity and quality.

2.3. Review of empirical studies

The previous section was presented the theories of working capital management focusing on components, types of working capital, determinant of working capital requirement including and working capital policies. This section reviews the empirical studies on the impact of working capital management on firms' profitability.

There are a number of studies that assessed working capital management from the perspective of both developing and developed nations. For example, pioneer study by Mueller (1953) about corporate working capital and liquidity may be considered as the best-known study in this field (Samiloglu and Demirgunes, 2008). The difficulty, compounded due to the lack of any uniformity in definition of what is meant by "working capital" motivated him to study on corporate working capital and liquidity literature. Hence, the study was conducted using qualitative method to answer three problems towards which the paper was directed. Thus are; "what is meant by corporate working capital, liquidity and sources of liquidity?" Indeed, the study concluded that the term "working capital" should be coextensive with current assets and described by it functions as revolving capital. Further, the study noted that the nature of an asset is determined by its function and not by its name. On the other hand, the study pinpointed that the ordinary use of the term "liquidity" makes it more a problem of marketing than accounting and finance and hence, liquidity is a consequence of the dynamic function of satisfying social wants. Finally, the study concluded that, it is through working capital that source of liquidity is attained. Grablowsky (1976) examined mismanagement of accounts receivable by small business in US firm and its impacts on success. Prior to his study in 1975 he was conducted a survey about US firms credit policies and reported that most firms moved an account from active in-house collection to the bad debt file between four to twelve months after the due date.

The survey also reveals that even if a customer became a slow payer or was occasionally delinquent, many retailers continued to extend credit to him or her. These signify the existence of collection problems in the US. Depend up on the above problem he was interested to study on the relationship of such policy on firm's success. Grablowsky (1976) has showed as there is a significant relationship between various success measures and the employment of formal working capital policies and procedures. On similar study, Walker and Petty (1978) mentioned that managing cash flow and cash conversion cycle is a critical component of overall financial

management for all firms, especially those who are capital constrained and more reliant on short-term sources of finance. Long et al. (1993) developed a model of trade credit in which asymmetric information leads good firms to extend trade credit so that buyers can verify product quality before payment.

Their sample contained all industrial (SIC 2000 through 3999) firms with data available from comp stat for the three-year period ending in 1987 and used regression analysis. They defined trade credit policy as the average time receivables are outstanding and measured this variable by computing each firm's days of sales outstanding, as accounts receivable per dollar of daily sales. To reduce variability, they averaged days of sales outstanding and all other measures over a three-year period. They found evidence consistent with the model. The findings were suggested that producers may increase the implicit cost of extending trade credit by financing their receivables through payables and short-term borrowing.

On the other hand, Peel and Wilson (1996) examined working capital and financial management in the small firm sector of UK. They were primarily interested to investigate whether the cause of corporate failure is, due to lack of short-term financing or inefficient management of working capital. As a result, the researcher used quantitative survey method and concluded that for small and growing businesses, an efficient working capital management is a vital component of success and survival; i.e. both profitability and liquidity. They further assert that smaller firms should adopt formal working capital management routines in order to reduce the probability of business closure, as well as to enhance business performance. Given these peculiarities, they have stressed the efficient management of working capital, and more recently good credit management practice as being pivotal to the health and performance of the small firm sector. Smith and Begemann (1997) emphasized that those who promoted working capital theory shared that profitability and liquidity comprised the salient goals of working capital management. The problem arose because, the maximization of the firm's returns could seriously threaten its liquidity, and the pursuit of liquidity had a tendency to dilute returns. This article evaluated the association between traditional and alternative working capital measures and return on investment (ROI), specifically in industrial firms listed on the Johannesburg Stock Exchange (JSE). The problem under investigation was to establish whether the more recently developed alternative working capital concepts showed improved association with return on investment to

that of traditional working capital ratios or not. Results indicated that there were no significant differences amongst the years with respect to the independent variables. The results of their stepwise regression corroborated that total current liabilities divided by funds flow accounted for most of the variability in Return on Investment (ROI).

The statistical test results showed that a traditional working capital leverage ratio, current liabilities divided by funds flow, displayed the greatest associations with return on investment. Well known liquidity concepts such as the current and quick ratios registered insignificant associations whilst only one of the newer working capital concepts, the comprehensive liquidity index, indicated significant associations with return on investment. Shin and Soenen (1998) researched the relationship between working capital management and value creation for shareholders. The standard measure for working capital management is the cash conversion cycle (CCC). Cash conversion period reflects the time span between disbursement and collection of cash. It is measured by estimating the inventory conversion period and the receivable conversion period, less the payables conversion period. In their study, the researchers used net-trade cycle (NTC) as a measure of working capital management. NTC is basically equal to the cash conversion cycle (CCC) where all three components are expressed as a percentage of sales. NTC may be a proxy for additional working capital needs as a function of the projected sales growth.

They examined this relationship by using correlation and regression analysis, by industry, and working capital intensity. Using a COMPUSTAT sample of 58,985 firm years covering the period 1975-1994, they found a strong negative relationship between the length of the firm's net-trade cycle and its profitability. Based on the findings, they suggest that one possible way to create shareholder value is to reduce firm's NTC. To test the relationship between working capital management and corporate profitability, Deloof (2003) used a sample of 1,009 large Belgian non-financial firms for a period of 1992-1996. By using correlation and regression tests, he found significant negative relationship between gross operating income and the number of days accounts receivable, inventories, and accounts payable of Belgian firms. Based on the study results, he suggests that managers can increase corporate profitability by reducing the number of day's accounts receivable and inventories. De Chazal (1998) revealed that 60% enterprises suffer from cash flow problems. Narasimhan and Murty (2001) stress on the need for many industries

to improve their return on capital employed by focusing on some critical areas such as cost containment, reducing investment in working capital and improving working capital efficiency.

Ghosh and Maji (2003) attempted to examine the efficiency of working capital management of Indian cement companies during 1992 - 93 to 2001 - 2002. They calculated three index values; performance index, utilization index, and overall efficiency index to measure the efficiency of working capital management, instead of using some common working capital management ratios. By using regression analysis and industry norms as a target efficiency level of individual firms, Ghosh and Maji (2003) tested the speed of achieving that target level of efficiency by individual firms during the period of study and found that some of the sample firms successfully improved efficiency during these years.

Other study by, Lyroudi and Lazaridis, (2000) used Greek food industry to examine the cash conversion cycle (CCC) as a liquidity indicator of the firms and tried to determine its relationship with the current and the quick ratios. Hence, the main objective of the study was to investigate the implications of the CCC in terms of profitability, in-debtness and firm size. The results of their study indicate study showed that there is significant positive relationship between the cash conversion cycle and the traditional liquidity measures of current and quick ratios. The cash conversion cycle also positively related to the return on assets and the net profit margin but had no linear relationship with the leverage ratios.

Conversely, the current and quick ratios had negative relationship with the debt to equity ratio, and a positive with the times interest earned ratio. Finally, the study concluded as there is no difference between the liquidity ratios of large and small firms. In the same country, Lazaridis and Tryfonidis (2006) investigated the relationship between working capital management and corporate profitability of listed company in the Athens Stock Exchange. They conducted a penal study by using a sample of 131 firms listed on the Athens Stock Exchange for the period of 2001–2004. The result from regression analysis showed that, there is statistically significant relationship between profitability, measured through gross operating profit, and the cash conversion cycle and its components (accounts receivables, accounts payables, and inventory). Based on the results, they concluded that managers could create value for shareholders by

handling correctly handling the cash conversion cycle and keeping each different component to an optimum level.

Raheman and Nasr (2007) studied the effect of different variables of working capital management including average collection period, inventory turnover in days, average payment period, cash conversion cycle, and current ratio on the net operating profitability of Pakistani firms. They selected a sample of 94 Pakistani firms listed on Karachi Stock Exchange for a period of six years from 1999 - 2004 and found a strong negative relationship between variables of working capital management and profitability of the firm. They found that as the cash conversion cycle increases, it leads to decreasing profitability of the firm and managers can create a positive value for the shareholders by reducing the cash conversion cycle to a possible minimum level.

Garcia-Teruel and Martinez-Solano (2007) collected a panel of 8,872 small to medium-sized enterprises (SMEs) from Spain covering the period 1996 - 2002. They tested the effects of working capital management on SME profitability using the panel data methodology. The results, which are robust to the presence of endogenetic, demonstrated that managers could create value by reducing their inventories and the number of days for which their accounts are outstanding. Moreover, shortening the cash conversion cycle also improves the firm's profitability. On the other hand, Singh and Pandey (2008) had an attempt to study the working capital components and the impact of working capital management on profitability of Hindalco Industries Limited for period from 1990 to 2007.

Results of the study showed that current ratio, liquid ratio, receivables turnover ratio and working capital to total assets ratio had statistically significant impact on the profitability of Hindalco Industries Limited. Samiloglu and Demirgunes (2008) study was aims to investigate the effect of working capital management on firm profitability. In line with this aim, a sample of 5, 843 Turkish listed manufacturing companies in Istanbul Stock Exchange (ISE) for the period of 1998-2007 are analyzed under a multiple regression model. Empirical results show that, for the mentioned sample and period, accounts receivables period, inventory period and leverage significantly and negatively affect profitability of Turkish manufacturing firms, while firm growth (in sales) significantly and positively affect firms profitability. However, it is also

concluded that cash conversion cycle, size and fixed financial assets have no statistically significant effects on firm profitability of Turkish manufacturing firms for the period of 1998-2007.

Afza and Nazir (2009) was made an attempt in order to investigate the traditional relationship between working capital management policies and a firm's profitability for a sample of 204 non-financial firms listed on Karachi Stock Exchange (KSE) for the period 1998-2005. The survey study found significant different among their working capital requirements and financing policies across different industries. Moreover, regression result found a negative relationship between the profitability of firms and degree of aggressiveness of working capital investment and financing policies. They suggested that managers could increase value if they adopt a conservative approach towards working capital investment and working capital financing policies.

Falope and Ajilore (2009) used a sample of 50 Nigerian quoted non-financial firms for the period 1996 -2005. Their study utilized panel data econometrics in a pooled regression, where time-series and cross-sectional observations were combined and estimated. They found a significant negative relationship between net operating profitability and the average collection period, inventory turnover in days, average payment period and cash conversion cycle for a sample of fifty Nigerian firms listed on the Nigerian Stock Exchange. Furthermore, they found no significant variations in the effects of working capital management between large and small firms. On the same year, Mathuva (2009) examined the influence of working capital management components on corporate profitability by using a sample of 30 firms listed on the Nairobi Stock Exchange (NSE) for the periods 1993 to 2008. He used Pearson and Spearman's correlations, the pooled ordinary least square (OLS), and the fixed effects regression models to conduct data analysis. The key findings of his study were that: i) there exists a highly significant negative relationship between the time it takes for firms to collect cash from their customers (accounts collection period) and profitability, ii) there exists a highly significant positive relationship between the period taken to convert inventories into sales (the inventory conversion period) and profitability, and iii) there exists a highly significant positive relationship between the time it takes the firm to pay its creditors (average payment period) and Profitability. Amarjit et. al. (2010) investigated the relationship between the working capital management and the

firms' profitability for a sample of 88 American manufacturing companies listed on the New York Stock Exchange for the period of 3 years from 2005- 2007. They were primarily sought to extend Lazaridis and Tryfonidis's (2006) findings by testing with the same hypothesis. They found statistically significant relationship between the cash conversion cycle and profitability, measured through gross operating profit. The study concluded that managers can create profits for their companies by handling correctly the cash conversion cycle and by keeping accounts receivables at an optimal level.

Finally, Wajahat and Hammad (2010) conducted the study with the purpose of exploring the relationship between working capital policy and profitability of Swedish firms. Furthermore, this study was aimed to investigate the nature of relationship between working capital policy and component of cash conversion cycle. For the purpose of their study the researchers used a sample of 37 listed companies in the OMX Stockholm stock exchange over the period of five years from 2004-2008 and six regressions were run on 185 observations in SPSS software. The result of regression analysis shows that managers can't change the level of profitability by adopting any of the working capital policy i.e. there exist no relationship between working capital policy and profitability.

2.3 Conclusions and Identification of Knowledge Gap

In general, the literature review indicates that working capital management has impacts on profitability of a firm. Having optimum level of working capital components will help firms to meet its day to day operations and vital for maximizing value and profitability. Hence, the cash conversion is the most important measure of working capital management efficiency of a firm. Indeed, keeping smaller cash conversion cycle depend up on firms working capital policy will helps a firm to increase profitability.

Even if, the literature review indicated that working capital management has impact on the profitability of the firm but there still is ambiguity regarding the appropriate variables that might serve as proxies for working capital management as a whole. This problem was creating misinterpretation of working capital meaning by earlier researchers like Mueller (1953) and Grablowsky (1976). Hence, literature review consisting some of previous studies though limited in scope, methodology and overall output. Likewise, lack of not incorporating all relevant and

most important variables (independent and control) used to measure both working capital and profitability, it creates difficulty for comparability of studies conduct in similar areas. Moreover, studies regarding working capital are mostly related with improving models to determine optimal liquidity and cash balance, rather than analysing underlying reasons of relationships between liquidity, working capital management practices and profitability. Therefore, its difficulty for who read those studies to answer why? As a result, first the researcher tried to identify major relevant variables which are missed or not included in previous studies. Accordingly, unlike the previous studies the researcher run the regression for gross operating profit together with all selected major relevant variables to see their impact on firm's profitability. Here by including new variables (current ratio and sales growth as a measure of liquidity and profitability others usual), running the regression by including all variables would enhance the finding and fill the problem of missing important variables which was observed in previous studies. In general the researcher believed that, the above actions would fill the gap identified in thus study.

CHAPTER THREE

3. RESEARCH METHODOLOGY

The previous chapter indicated the literature on the impacts of working capital management on firms' profitability, and pointed out that there is limited research in developing countries, particularly in Ethiopia. The intent of this chapter is giving brief outline of the broad objective of the study, the underlying principle of research methodology and the choice of the appropriate research method for 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 main purpose of this research is to determine the impact of working capital management on the performance of manufacturing share companies in Ethiopia for the period of year 2004 to year 2009. The study adopted an explanatory research that used a quantitative research design through the use of secondary data.

Schindler and Cooper (2001) discussed that explanatory studies unlike descriptive studies, go beyond observing and describing the condition and tries to explain the reasons of the phenomenon. According to Grover (2003) explanatory research is devoted to finding causal relationships among dependent and independent variables. It does so from theory-based expectations on how and why variables should be related. Hypotheses could be basic (i.e., relationships exist) or could be directional (i.e., positive or negative). The quantitative data gathering methods are useful especially when a study needs to measure the cause and effect relationships evident between pre-selected and discrete variables (Addisu, 2011). The justification for this method is that it is expected to assist the researcher in explaining the impact of working capital management on the performance of manufacturing share companies in Ethiopia. Furthermore, as the research design goes beyond description of the phenomena it enables the researcher to use theory-based expectations on how and why the variables associate.

3.2. Research approaches

Depending on the philosophical stance, strategies of inquiry and specific methods, a research approach can be categorized as quantitative research approach, qualitative research approach and mixed research approach. The discussions in the subsequent sections present these three approaches of research.

3.2.1. Quantitative research approaches

Quantitative research is grounded in the post-positivism knowledge claim that primarily reflects the scientific method of the natural sciences. This paradigm adopts a deductive approach to the research process. The researcher gathers data from the real-world setting and then analyses the data statistically to support or reject the hypotheses (Blanchi and Durrhein, 1999). Researchers who adopt a more deductive approach use theory to guide the design of the study and the interpretation of the results. In line with this, the overall objective of quantitative research is to test or verify a theory, rather than to develop one.

3.2.2. Qualitative research approaches

Qualitative approach is cantered on the interpretive social sciences paradigm. Qualitative methodology of investigation tends to be based on recognition of the importance of the subjective, experimental 'life-world' of human beings (Blanchi and Durrhein, 1999).Shaw (2006) described that qualitative research seeks to come to terms with meaning rather than frequency because they discover or uncover issues in order to generate ideas and hypothesis. This paradigm therefore focuses on context and capture ways in which people interpret events, experiences and relationship. Easterbyet et al. (1991) mentioned that the task of the qualitative methodologist as to capture what people say and do as a product of how they interpret the complexity of their world, and to understand events from the viewpoints of the participants.

3.2.3. Mixed research approaches

Triangulation is about exposing potentially conflicting perspectives to analysis and showing that data can be integrated and cross-referenced to highlight consistency. Pervez and Kjell (2005) stressed that to enhance validity, there is a need to collect or analyse data through triangulation and where correctness or precision is important. Hence, it is quite logical to collect information

through different methods and angles. Babbie (1995) mentioned that a combination of qualitative and quantitative approaches should be viewed as an acceptable methodological approach for research occupying a variety of epistemological positions.

3.3. Methods adopted

The choice among the three research approaches is guided by mainly the research problem apart from the underlying philosophy of each research method (McKerchar 2008). That is, whether the research problem is based on a framework developed deductively through a review of the literature and prefigured information to be collected in advance of the study or to allow it to emerge from participants in the inquiry process. Also, the type of data may be numeric information to be gathered on scales of instruments or more textual information, recording and reporting the voice of the participants. In light of the research objective and hypotheses presented at the beginning of this chapter along with the underlying philosophy of each research approach, in this study, the quantitative method along with survey design strategy of inquiry was used. More specifically, this study employed structured documentary reviews. In the context of this the following subsection presents the survey design together with its components.

3.3.1. Survey design

The study would assess the impacts of working capital management on the profitability of selected manufacturing share companies in Addis Ababa City Administration. To achieve the research objective and to test the hypotheses, the study would adopt quantitative research approach. The researcher chooses survey research as a strategy of inquiry.

The adoption of the survey design, in the study, would have the following benefits; first, generalization process from sample to population is the intention of a quantitative as opposed to a qualitative researcher. In this type of research, only one sample of subjects is studied and based upon characteristics of that sample, generalization is made back to the population where the sample is formerly chosen. Second, it would give a chance for the researcher to produce data based on empirical figures and thirdly, using survey design was economically viable. This means, it can produce a large amount of data in a short time with a low cost. Accordingly, the data for the study shall collect using structured documentary reviews of companies' financial

statement (especially balance sheet and income statement). Further, the survey would cross sectional, in which data shall collect at one point in time.

3.3.1.1. Structured survey of documents

It is crucial that the data collected and the method used in a research work affect its outcome. Therefore, the data for the study would be collected using structure documentary reviews of target companies audited financial statements like balance sheet and income statement. Since the required data for the study is more of quantitative, appropriate data shouldn't be collect using simply distributed questionnaires to the company's managers or other concerned bodies.

Additionally, it shall prefer for its convenience and cost effectiveness. However, the main problem of using secondary data shall be lack of accessibility of getting relevant source of information directly from selected companies (lack of willingness) and its reliability. By considering the above problems and to excel the reliability of data, it would collect from Ethiopian revenue and custom authority from which audited financial statement is directly submitted by the taxpaying companies to the office.

3.3.1.2. Sampling design

The target population of the study shall be manufacturing share companies found in Addis Ababa city administrations. According, to the ISIC classifications manufacturing enterprises involves industrial groups or business types such as:

- Manufacture of food products: manufacture of vegetable and animal oils and fats, manufacture of dairy products, manufacture of bakery products, manufacture of cocoa, chocolate and sugar confectionary; grain mill services;
- Manufacture of textiles: preparation and spinning of textile fibers, manufacture of made up textile articles, manufacture of carpets and rugs; manufacture of wearing apparel, dressing and dyeing of fur;
- Manufacture of leather, manufacture of luggage, hand bags and foot wear;
- Manufacture of wood and products of wood and cork;
- Manufacture of paper and paper products; publishing, printing and production of recording media;

- Manufacturing of chemicals and chemical products;
- Manufacturing of other nonmetallic mineral products(manufacture of glass and glass products ,manufacture of ceramic and clay products, manufacture of articles of concrete, cutting ,shaping and finishing of stones;
- Manufacture of fabricated metal products, except machinery and equipment; manufacture machinery and equipment manufacture of parts and accessories for motor vehicles and their engines;
- Manufacture of furniture and manufacture jewelry and related articles and other manufacturing enterprises not elsewhere mentioned.

Similarly, choosing the right and appropriate study area for the problem identified may enhance the output of the study and help to achieve its objective. Therefore, the decision to use manufacturing companies would base on the following two aspects that enhance the validity of the study. First, manufacturing companies represent an appropriate sample in order to analyze working capital management. Because all of three components working capital (inventory, account receivable and payable) usually play important roles in the manufacturing sector and comparability of the sample companies shall be enhanced. For instance, service companies most probably hold much less inventory and accounts receivable. Hence, they represent a less reliable source of information for this specific study. Second, most of the previous studies in different countries in relation to this topic were conducted on manufacturing companies like by (Deloof, 2003; Zariyawati et al., 2008; Raheman and Nasr, 2007). For this reason, the researcher believed that manufacturing companies was suitable for the problem under study.

Therefore, according to Addis Ababa city administration trade and industry bureau, formally registered manufacturing share companies **until end of the year 2017 were about 29 firms**. Since, the study covered only five years data (from 2013 – 2017) manufacturing companies registered after end of year 2014 were not eligible for the study. Therefore, the total number of population eligible and used for the study should be 29 manufacturing share companies found in Addis Ababa city administration.

The sampling procedure employed in this study would be stratified sampling method based on the afore-mentioned ISIC classifications of manufacturing enterprises. Among the above listed

types of manufacturing enterprises, four types of manufacturing firms are chosen based on combination of their nature. And then each of four stratums shall divided in to three groups based on companies' turnover. As the researcher discussed on the literature part, natures and turnover of the companies are crucial factors that determine and affect working capital requirements of a firms. Hence, the researcher believed that stratifying companies based on their nature and turnover is appropriate technique for this specific study.

Indeed, the representativeness of all groups in the sample would increase and it reflects the true proportion of the sample about the population. In designing a sample, basing the sample selection on a comprehensive list of potential respondents who have an equal chance of selection is vital to increasing the representativeness of the samples. Meanwhile, the researcher does not use any formula to determine the sample size because if the researcher used the formula for determination of the sample size, the sample size shall be too high which resulted in high cost and takes long time to finish the study. Hence, the researcher considered it limited time and resource to determine the sample size.

Accordingly, after stratifying the population using nature of operations and turnover the study selected a total sample of thirteen (13) companies from all sectors and turnover groups' using random sampling techniques. Unlike other sampling techniques, stratified sampling method has the following advantage which leads the researcher to use it. First, it improves the accuracy of the sample, i.e. it ensures that any differences between the strata are controlled by making sure that each stratum is proportionately represented. Second, Stratified sampling is one tool to reduce selection bias. However, if from stratum's one group is either overrepresented or underrepresented in a sample, selection bias has occurred and the sample shall not accurately reflect the larger population. Moreover, simple random sampling method would use for the following advantages. First, the method gives equal chance for all stratums in the study to be included in the sample. Second, it minimizes the existence of sampling biases, and thirdly, the method itself is too easy to use. Accordingly, the study has a total of sixty five (65) observations to undertake study.

3.3.1.3. Data analysis methods

Before presenting the data, analysis methods adopted, the study specified the variables and models used under the study. Accordingly, the study identified a total of six (6) variables including one dependent, three independent and two control variables based on the preview's studies on different countries on similar topics namely, Narware (2003), Deloof (2003), Rahemal and Nasr (2007), Zariyawati et al. (2008), Phuong (2010) and Amarjit Gill el at. (2010) and discussed as follows:

Gross operating profitability (GOP) that is a measure of profitability of firm is used as dependent variable. It is defined as sales minus cost of goods sold, and divided by total assets minus financial assets. Regarding independent variables, average collection period[5] (ACP) is used as a proxy for the collection policy of firms while inventory turnover in days[6] (ITID) is used as a measure for the inventory policy of firms, and second independent variable. Similarly, average payment period (APP) is used as proxy for the payment policy of firms and third independent variable and the last independent variable is cash conversion cycle[8] (CCC) which is used as a comprehensive measure of working capital management.

Current ratio (CR) is used as a traditional measure of firm's liquidity, and as a control variable. In addition, size should be other control variable and calculated as (Natural logarithm of sales), Debt ratio (DR) is also used as a proxy for leverage and is computed by dividing total debt by total assets.

Descriptive analyses shall use to describe patterns of behaviour or relevant aspects of phenomena and detailed information about each variable. Thus, it shows the average, and standard deviation of the different variables of interest in the study. Moreover, it also presents the minimum and maximum values of the variables which help in getting a picture about the maximum and minimum values a variable can achieve.

3.4. Description of variables

In this study, the choice of explanatory variables has been based on alternative theories related to working capital management and profitability and additional variables that would use in previous studies. The variable used in this study is based on the line as applied in previous research

regarding the relationship between working capital management and profitability. These variables are categorized as dependent, independent and control variables.

3.4.1. Dependent variables

Dependent variables are variables that are used to measure the profitability of firms. In order to analyse the impact of working capital components on the profitability of manufacturing firms in Ethiopia, profitability is measured by return on assets (ROA). Return on asset measures how profitably a firm has used its investment in total assets. ROA is a widely used financial tool to determine the level and intensity of returns that a firm has generated by employing its total assets. Firms are usually considered well off when they generate returns that can attract further investors and lenders, and in trouble if they need to raise the finance required for growth or capital needs, or if their ROA does not convince financiers. ROA reflects the earnings generated by the capital invested, and is calculated as follows:

ROA = Net income/total assets

In this study, ROA is used as dependent variable. ROA has been used by (Samiloglu and Demirgunes, 2008; Sharma and Kumar, 2011; Mogaka and Jagongo, 2013). The return on assets determines the management efficiency to use assets generates earnings. It is a better measure since it relates the profitability of the company to asset base (Padachi, 2006).

3.4.2. Independent variables

The explanatory variables to be used as proxies of working capital management are (1) Cash conversion cycle, (2) Accounts receivable period, and (3) Accounts payable Period. While this study explores the impact of the aforementioned four variables on profitability, it is noted that this list of the selected variables is not exhaustive as there are a number of working capital components that can affect profitability. The choice of explanatory variables is based on the following factors: 1) alternative theories related to working capital management (for example, one theory stating that a longer cash conversion cycle increases firm profitability given that it leads to higher sales, and the opposing theory stating that corporate profitability decreases as cash conversion cycle elongates, particularly if the costs of higher investment in working capital rise faster than the benefits of holding more inventory and/or granting more trade credit to

customers and 2) working capital management variables used in previous studies conducted in other geographic jurisdictions has been used to calculate the relationship between working capital management and profitability. The description of how the variables are measured and computed is explained below.

Cash Conversion Cycle

The cash conversion cycle measures the *net time interval* between actual cash expenditures on a firm's purchase of productive resources and the ultimate recovery of cash receipts from product sales (Richards and Laughlin, 1980). It is measured as follows:

Cash Conversion Cycle (CCC) = Accounts Receivable Period (ARP) + Inventory Holding Period (IHP) - Accounts payable Period (APP)

The three components of Cash conversion cycle are specified below.

Accounts Receivable Period

Accounts receivable period measures the number of days it takes to collect cash from debtors. (Fried *et al,* 2003) state that days sales in receivables measure the effectiveness of the firm's credit policy. It indicates the level of investment in receivables needed to maintain the firm's sales level and is measured as follows:

Accounts Receivable Period (ARP) = (Accounts Receivables / Sales) X 365days

Accounts Payable Period

Accounts Payable Period (APP) measure the number of days a firm takes to pay its suppliers. Thus, this ratio represents an important source of financing for operating activities. The ratio is measured as follows:

Account Payable Period (APP) = (Accounts Payable / Cost of goods sold) X 365 days

3.4.3. Control Variables

In order to have a reliable analysis of the impact of working capital management on profitability of the firms, it is common in working capital literature to use some control variables which brought impacts on firm's profitability. The control variables used in the study is:

Current Ratio: Liquidity is one of the objectives of working capital management. In this study, the researcher has tried to examine the relationship between the two objectives of Working capital management policies: liquidity and profitability. Liquidity refers to the ability to meet current liabilities from available current assets. In this study the measures of liquidity: Current Ratio (CR) was used as one of the control variables for the study. The ratio is measured as follows:

Current Ratio (CR) = Current Assets

Current Liabilities

Firm size (FS): as measured by natural logarithm of sales, as the original value of total sales may disturb the analysis and sales differ from company to company, and making the numbers more comparable. (Fabozzi and Peterson, 2003). FS was used as one of the control variables for the study.

Firm Leverage (FL): as measured by debt ratio which is calculated by total debt to total asset Fabozzi and Peterson (2003) to keep debt utilization effect constant, firm leverage was used as control variable.

3.5. Model selection criteria (Random vs. Fixed effect model)

In this research the method used in each model is selected based on the Correlated Random Effects-Housman Test. The Housman test that examines whether the unobservable heterogeneity term is correlated with explanatory variables, while continuing to assume that regresses are uncorrelated with the disturbance term in each period. The null hypothesis for his test is that unobservable heterogeneity term is not correlated or random effect model is appropriate, with the

independent variables. If the null hypothesis is rejected then we employ Fixed Effects method. (Padachi 2006).

The pooled regression assumes that the intercepts are the same for each firm. This may be an inappropriate assumption; (Brooks, 2008) recommended that we could instead estimate a model with firm fixed effects, which will allow for latent firm specific heterogeneity. The simplest types of fixed effects models allow the intercept in the regression model to differ cross sectional. To determine whether the fixed effects are necessary or not, this study run a redundant fixed effects test as recommended by (Brooks, 2008) and others using Housman Test

3.6. Model specifications

To analyse the impact of working capital management on profitability, the study used the following methods:

(i) Descriptive statistical analysis wherein a description of features of the data in the study such as mean and standard deviation of each variable is presented.
(ii) Regression analysis is used to gauge the extent to which a unit change in each respective explanatory variable has on profitability.

Pooled ordinary least squares method was used in regression analysis, wherein time series and cross-sectional observations is combined in determining the causal relationship between profitability variable and the independent variables used in the study.

3.6.1. General regression model

To examine the impact of working capital management on profitability of manufacturing share companies in Ethiopia, the model used by (Samiloglu &Demirgunes, 2008) has been adopted and adapted. Generally, this model is specified as:

$ROA_{it} = \beta 0 + \Sigma \beta_i X_{it} + \varepsilon_{it}$

Source: Samiloglu & Demirgunes, 2008

Where:

ROA is Return on Assets of firm i at time t; i= 1, 2, 3, 4…… 13 firms

B0 is the intercept of the equation

Bi are coefficients of Xit variables

Xit are independent variables at time t

t = time= 1, 2…….7 years (from year 2008 to 2014)

I -is the error term

3.6.2. Specific regression model

Pooled OLS regressions are simply a linear regression applied to the whole data set. One of the biggest advantages of OLS method is that it relaxes the restriction of an enough large data set and simplicity. (Delos, 2003; Garcia-Terrell &Martinez-Solano, 2006; Padachi, 2006) used OLS to investigate the impact of WCM on corporate profitability. Four regression models were run in which one for all the variables based on selected sample companies. When the above general model is converted to the specified variables of this study the following regression equations was run to obtain the impact of working capital management on the performance of manufacturing firms.

i) Model Specification (I) regressed for accounts receivable period

Model 1: Root = β0 + β1 (Armpit)+ +β2(Crist)+β3(SGit) + β4(DRit)+ β5(FSit)+εit

ii) Model Specification (II) regressed for accounts payable period

Model 3: ROAit = β0 + β1 (APPit)+ β2(CRit)+β3(SGit) + β4(DRit)+ β5(FSit)+ εit

iii) Model Specification (III) regressed for cash conversion cycle

Model 4: ROAit = β0 +β1 (CCCit)+β2(CRit)+β3(SGit) + β4(DRit)+ β5(FSit)+ εit

Where: β0 = intercept of the regression,

β1, β2, β3, β4, and β5 = coefficients on each respective explanatory variable,

ROAit = Return on asset – for firm i at corresponding time t.

ARPit = Account receivable Period – for firm i at corresponding time t.

APPit = Account payable period - for firm i at corresponding time t.

CCCit = cash conversion cycle - for firm i at corresponding time t.

CRit = Current ratio - for firm i at corresponding time t.

DRit = Debt ratio for firm i at corresponding time t.

t = time= 1, 2…. 7 (from year 2008 to 2014), and

εit = is the error term of the regression – for firm i at time t

In the first regression model, the ARP has been regressed against the ROA. In the second regression model, the IHP has been regressed against the ROA. The third regression model involves a regression of the APP against the ROA. In the fourth regression model, the CCC is regressed against the ROA

CHAPTER FOUR

4. RESULTS AND DISCUSSION

4.1. Introduction

In the preceding chapters, the review of relevant literature helped this study to understand the problem and design an appropriate research approach to deal with and the research design employed to achieve the objectives of the study and to test the research hypotheses there on. In this chapter, the study analyses the collected data using various statistical tools and presents the results and discussion accordingly. This chapter is organized in two sections. The first sub section presents the result which includes descriptive statistics, CLRM Assumptions and Diagnostic tests, correlation analysis, the regression results and interview result. The second section is dedicated to the discussion of results.

4.2. Results

In order to achieve the study objective, the researcher adopted various statistical tools to analyse the collected data. Section 4.2.1 presents the descriptive statistics which focuses on the distribution the data, mean, maximum and standard deviation. Section 4.2.2 presents tests for the classical linear regression model assumptions followed by the correlation analysis among the dependent and independent variables in section 4.2.3. The model selection test and outcomes of the regression result with discussion are presented in section 4.2.4.

4.2.1. Descriptive statistics

In this section the results from descriptive statistics was discussed. Table 4.1 below presents descriptive statistics of the dependent and independent variables of the study. It shows the mean and standard deviation of the variables used in the study. In addition, it shows the minimum and maximum values of each respective variable which essentially gives an indication of how wide ranging each respective variable can be. The descriptive statistics are presented for 65 total observations of manufacturing share companies found in Addis Ababa city administration for the period of five years. For dependent, independent and controllable variables value of minimum, maximum, mean and standard deviation are presented on table 4.1.

Table 4. 1 Summary of descriptive

	ROA	ACP	APP	CCC	CR	DR
Mean	0.351231	36.21538	42.66154	94.53385	3.698462	0.378154
Median	0.340000	37.00000	45.00000	98.50000	3.500000	0.360000
Maximum	0.510000	51.00000	60.00000	205.0000	6.500000	0.650000
Minimum	0.200000	20.00000	20.00000	23.50000	0.600000	0.210000
Std. Dev.	0.091813	8.557238	12.08858	43.04482	1.225318	0.119464
Observations	65	65	65	65	65	65

Source: Evew8 output from financial statements of sample companies, 2013-2017

Table 4.1 presented descriptive statistics for 13 Addis Ababa city manufacturing firms for a period of five years from year 2013 to 2017 with a total of 65 observations.

Return on asset measures how profitably a firm has used its investment in total assets. According to the table 4.1, on average each company earned around 0.3512% profit for each birr in asset and standard deviation of 0.091% This Shows that during the study period the sampled manufacturing companies have normal accrual, on average. The minimum Return on asset is 0.2% and the highest profit is 0.51%.

The cash conversion cycle used as a proxy to check the efficiency in managing working capital. The average length of time between the firm's payment for its raw material and the collection of payment from the customer is 95 days and standard deviation is 43 days. The minimum time taken by a company to convert its overall activity is 23 days which is usual and the maximum time taken by the firm for this purpose is 205 days again its very large.

The delay between the date of sale and the date at which the firm is paid is the accounts receivable period. Firms receive payment against sales after an average of 36 days and standard deviation is 9 days. Minimum time taken by a company to collect cash from receivables is 20 days while the maximum time taken by the firm for this purpose is 51 days.

Average payable period measures the average length of time between the purchase of materials or labour and the payment of cash for supplies. Firms wait an average 42 days to pay their purchases with standard deviation of 12 days. Here, minimum time taken by a company is 20

days which is usual for 30 days credit period, and maximum time taken for this purpose is 60 days. To check the liquidity of the companies, a traditional measure of liquidity (current ratio) is used.

4.2.2. CMLR Assumption test

- No Housman test is needed b/c Random effects estimation requires number of cross section > number of coefficient for between estimator for estimate of RE innovation variance.

4.2.2.1. Autocorrelation

The other Assumption of classical linear regression model is Autocorrelation. The diagnostic test for CLRM assumption of no autocorrelation was tested by this study. According to Gujarati, (2004) the assumption of no autocorrelation between the disturbances assumes that given any two X values, Xi and Xj (i≠j), the correlation between any two ui and uj(i≠j), is zero. According to Chris Brooks (2008) it is assumed that the errors are uncorrelated with one another. If the errors are not uncorrelated with one another, it would be stated that they are 'auto correlated' or that they are 'serially correlated'. This assumption was tested by Durbin Watson (DW) test of autocorrelation. Durbin--Watson (DW) is a test for first order autocorrelation -- i.e. it tests for a relationship between an error and its immediate previous value. One way to motivate the test and to interpret the test statistic would be in the context of a regression of the time *t* error on its previous value.

$$ut = \rho ut-1 + vt$$

Where vt~N (0, σ2 v) and ρ is the coefficient of autocorrelation. The DW test statistic has as its null and alternative hypotheses. Under the null hypothesis, the errors at time $t-1$ and t are independent of one another (the errors at time $t-1$ and t are uncorrelated), and the alternative hypothesis says the errors at time $t-1$ and t are independent (the errors at time $t-1$ and t are serially correlated). Therefore

H0: ρ =0 (no autocorrelation

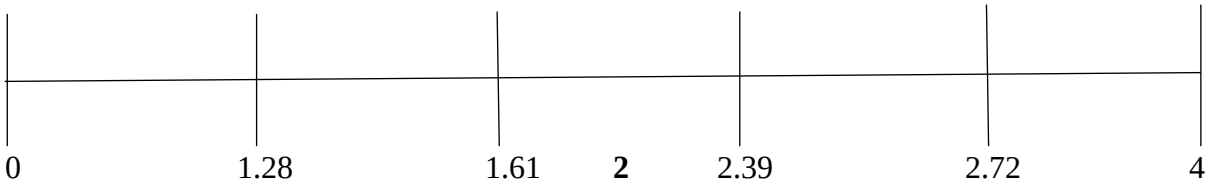


Figure 4. 1 autocorrelation

Table 4. 2 DW test result test of autocorrelation

Test	DW Test statistic
DW result	1.903630

The DW test statistic value for models was 1.903630 for a total observation of 65(5*13) were used in the model with 7 redressers. Thus, the decision values for the test are dL= 1.28, du = 1.61, 4-dU = 2.39 and 4-dL = 2.72. The DW test statistics for the model is 1.903630 lies in no autocorrelation area. Therefore, there is no significance evidence for the existence of autocorrelation in the study.

4.2.2.2. Multicollinearity

The other very important assumption of the classical linear regression model is multicollinearity. According to Guajarati (2004) one of the assumptions of the classical linear regression model is that there is no multicollinearity among the explanatory variables, the X's. Broadly interpreted, multicollinearity refers to the situation where there is either an exact or approximately exact linear relationship among the explanatory variable. To test the multicollinearity problem the current study used correlation matrix between the explanatory variables. According to Kennedy (2008) multicollinearity problem exists when the correlation coefficient among the variables are greater than 0.70.

Table 4.3 below shows the correlation coefficient among explanatory variables in this study. The highest correlation coefficient for this study explanatory variable is -2.7 that is between PROF and LEV, which is less than 0.7. Therefore, there is no evidence for presence of Multicollinearity problem in this study model.

Table 4. 3 Correlation Matrix for independent variables

	ACP	APP	CCC	CA	DR
ACP	1.000000				
APP	0.195188	1.000000			
CCC	-0.200889	-0.203930	1.000000		
CR	0.442465	0.151443	0.053375	1.000000	
DR	0.344755	0.087199	0.080123	0.847086	1.000000

Source: Output of Eviews 8

Multicollinearity is an assumption of a linear relationship between explanatory variables that creates biased regression model. This problem occurs when the explanatory variables are very highly correlated with each other (Brook, 2008).

According to (Hair et al., 2006) multicollinearity problem exists when the correlation coefficient among the variables are greater than 0.90. However, (Kennedy, 2008) suggested that any correlation coefficient above 0.7 could cause a serious multicollinearity problem as it appears in the correlation matrix in the above tables all the modes are less than the stated value.

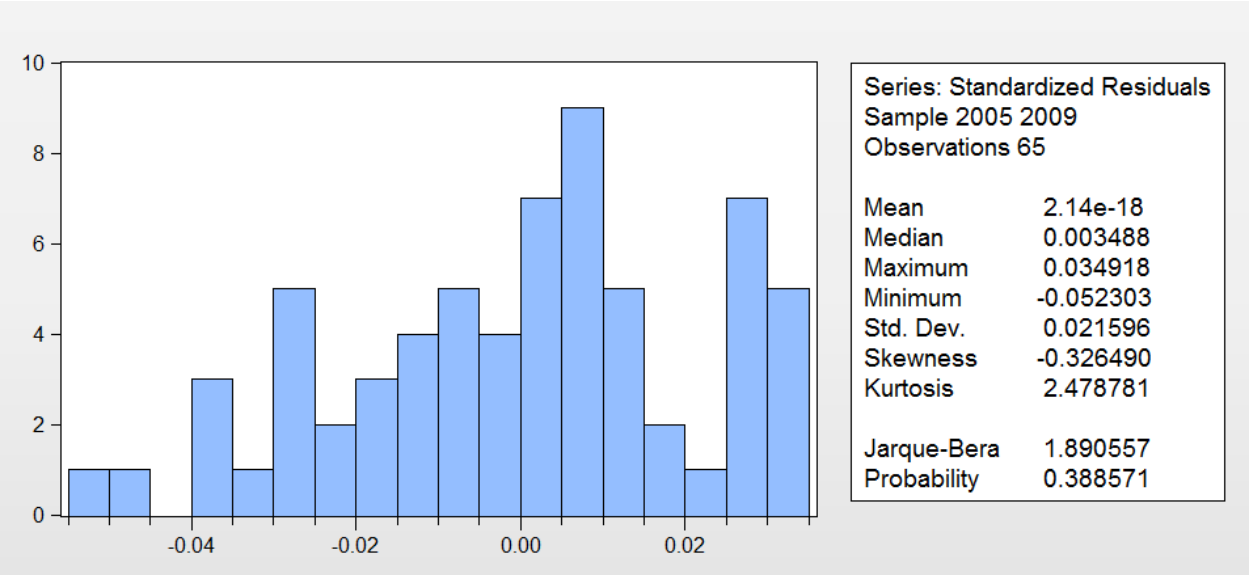
4.2.2.3. Normality

The other classical linear regression model assumption is normally distribution of the residual. The classical normal linear regression model assumes that each unit is distributed normally with mean and standard deviation values are near to 0 and 1 respectively Gujarati (2004).

To test the normality assumption in this study the researcher applied the Jarque-Bera (JB) test. As noted by Brooks (2008) JB uses the property of a normally distributed random variable that the entire distribution is characterized by the first two moments -- the mean and the variance.

The standardized third and fourth moments of a distribution are known as its skewness and kurtosis. Skewness measures the extent to which a distribution is not symmetric about its mean value and kurtosis measures how fat the tails of the distributed. If the residuals are normally distributed, the histogram should be bell shaped and the Jarque-Bera statistic would not be significant. This means that the p-value given at the bottom of the normality test screen should be bigger than 0.05 to not reject the null of normality at the 5% level.

Figure 4. 2 Normality Test



Source: Output of Eviews 8 from financial statement of sample companies2013-2017

The result depicted on figure 4.4 revealed that, majority of distributions are full in to the Bell-shaped boundary of histogram with the mean of 2.14e-18 and standard deviation 0.021596. Therefore, Jarque-Bera statistic of 1.890557 is not significant and it shows that the error terms are normally distributed. Hence, the p-value given at the bottom of the normality test screen is bigger than 5 % and signifying not to reject the null of normality at the 5% level.

4.2.2.4. Heteroscedasticity

It is a test made to check whether error terms variance is constant (homoscedasticity) or not (heteroscedasticity). To test for the presence of heteroscedasticity, the popular white test was employed (Brooks 2008). One of the important assumptions of the multiple regressions reveals that the variance of the disturbance term is constant. This is called the assumption of homoscedasticity. If disturbance terms (errors) do not have constant variance, they are said to be heteroscedasticity (Gujarati, 2004).

In this case as presented in table 4.4, both the F-statistic and Chi-Square versions of the test statistic gave the same conclusion that there is no evidence for the presence of heteroscedasticity in this particular study, since the p-values are considerably in excess of 0.05. Therefore, the null hypothesis that the variance of the errors is constant (homoscedasticity) should not be rejected.

Table 4. 4 Heteroscedasticity test: White test

Heteroskedasticity Test: White			
F-statistic	3.403902	Prob. F (15,49)	0.5006
Obs*R-squared	33.16863	Prob. Chi-Square (15)	0.3044
Scaled explained SS	12.13513	Prob. Chi-Square (15)	0.0088
Log likelihood	260.6437	Hannan-Quinn criter.	-7.316314
F-statistic	3.403902	Durbin-Watson stat	1.657573
Prob(F-statistic)	0.000592		

Source: Output of Eviews 8

4.2.3. Correlation analysis

Table 4. 5 Correlation matrix of dependent and independent variables

	ROA	ACP	APP	CCC	CR	DR
ROA	1.000000					
ACP	-0.117977	1.000000				
APP	0.190996	0.195188	1.000000			
CCC	0.328613	-0.2008894	-0.203930	1.000000		
CA	0.111683	0.442465	0.151443	0.053375	1.000000	
DR	0.090527	0.344755	0.087199	0.080123	0.847086	1.000000

From table 4.5 the researcher started the analysis of correlation results between the average collection period and Return on Asset. The result of correlation analysis shows -0.119 a weak negative relationship with dependent variable the correlation clearly shows that they have an inverse relationship.as a collection day are increase, the return on investment will be less.

Table 4.5 reported, the variable APP and CCC shows a weak correlation with Return on asset was 0.19 and 0.328 respectively. The number of day's accounts payable and the cash conversion cycle which is a comprehensive measure of working capital management have a positive relationship with dependent variable. In other word as the average length of APP and CCC increase, the profit gain from each unit in asset also increases.

Table 4.5 also shows DR has a very weak correlation with Explanatory variables. The correlation analysis shows that positive relationship with Return on investment and the correlation shows 0.09. However, it is not significant. Further with reference to the control

variables, CA have a weak correlation with dependent variable was 0.111. They have direct relation associated with return on asset of a company.

4.2.4. Regression result

Table 4. 6 FRQ Model fixed Effect Regression Result

Dependent Variable: ROA
Method: Panel Least Squares
Date: 06/01/19 Time: 16:54
Sample: 2013-2017

Periods included: 5
Cross-sections included: 13
Total panel (balanced) observations: 65

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.388034	0.229696	1.689340	0.0978
ACP	0.001054	0.001608	0.655450	0.0154*
APP	5.09E-05	0.001697	0.029980	0.0072**
CCC	-0.001217	0.002063	-0.589975	0.5580
DR	0.006684	0.066229	0.100917	0.0200*
CR	0.009576	0.008954	1.069411	0.2903
	Effects Specification			
Cross-section fixed (dummy variables)				
R-squared	0.944675	Mean dependent var		0.351231
Adjusted R-squared	0.924663	S.D. dependent var		0.091813
S.E. of regression	0.025201	Akaike info criterion		-4.294297
Sum squared resid	0.029848	Schwarz criterion		-3.692159
Log likelihood	157.5647	Hannan-Quinn criter.		-4.056715
F-statistic	47.20705	Durbin-Watson stat		1.903630
Prob(F-statistic)	0.000000			

Source: Eviews8 output from financial statements of sample companies, 2013-2017

The result is rounded. * Regression is significant at the 0.05 level **Regression is insignificant at the 0.01 level

4.2.5. Results for multiple regressions

The regression is estimated average collection period, average payment period and cash conversion cycle including other control variables. Therefore, this section presents two

regression outputs one for the whole regression including all variables together and results of each dependent variable regressed by independent variables to see the time impact on the output. Pooled multiple regression for all independent and control variables simultaneous indicated that, except for cash conversion cycle all variables had positive coefficient. At the same time, apart from cash conversion cycle p-value (0.558) and current ratio p-value (0.2903) all variables are significant at 1 percent degree of freedom. The value of adjusted R2 is 92.4%. while Durbin-Watson and F-statistic are 1.903630 and 47.20705 respectively (table 4.7). `

4.3. Discussion

AVERAGE COLLECTION PERIOD AND ROA OF MANUFACTURING SHARE COMPANIES IN ETHIOPIA

Accounts receivable period measures the number of days it takes to collect cash from debtors. The Regression result of random effect model as reported in table 4.7 above clearly shows a statistically significant positively on Return on Asset of manufacturing share companies in Ethiopia. This positively relationship indicates that quick collection of accounts receivables is correlated with low profitability. Table 4.7 also, shows the average collection period (ACP) with a positive coefficient of 0.01054 and a p-value of 0.0154 has a fairly statistical significance on profitability implying that the number of days it takes a company to collect its receivables has a fair impact on the profit of the company.

This result indicates that the null hypothesis of the study is rejected, since the statistic value is higher than 0.05. This imply that in Ethiopian manufacturing share companies Return on Asset will not be influenced by the companies financing decision which leads us to reject the working hypothesis of the Study, Return on Asset is Negatively related to firm average collection period.

AVERAGE PAYABLE PERIOD AND RETURN ON ASSET OF MANUFACTURING SHARE COMPANIES IN ETHIOPIA

Accounts Payable Period (APP) measure the number of days a firm takes to pay its suppliers. Thus, this ratio represents an important source of financing for operating activities.

In table 4.7above, the average payment period (APP) with a coefficient of 5.09E-05 and a p-value of 0.0072 has a fair statistical significance on profitability which indicates that the time period taken by a company to pay its creditors will have an impact on profitability

The regression results in table 4.7 indicate that holding other things constant a day increase in accounts payable period is associated with an increase in percent in profitability and it a has fair statistically significant. Contrary to Raheman and Nasr (2007), Sharma and Kumar (2011) and Tewodros (2010), this finding holds that more profitable firms wait longer to pay their bills.

This implies that they withhold their payment to suppliers so as to take advantage of the cash available for their working capital needs. Deloof (2003) who found a strong negative relationship between profitability and number of days of account payable justifies in his result that less profitable firms tend to delay payments and more profitable firms pay their bills earlier.

Mathuva (2010) and Makori and Jagongo (2013) also found a positive relation between accounts payables and firm's profitability. Their explanation for a positive relationship is that the longer a firm delays its payments to its creditors, the higher the level of working capital levels it reserves and uses in order to increase profitability.

The results from regression model shows the account payable period of a firm are significant positively related to a firm's profitability. In conformity with hypothesis, the indicator of profitability, return on assets is positively related with accounts payable period but significant. Therefore, the null hypothesis can be concluding that hypothesis is rejected.

CASH CONVERSION CYCLE AND RETURN ON ASSET OF MANUFACTURING SHARE COMPANIES IN ETHIOPIA

The cash conversion cycle is used as a popular to measure efficiency of working capital management. Therefore, the cash conversion cycle as an independent variable, and the result on table 4.7 indicated that CCC has negative coefficient and insignificant value. This means there is a negative relationship between cash conversion cycle and firms' profitability (measured by ROA). The researcher finding is balanced against the previews studies of one African country (Nigeria) Garcia and Martinez (2007) who found strong negative relationship between cash conversion cycle as a measure of working capital management efficiency. However, the study finding is differed from Amarjit et. al. (2010) who found positive relationship between cash conversion cycle and profitability.

CHAPTER FIVE

5. CONCLUTIONS AND RECOMMENDATIONS

This chapter presents conclusions drawn from the overall overviews of the research and its main findings. Then recommendations have been forwarded by the researcher based on the findings made. Finally, future research direction has been provided.

5.1. Conclusions

The management of working capital is one of the most important financial decisions of a firm. The ability of the firm to operate for longer durations depends on a proper trade-off between management of investment in long-term and short-term funds (working capital). Firms can achieve optimal management of working capital by making the trade-off between profitability and liquidity. It is necessary for a firm to monitor its working capital properly and maintain its balance at the appropriate level. Shortage of working capital may lead to lack of liquidity as well as loss of production and sales; on the contrary, excess balance of working capital could be seen as loss of investment opportunities.

This research studied the impact of working capital management on profitability of manufacturing share companies in Ethiopia. The study used quantitative research approach. Data was analysed using descriptive statistics and regression analysis on a sample of 13 manufacturing share companies in Ethiopia for the period of 2013-2017. The impact of working capital management has been analyses by using OLS regression model between WCM and profitability. The study used return on asset as dependent variable. Accounts receivable period, and accounts payable period were used as independent working capital management variables. Moreover, cash conversion cycle was used as comprehensive measures of working capital management. In addition, the study used current ratio, which was used as liquidity indicator; firm measures the total debt of the firm; as control variables. Descriptive statistics were used to examine the trend of the chosen variables among the sample firms.

Cash conversion cycle as a comprehensive measure of working capital management of manufacturing share companies of the study on average takes 251 days. Before the regression

was run, the data have tested the assumptions underlying OLS and are fulfilled all tested assumptions made. The regression analyses of the number of day's accounts receivables indicate that there is a significant Positively on Return on Asset of manufacturing share companies in Addis Ababa. This positively relationship indicates that quick collection of accounts receivables is correlated with low profitability Therefore, firms can increase their profitability by increasing the accounts collection period as much as possible.

The regression analyses of account payable period indicate that there is a positive relation between these days and firm's profitability. This means that the longer the firm's accounts payable period, the higher the profitability and vice versa. This can be described as the longer a firm delays its payments to its creditors, can increases profitability.

The regression analyses of cash conversion cycle indicate that there is a significant negative relation at 5percent level between this cycle and firm's profitability. This means that the shorter the firm's cash conversion cycle, the higher the profitability and vice versa. The negative relationship between accounts receivable period and profitability suggests that high profitable firms pursued an increase of their accounts receivables in an attempt to increase their cash gap in the cash conversion cycle. Similarly, the positive relationship between accounts payable period and profitability shows that when firms delay their payments, they earn more profits. The negative relationship between inventory holding period and profitability suggests that firms should make speed the turnover of inventory to be profitable. Therefore, manufacturing share firms of Ethiopia can increase their profitability by making lower the length of cash conversion cycle and keeping each different component (accounts Receivables and accounts payables) to the optimal level.

5.2. Recommendations

The recommendations of the research were premised on the summary of and conclusions from the results and discussion. The study has shown a clear understanding of working capital components and its impact on profitability of firms. In order to improve firms' performance, management of working capital components is necessary. Therefore, the researcher recommends the following points based on the study findings.

- ✓ The negative relationship between manufacturing firms 'financial performance and accounts receivable period increases firm's profitability when there is high collection of accounts receivable. The result of the study shows whenever the average collection period of the firm decreases, firm's profitability increases. Therefore, the researcher suggests to the managers of the firm to control their Receivable and uncollectible before long. The researcher further recommended that firms should engage in relationship with those customers who allow short payment period by considering not to lose customers who delay payments.

- ✓ The study also found positive relationship between accounts payable period and firms' profitability. It indicates that whenever firms wait longer to pay their account payables, it increases profitability. However, the study found out there is an insignificant relationship between APP and profitability. Therefore, the researcher recommended that firms should consider the terms of APP to be longer to have an impact on firms' profitability.

- ✓ The study also found that cash conversion cycle has a negative relationship with firms' profitability. Therefore, regarding the CCC, the researcher recommended that lowering working capital cycle as a measure of efficient working capital management is the one to be appraised. This means that Investment in working capital could be optimized and cash flows could be improved by reducing the timeframe of the physical flow from receipt of raw material to shipment of finished goods, *i.e.* inventory management, and by improving the terms on which firm sells goods as well as receipt of cash.

- ✓ Finally, management of manufacturing firms made under study can create value for the shareholders as well to make the firms performance well by reducing: the net time interval between actual cash expenditures on a firm's purchase of productive resources and the ultimate recovery of cash receipts from product sales

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Appendix

Appendix 1 Stratification of sample companies

A. Manufacturing of garment, leather and shoe factories (first strata)

1. Addis Ababa Tannery S/Co paid-up capital 15,135,000 kolfe keraniyo kifile Ketema telephone 911201451 "industry"
2. ADDISGARMENT S.Co. Share Company paid up capital 5,810,000.00 Lideta Kifile Ketema, tel. 113201287 "industry"
3. Akaki Garment Share Company paid up capital 8,559,000.00 let. 340154 "industry"
4. Gulele Garment Share Company paid-up capital 12,000,000.00 kolfe keraniyo kifile Ketema TEL. 112703434 "industry"
5. Adey Abeba Yarn Factory, Share Company paid up capital 23,670,000.00, Nefas Silk Lafto Kifle ketema let. 114423455 "industry"
6. Tikur Abay Shoe Sh.Co. Paid-up capital 30,852,605.00 "Shoe & Glue Production" kolfe keraniyo kifile Ketema
7. Anbesa Shoe S.C. 24,454,000.00 Lideta Kifile Ketema Kebele 05
8. Ethio Japanese synthetic textiles S.C. paid-up capital 31,051,029.00 Lideta Kifile Ketema Kebele 13

B. Manufacturing of steel, glass and glass products, equipment, spare parts, plastic, furniture, paper and paper products factories (second strata)

9. Akaki Spare Parts & Hand Tools S.C. paid-up capital 142,298,000.00 Akaki Kefele Ketema TEL. 114340422 "industry"
10. Addis Ababa Bottle & Glass Share Company paid-up capital 26,105,000.00 telephone 792628 "industry'
11. Brick Products Processing S.C. paid-up capital 10,097,000.00 Addis Ketema Kefle Ketema "industry"
12. Al-kyd Resin S.C. paid-up capital 25,400,000.00 akaki kaliti Kefele ketema kebele 10 "industry"
13. Addis Block Production S.C paid-up capital 14,245,000.00 "industry"
14. Ecafco /Ethiopian Chip wood & Furniture S. C paid-up capital 4,338,000.00 Nefas Silk Lafto Kifle ketema TEL. 114421515 "industry"
15. Ethiopian Plastic Share Company paid-up capital 29,670,000.00 Kirkos Kifile ketema TEL. 115517890 "industry"

16. Saba Plastic Products Factory paid-up capital 35,567,000.00 "industry"
17. MATADOR-ADDIS TYRE S.C. paid-up capital 255,041,369.00 Akaki Kefele Ketema "industry"
18. Mega Net Corporation S.C. paid-up capital 10,000,000.00 "industry"

C. Manufacturing of mineral water, beverages & soft drink factories (third strata)

19. Ambo Mineral Water S.C. paid-up capital 300,607,000.00 Kirkos Kifile ketema "industry"
20. Ethiopian Mineral Development S.C. paid-up capital 128,525,000.00 Bole Kifle Ketema TEL. 116613355 "industry"
21. Moha Soft Drinks Industry SC CP. 105,000,000.00 Bole Kifle Ketema TEL. 614655/6614655 "industry"
22. Awash Wine S.C. paid-up capital 30,850,000.00 Lideta Kifile Ketema Kebele 02
23. Ease Africa Bottling S.C. paid-up capital 66,160,600.00 TEL. 757603 "industry"

D. Manufacturing of food products and agro industry factories (fourth strata)

24. Ethio-Horti S.C. paid-up capital 2,162,500.00 Bole Kifle Ketema TEL. 636750 "Agricultural Development"
25. Ethiopian Spice Extraction S.C. 10,609,000.00 Akaki Kefele Ketema "industry"
26. Kaliti Food S.C. paid-up capital 88,734,000.00 Akaki Kefele Ketema "industry food complex"
27. Rx Africa (Ethiopia) S.C. paid-up capital 17,748,612.00 Kirkos Kifile ketema "industry"
28. Addis Mojo Edible Oil Complex S.C. paid-up capital 149,692,000.00 Nefas Silk Lafto Kifle ketema
29. Ethiopian pharmaceuticals Manufacturing S.C. paid-up capital 122,963,000.00, Nefas Silk Lafto Kifle ketema TEL. 113711000 "industry"

Appendix 2 Fundamental concepts for analysis

F-value: The value of F test explains the overall significance of a model. It explains the significance of the relationship between dependent variables and all the other independent Variables. (Anderson et al., 2007)

T-Value: T value is used to determine the level of significance of regression coefficient. It is also known as test of individual significance. It explains the significance of relationship between dependent variable with each of the independent variable. If the t value is less than 3 than it supports the null hypothesis and if the t value is greater than 3 then it neglects the null hypothesis (Anderson et al., 2007).

R square: It explains the total variation in the value of dependent variable. Its value lies between 0 and 1, if the value of R square is closer to 1 than it tells that the regression model which is applied on data really supports it (Gujarati 2004).

P-Value: It is also used to determine the level of significance of regression coefficient. It measures whether the data supports the null hypothesis or not. If the P value is greater than .05 then null hypotheses can't be rejected and if the value of P is less than .05 than it rejects the null hypothesis. Usually we call it significance (Brooks, 2008)

95 % confidence interval: It gives two boundaries where a certain percentage of population is expected to lay e.g. 95% confidence interval means that 95 % of the population will lay between the upper boundary and lower boundary and half of the remaining values lie above the upper boundary and half of it lies below the lower boundary (Brooks, 2008).

Correlation: Correlation explains how two variables react to each other e.g. what change will occur in one variable with the change in another variable (Anderson et al., 2007).

Beta (ß): The value of beta explains the change in the dependent variable with the per unit change in independent variable. It also explains the nature and strength of the relationship between dependent variable and independent variable (Brooks, 2008).