

**IMPACTS OF WORKING CAPITAL MANAGEMENT ON FIRM'S
PROFITABILITY,
IN THE CONTEXT OF SRI LANKA, MANUFACTURING COMPANIES
LISTED IN COLOMBO STOCK EXCHANGE**

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On

Impacts of working capital management on firm's profitability,

In the context of Sri Lanka, manufacturing companies listed in Colombo stock exchange

Can be accepted by the Department of Accounting

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WORKING CAPITAL MANAGEMENT AND FIRM'S PERFORMANCE IN THE LISTED MANUFACTURING SECTOR OF SRI LANKA

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ABSTRACT

The management of working capital, which ensures the survival of a business enterprise, is one of the most important and challenging aspect of the overall financial management. Due to this significance, working capital management has been the subject of many studies around the world that reveal inconclusive results. Yet, in the Sri Lankan context, very little research has been carried out in this regard. Hence, this research focused on working capital management and firm's performance in the manufacturing sector of Sri Lanka, which is the largest sub-sector of the industry sector. The study aimed to identify; the impact of working capital management on financial performance, how manufacturing companies manage their various working capital components and barriers that retard the efficient management of working capital.

The study adopted quantitative as well as qualitative methods of research approaches. The researcher selected thirty manufacturing companies listed in the Colombo Stock Exchange and the secondary data were gathered from the financial statements of these companies. The primary data were collected through semi- structured interviews. Quantitative data were then analyzed using Pearson's correlation and regression analysis. The interviewees' responses were summarized and presented and also compared against one another to identify similarities and differences of opinions. Finally, these findings were compared with the quantitative findings.

The statistical analysis suggests that managers can increase corporate profitability by reducing the number of inventory turnover days and increasing the creditors payable days by minimizing the length of the cash conversion cycle. Increase in creditor payable days would

give opportunities to the companies for further investments and to pay its account payables if the maturity period is larger than the credit period offer by the company to its customers. Accounts receivables showed a positive relationship with profitability due to the fact that Sri Lankan companies have to grant more trade credit to sustain their competitiveness with their foreign competitors as most of the manufacturing companies are export oriented. In order to manage inventory, which is a significant part of working capital for the Sri Lankan manufacturing companies, perpetual inventory control systems and material requirements planning systems are used mainly. Despite the positive relationship of creditors payable days and profitability as identified in the statistical analysis, most of the companies maintain less accounts payables than accounts receivables. This is because companies avoid late payments to its suppliers to reduce the unfavourable impacts of fluctuations in exchange rate. Thus, the Sri Lankan manufacturing companies generally operate on a deficit-credit basis, and as a consequence, they depend on non-spontaneous sources for financing their trade deficits. In practice many of these companies find it difficult to manage working capital efficiently due to corporate complacency, lack of clarity from leadership at the top and uncertainty in economic conditions. Therefore, these companies do not reap the due benefits that could be derived from efficient working capital management. Hence, it is recommended the manufacturing companies to consider working capital management as high, if not the highest, priority to facilitate the smooth running and/or effective management of working capital to enhance the level of profitability.

Key words: Working capital, Manufacturing sector, Sri Lanka, Inventory management, receivables and payables management, Cash management

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ABBREVIATIONS

GOP	Gross Operating Profit
ROA	Return on Assets
ID	Inventory Turnover in Days
ARD	Accounts Receivable Days
APD	Accounts Payable Days
CCC	Cash Conversion Cycle
ANOVA	Analysis of variance
SPSS	Statistical Package for Social Sciences

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Investors all over the world invest their money in a business to get some return on their investment in different forms of business (eg. proprietorship, partnership and corporations). In small and medium businesses like proprietorship and partnership owners have direct or indirect control over the management of the business. So, they themselves are responsible for all the profits and losses. On the other hand in the large multinational companies, the management of the company manages the affairs of the company on behalf of owners and owners of the company want management to take such decisions which will give positive signals to market, increase the value of the firm, enhance profitability and maximize holding period return.

In order to find new ways of value creation, most of the empirical studies focused on inventory management and account receivables management but working capital management has a broader view. It not only covers the current assets but also covers the current liabilities (Lazaridis & Tryfonidis, 2006). A proficient policy towards working capital can create value for the shareholders; on the other hand a deprived policy might affect the business in an appalling way and might cause a financial distress. This situation will lead to the disinvestment and failure of all the long term plans resulting shareholder will lose the value (Afza & Nazir, 2008).

The importance of working capital policy or management can't be denied in any organization. Researchers in all over the world focused on this issue and discuss it in detail in the perspective of many countries. Researchers from developing countries consider working capital as a life blood of any organization and this is the reason that most of the research on the topic had been carried out in the developing countries like Pakistan, India, and Taiwan etc. As Sri Lanka belongs to a country where researchers consider the working capital as the most important factor that determine the profitability, it was surprising to know that despite

the importance of the topic very little research has been carried out in Sri Lanka. By keeping this thing in mind this study will focus on the Sri Lankan Listed Manufacturing companies and will try to find out the relationship between profitability and working capital management.

A manufacturing firm's current assets account for over half of its total assets. The maintenance of excessive levels of current assets can easily result in a substandard return on a firm's investment. Further, Manufacturing, the largest sub-sector of the industry sector in Sri Lanka has been recorded a significant growth to economy (Central Bank Report, 2011). Therefore, in this study, specially manufacturing companies were taken into consideration since those are playing very important role in the Sri Lankan economy in order to enhance the economic growth. Therefore, the decision to use manufacturing companies is based 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 in working capital (inventory, account receivable and payable) usually play an important role in the manufacturing sector and comparability of the sample companies will 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 (Deloof, 2003, Raheman and Nasr, 2007). For this reason, the researcher believed that manufacturing companies are suitable for the problem under study.

1.2 Statement of the problem

Working capital management is an important issue in any organization. This is because without a proper management of working capital components, it is difficult for the firm to run its operations smoothly. That is why Brigham and Houston (2003) mentioned 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 operations to ensure firms smooth running and to meet its obligation (Eljelly, 2004).

Researchers have studied working capital management in many different ways. While some authors studied the impact of an optimal inventory management, others have studied the optimal way of managing accounts receivables that leads to profit maximization (Besley and Meyer, 1987; and Lazaridis and Tryfonidis, 2006). Other studies have focused on how reduction of working capital improves a firm's profitability (Shin and Soenen, 1998; Deloof, 2003; Padachi, 2006; Raheman and Nasr, 2007).

The title of this study is "Working capital management and firm's performance in the listed manufacturing sector of Sri Lanka". The primary research question of this study is to find out how Sri Lankan manufacturing companies manage their Working Capital Components to improve performance? The following sub-questions are designed to answer the primary research question:

- What is the impact of working capital components on profitability in listed manufacturing companies?
- What are the strategies employed by Sri Lankan manufacturing companies to manage Working capital efficiently?
- What are the challenges companies face when managing working capital efficiently?

1.3 Objectives of the study

The study will attempt to address the following research objectives with respect to listed manufacturing sector of Sri Lanka.

- I. To identify the impact of different components of working capital management on profitability of organizations
- II. To identify different strategies companies adopt to manage working capital efficiently.
- III. To identify barriers that retard the efficient management of working capital management in the organisations.

1.4 Research method adopted

The population of the study is all the Public quoted companies in Colombo Stock Exchange (CSE) at 31 January 2013. Presently 284 companies are listed on the CSE. Sample consists of 32 listed manufacturing companies among 35 of listed manufacturing companies and the data for 5 years from 2008 to 2012 were considered for this study purpose. The sample selection is justified by their meeting the data availability criteria needed for the study period of 5 years (2008 – 2012).

In order to achieve the objective number one in the above mentioned list, a quantitative method has adopted. Accordingly, to achieve this objective secondary data were gathered from the audited accounts (i.e. income statement and balance sheet) of the concerned companies as fairly accurate and reliable. Therefore, these data may be considered reliable for the study. To this end, descriptive statistics, regression analysis and Pearson correlation coefficient was used.

The researcher has adopted qualitative method for the last two objectives of the study. Data were gathered by interviewing personnel who are responsible to manage the working capital of the companies and showed an interest to provide the information for this study purpose.

1.5 Significance of the study

(a) In business perspective;

Manufacturing is the largest sub-sector of the industry sector and driver for most (if not all) national economies. Understanding how manufacturing companies achieve high performance has significant implications for company owners/managers, company employees, and the economy. High level of performance can facilitate firm growth and subsequent profit performance, which in turn can yield employment gains and contribute to the general economic health of the nation. Conversely, low performance may lead to firm failure, and the negative economic ramifications commensurate with these outcomes. In the present study context of rising capital cost and scarce funds, the importance of working capital needs special emphasis. The efficient working capital management is the most crucial factor in maintaining survival, liquidity, solvency and profitability of the concerned business organization. Therefore, understanding the relationship between proper working capital management and performance of manufacturing companies is vital to the businesses.

b) In academic perspective;

Most researchers have attempted to understand the factors that determine the working capital of an organization. This study will mainly focus on different strategies that the listed manufacturing companies adopt in working capital management and factors that lead to the inefficiencies in working capital management, while studying the impact of different components of working capital management on profitability. There is a dearth of literature in this area of study relating to listed manufacturing companies in Sri Lanka in the recent past. Therefore this attempt will fill the knowledge gap in this area of study.

1.6 Organisation of the study

The study focuses on examining the impacts of working capital management on profitability of manufacturing companies listed in Colombo Stock Exchange. The rest of this study is organized as follows.

Table 1.1: Organisation of the study

Chapter 2	Literature Review The core issues of concern that are connected with working capital management and reviews preceding works that tackled them analytically and empirically.
Chapter 3	Research Methodology The research design and methodological frameworks employed to accomplish the stated objective of the study.
Chapter 4	Analysis and the findings The empirical finding of the research is presented separately from the analysis in order to allow for the separation between the findings and the authors analysis of them.
Chapter 5	Discussion The analysis and discussion naturally follows after the empirical findings, where these will be analyzed and discussed to fulfill the aim with the research.
Chapter 6	Conclusion and Recommendations The conclusion will be drawn and connected it to the research question and will provide some further research considerations.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

The purpose of this chapter is to review the evidence on working capital management and profitability measures of a manufacturing firm. Hence, the chapter is arranged into two sections. Section 2.2 presents the theoretical review of working capital management while the section 2.3 reviews the empirical evidence pertaining to working capital management.

2.2 Theoretical review

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-to-day 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 an important tool for growth and profitability for corporations. If the levels of working capital are not enough, it could lead to shortages and problems with the day-to-day operations (Horne and Wachowicz, 2000).

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. 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 relationship between liquidity and profitability in an orderly manner.

2.2.1 Components of working capital

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): The overall current assets are considered as gross working capital of firms. Such working capital or liquidities of firms are measured by the existing current assets which are using for current operation as well as for settlement of short term obligations. In some concerns, these assets sometimes account for half of the total assets. In general a firm's investment in current assets such as cash, bank deposits, short-term securities, accounts receivable and inventories are called as "(gross) working capital".

Net working capital (NWC): net working capital is the surplus of current assets over the short term liabilities and represents the liquidity margin available to meet the cash demands in order to maintain the daily operations and benefit from the profitable investment opportunities (Schilling, 1996, Yadav, Kamath and Manjrekar, 2009, Padachi et al., 2008). Therefore it is possible to say that working capital can be regarded as lifeblood of the firm and its efficient management can ensure the success of the firm while its inefficient management may lead to the bankruptcy of the firm (Padachi et al., 2008). Net working capital can be mathematically presented as:

$$\text{Net Working Capital} = \text{Current Assets} - \text{Current Liabilities}$$

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. Hence, based on time, working capital may be classified into two important types as permanent and temporary working capital (Paramasivan and Subramanian, 2009) and these two concepts are 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 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). 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) they defined as a rises 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 and receivables 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 paragraphs:

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 can be either 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

Some time 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.

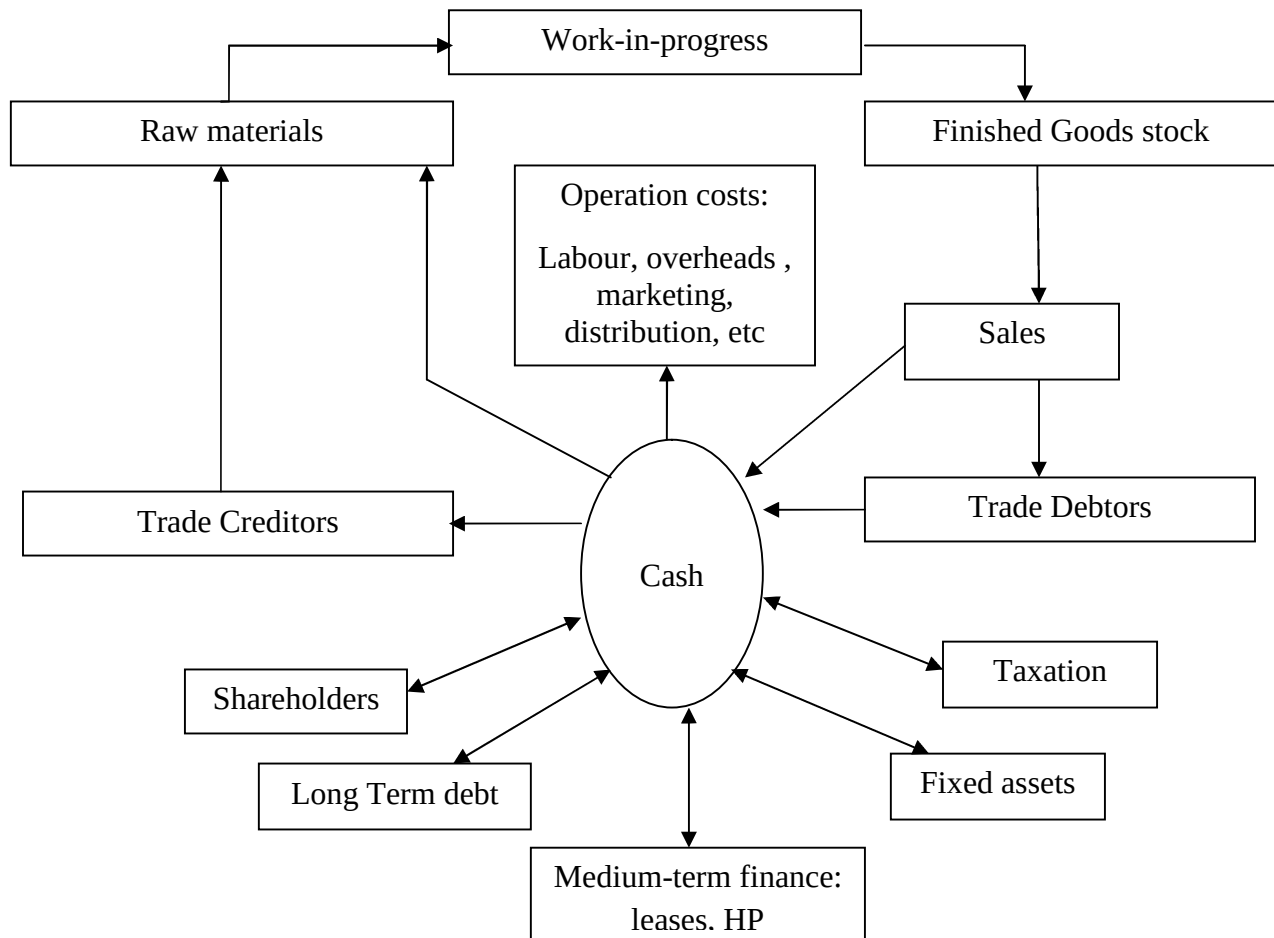
2.2.4 Working capital management

In order to understand the importance of working capital one has to understand the working capital cycle which is described as the core of working capital management. Arnold (2008,) 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 share holders 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, the figure 2.1 shows the framework of firm's working capital cycle:

The below working capital cycle reveals that funds invested in operations or activities are re cycled back into cash. The cycle, of course, takes some time to complete. The longer the period of this conversion the longer is the operating cycle. A standard operating cycle may be for any time period but does not generally exceed a financial year. However, if it were possible to complete the sequence (working capital cycle) instantly, there would be no need for current assets (working capital). But, since it is not possible, the firm is forced to have current assets, because, cash inflows and outflows do not match in the business operations, the firm has to keep cash for meeting short term obligations through proper management of working capital components.

Figure 2.1: A typical working capital cycle



—————→ The Working Capital Cycle

↔ Other Cash flows

Source: Arnold, 2008, p 530

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

Accounts receivables can be seen as short-term loans to customers given by the supplying firm. Giving these credit terms to customers are an important way of securing sales (Berry and Jarvis, 2006). Although the total amount of receivables on a balance sheet of a firm could be constant over time, its components are continually shifting and therefore careful monitoring is needed (Firth, 1976). When the accounts receivables keep growing, funds are unavailable and therefore can be seen as opportunity costs. According to Berry and Jarvis (2006) a firm setting up a policy for determining the optimal amount of account receivables have to take in account the following:

- The trade-off between the securing of sales and profits and the amount of opportunity cost and administrative costs of the increasing account receivables.
- The level of risk the firm is prepared to take when extending credit to a customer, because this customer could default when payment is due.
- The investment in debt collection management.

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 60 days, 61 to 90 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). Whereas, financial ratio can be used to get an overall picture of how fast credit manager collect accounts receivable. Therefore, the Accounts Receivable Days (ARD) 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 receivables by credit sales and multiplying the result by 365 and written as:

$$\text{Accounts Receivable Days (ARP)} = \text{Accounts Receivables} / (\text{Credit Sales}/365)$$

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).

2.2.4.2 Inventory management

Inventory represents a large part of the total assets of many firms and an effective management is needed for normal production and selling operations of the firm and for keeping the costs of holding inventory at a minimum (Firth, 1976). The goal of inventory management is to minimize the costs of storing and financing goods while maintaining a level of inventories that satisfies the amounts of sales of a firm (Hampton and Wagner, 1989). Deloof (2003) argues that with inventory management there is a trade-off between sales and costs. If a firm keeps more stock it could result in more sales, but it will also be

more costly. A firm needs to determine an optimal level of the amount of stocks. In figure 2.2 the different trade-offs a firm faces, are illustrated.

Figure 2.2: Trade-off inventory management

<i>If low inventory levels then risks are:</i>	<i>If high inventory levels then risks are:</i>
— High ordering cost — Cost of ‘stock – outs’ • Loss of sales • Loss of profits • Loss of goodwill • Production dislocation	— Cost of tying up cash (lost interest) — Storage costs — Management costs — Obsolescence — Deterioration — Insurance Costs — Protection (e.g. security patrols)

Source: Arnold, 2008, p 545

Monitoring inventory management

Companies can monitor its inventory by looking through its financial ratios like that of monitoring receivables. Inventory turnover ratio in days (ID) indicates the number of time the stock has been turned over sales during the period and evaluates the efficiency with which a firm is able to manage its inventory. This ratio indicates whether investment in stock is within proper limit or not (Brigham and Houston, 2003). Hence, the ratio is calculated by dividing inventory by cost of goods sold and multiplying with 365 days and depicted as follows:

$$\text{Inventory Turnover in Day (ID)} = \text{Inventory} / (\text{Cost of sales}/365)$$

In general there is no rule of thumb or standard for interpreting the inventory turnover ratio. The norms may be different for different firms depending upon the nature of industry and business conditions. However the study of the comparative or trend analysis of inventory turnover is still useful for financial analysis.

2.2.4.3 Cash management

Brawley 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).

2.2.4.4 Accounts Payables management

Account payables are the opposite of account receivables, instead of giving a credit on a sale, a firm receives a credit. Hampton and Wagner (1989) explain account payables as follows:

‘When a firm makes a purchase on credit, it incurs an obligation to pay for the goods according to the terms given by the seller. Until the cash is paid for the goods the obligation to pay is recorded in accounts payables’. Account payables can be seen as a short term loan,

or in other words, a source of funding. The typical account payable policy is “2 in 10, net 30”.

This means that if a firm pays within 10 days it receives a discount of 2 percent, if not, the total bill has to be paid in thirty days. This means that a firm has to pay 2 percent for only 20 days, which is in fact a very expensive loan. To make this clearer the 2 percent can be transformed in an annual rate of 43 percent, which is enormous compared to normal annual rates. It is also possible that the policy is net 30, which means that the due date is within thirty days, without any discount. (Leach and Melicher, 2009: 504). Instead of a source of funding, account payables or in other words using the trade credit term of a supplier can also be used to assess product quality (Deloof, 2003; Ng et al., 1999; Lee and Stowe, 1993; Long, Malitz and Ravid, 1993 and Smith, 1987). This assessment has to be done during the credit term and if the quality of the product is not satisfying, it can be sent back without paying the bill. The trade-off of accepting account payables or not is illustrated in figure 2.3.

Figure 2.3: The credit trade-off

<i>Cost of not taking trade credit</i>	<i>Cost of accepting trade credit</i>
— If trade credit is not taken alternative sources of finance may have to be used, which may be costly. — Paying all bills on delivery may involve more administration expense than paying through a delayed	— Passing up of lower prices/ discounts. — Loss of reputation/goodwill if late payment is pushed too far. — Administration costs of managing of trade creditor records and making payments.

Source: Arnold, 2008, p 549

One way of monitoring accounts payables is by the Accounts Payable Days (APD) or day's payables outstanding ratio which measures the average length of time between the purchase of materials or labor and the payment of cash for supplies (Brigham and Houston 2003). It can be calculated as:

Accounts Payable Days (APD) = 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 (DeLoof,2003).

2.2.4.5 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 etc. All these liabilities have a maturity less than one year (Arnold, 2008). 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 and 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.

2.2.4.6 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) 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). In order to calculate the CCC one has to first calculate average collection period, inventory turnover in day and average payment period. In deed the formula used to compute cash conversion cycle is represented as follows:

$$\text{CCC} = \frac{\text{Average collection}}{\text{Period}} + \frac{\text{Inventory Turnover in day}}{\text{Period}} - \frac{\text{Average Payment}}{\text{Period}}$$

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. When a firm is determining a working capital policy, it faces a dilemma of achieving the optimal level of working capital, where the desired trade-off between liquidity and profitability is reached (Nazir and Afza, 2009; Hill et al., 2010; Smith, 1980 and Nasr, 2007). This trade-off is a choice between risk and return. An investment with more risk will result in more return. Thus, a firm with high liquidity of working capital will have low risk and therefore low profitability. The other way around is when a firm has low liquidity of working capital, which result in high risk but high profitability. When determining a WCM policy, a firm has to consider both sides of the coin and try to find the right balance between risk and return. 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) 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).

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). 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).

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 more risky, 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 fulfill the current liabilities (Weston and Brigham, 1977). 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).

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). 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). 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 inappropriate 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 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). 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).

$$\text{NPM} = (\text{Earnings available for common stakeholder} / \text{Net sales}) * 100$$

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). The higher value of ROA shows the better performance and it can be computed as follows:

$$\text{ROA} = (\text{Earnings Available For Common Stockholders} / \text{Total Asset}) * 100$$

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).

$$\text{Gross operating profit} = (\text{Sales} - \text{COGS}) / (\text{Total asset} - \text{financial asset})$$

On the other hand, Liquidity ratios measure 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) and they are discussed as follows:

Current ratio: the relationship between current assets and current liabilities. It is a measure of general liquidity and it is the most widely used to make the analysis for short term financial position or liquidity of a firm (Fabozzi and Peterson, 2003). Current ratio can be calculated by dividing the total current assets by total current liability.

$$\text{Current ratio} = \text{current asset} / \text{current liability}$$

Acid test ratio or quick ratio: it is the true liquidity refers to the ability of a firm to pay its short term obligations as and when they become due. It is the ratio of liquid assets to current liabilities.

$$\text{Quick ratio} = \text{Current asset} - \text{inventory} / \text{Current Liabilities}$$

It is very useful in measuring the liquidity position of a firm. It measures the firm's capacity to pay off current obligations immediately and is more rigorous test of liquidity than the current ratio.

On the other hand, debt ratio is one part of financial ratio which is used for debt management used by different company. Hence, it is ratio that indicates what proportion of debt a company has relative to its assets. The measure gives an idea to the leverage of the company

along with the potential risks the company faces in terms of its debt-load (Fabozzi and Peterson, 2003). It can be calculated as dividing total debt by total asset.

$$\text{Debt Ratio} = \text{Total Debt} / \text{Total Assets}$$

2.2.7 Relationship between liquidity and profitability

Finance manager has to take various types of financial decisions like investment decision, finance decision, liquidity decision and dividend decision, in different time. In every area of financial management, the finance manger is always faced with the dilemma of liquidity and profitability. He/she has to strike a balance between the two (Eljelly, 2004). Liquidity means the firm has to have adequate cash to pay bills as and when they fall due, and it also have sufficient cash reserves to meet emergencies and unforeseen demands, in all times. On the other hand, Profitability goal requires that funds of a firm should be utilized as to yield the highest return. Hence, liquidity and profitability are conflicting decisions, when one increases the other decreases. More liquidity results in less profitability and vice versa. This conflict finance manager has to face as all the financial decisions involve both liquidity and profitability.

Creditors of the company always want the company to keep the level of short term assets higher than the level of short term liabilities; this is because they want to secure their money. If current assets are in excess to current liabilities then the creditors will be in a comfortable situation. On the other hand managers of the company don't think in the same way, obviously each and every manager want to pay the mature liabilities but they also know that excess of current assets might be costly and idle resource which will not produce any return.

For example, having high level of inventory will raise warehouse expense. So, rather than keeping excessive current assets (cash, inventory, account receivable) managers want to keep the optimal level of current assets, to a level which is enough to fulfill current liabilities. And also managers want to invest the excessive amount to earn some return. Hence, managers have to make a choice between two extreme positions; either they will choose the long term investments, investments in non current asset such as subsidiaries (equity), with high

profitability i.e. high return and low liquidity. 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 fulfill their need of liquidity and gives required level of profitability (Arnold, 2008).

2.3 Review of empirical studies

This section reviews the empirical studies on the impact of working capital management on firms' profitability. 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 compust at 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-debtiness 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.

2.4 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. Due to 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 conducted in similar areas. Moreover, studies regarding working capital are mostly related with improving models to determine optimal liquidity and cash balance, rather than analyzing underlying reasons of relationships between liquidity, working capital management practices and profitability. Hence this study will attempt to identify barriers that retard the efficient management of working capital and different strategies companies have adopted in managing working capital efficiently which have not been discussed in prior studies. Thus in general the researcher believes that, the above actions would fill the gap identified in this study.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

The previous chapter indicated the literature on the impacts of working capital management on firms' profitability. The intent of this chapter is to give an outline of the conceptual framework of the study, hypotheses and the underlying principle of research methodology. The chapter is arranged as follows: section 3.2 presents the conceptual framework. Section 3.2 discusses the hypotheses while section 3.4 shows methods adopted in the study. Finally, conclusion is presented in section 3.5.

3.2 Conceptual Framework

When there are less number of inventory days, less number of accounts receivable days and higher number of accounts payable days, it says that there is a good cash conversion cycle. A good cash conversion cycle indicates efficient working capital management. According to literature since there is a positive relation between proper working capital management and profitability, a shorter cash conversion cycle finally leads to higher profitability.

In this study working capital management has identified as independent variable while profitability as the dependent variable. Inventory turnover days, accounts receivable days, accounts payable days and cash conversion cycle has identified as indicators of working capital management and gross operating profit and return on assets has identified as indicators of profitability.

Figure 3.1: Conceptual Framework for the research



Source: developed by the author

3.3 Hypotheses

This study aims to examine the impacts of working capital management on profitability of Manufacturing Companies listed in Colombo Stock Exchange. 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 attempted to test.

Since, the basic objective of working capital management is to manage firm's current assets and liabilities and in such a way that working capital are maintained at a satisfactory level. Smith (1980) mentioned that working capital management plays an important role in a firm's profitability and risk as well as its value. Whereas, Van Horne and Wachowicz (2004) pointed out that excessive level of current assets have a negative effect on firm's profitability, while lower level of current assets lead to lower liquidity and stock-outs, and result in difficulties of maintaining smooth operations. Therefore, depend upon the above theoretical basis the first hypothesis of the study is developed as follows:

Hypothesis 1

H_{o1}: There is a relationship between efficient working capital management and profitability. Firms more efficient in managing their working capital is expected to pose high level of profitability and vice versa.

H_{a1}: There is no relationship between efficient working capital management and profitability.

The relation between the management of inventories and firm's profitability is studied by Deloof (2003). He found that the effect of the number of days inventories have a negative effect on a firm's profitability. For instance, shortening the inventory conversion period could increase stock out costs of inventory which results in losing sales opportunities and leads to poor performance (Deloof, 2003). The most important reason for firms to keep inventory levels low are the costs involved. These costs are for example storage costs, management costs, security costs, insurance costs and cost of tying up cash. To find out the relationship between inventory and profitability the second hypothesis is developed as follows:

Hypothesis 2

H₀₂: There is a relationship between inventory turnover days and profitability.

H_{a2}: No relationship between inventory turnover days and profitability.

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. On the other hand if a company adopts a policy to have a low level of account receivables then it can reduce the profitability by reducing the sales but it can contribute to the profit by reducing the risk of bad debts and by reducing investment in the receivables (Andrew & Gallagher, 1999, p.465). Companies want to have a level of account receivables which maximizes the profitability. The level of account receivables is largely influenced by the credit policy offered by the company to its customers. Strict policy will reduce the collection period and account receivables and if company offers relaxed credit policy it will raise the level of account receivables. The relationship between accounts receivable and profitability will be tested using the third hypothesis.

Hypothesis 3

H₀₃: There is a relationship between debtor's turnover days and profitability

H_{a3}: No relationship between debtor's turnover days and profitability.

In the measurement of the Cash Conversion Cycle (CCC) of a firm, the number of days accounts payables needs to be deducted. Since almost all researchers who studied the effect of the CCC on firm's profitability found a negative relation. Therefore, it is expected that accounts payables have a positive effect on firm profitability (Deloof, 2003; Shin and Soenen, 1998, Lazaridis and Tryfonidis, 2006). The researchers explain significant positive relationship between gross operating profit and number of days accounts payable as a company delays its payment which affects the higher level of working capital and use to increase its profitability which less-profit companies would make use of this to delay their payment. This relationship will be tested using the fourth hypothesis:

Hypothesis 4

H₀₄: There is a relationship between creditor's payable days and profitability

H_{a4}: No relationship between creditor's payable days and profitability

The effect of the combined parts of WCM on profitability is measured using the Cash Conversion Cycle (CCC). Hyun-Han and Soenen (1998) provide the evidence that there is a significant negative relationship between working capital management measured by net trade cycle and profitability which point out that market share lead to the bargaining power with suppliers and customers to shorter the net trade cycle and higher profitability. Lazaridis and Tryfonidis (2006) find the negative relationship between cash conversion cycle and profitability measured by gross operating profit. The researchers explain this negative result as shorter cash conversion cycle will generate more profit for a company. To proof this effect, the fifth hypothesis needs to be tested:

Hypothesis 5

H₀₅: There is a relationship between cash conversion cycle and profitability

H_{a5}: No relationship with cash conversion cycle and profitability

3.4 Methods adopted

In light of the research objectives presented in the chapter one quantitative method as well as qualitative methods of research approaches was used in this study.

3.4.1 Sample Description

The thirty manufacturing companies listed in the Colombo Stock Exchange formed the data sample which are named in Appendix I. Because these firms are publicly listed, much detailed information of these firms are accessible, like Balance Sheet and Income Statement which are needed to calculate the inventory turnover days, debtors' turnover days, creditors' turnover days and cash conversion cycle. The sample selection is justified by their meeting the data availability criteria needed for the study period of 5 years (2008 – 2012). In addition, conducting the study on five-year period would allow to compare changes over time and it would make the results more reliable than using one-year financial data. In addition to the application of those selection criteria, the researcher applied a series of filters. Thus, the researcher has removed the observations of entry items from the balance sheet and profit and loss account exhibiting signs that were contrary to reasonable expectations. Finally, extreme values presented by several variables also have been eliminated from the data set. As a result of applying these filters, the researcher has ended up with 113 observations.

3.4.2 Data Collection

Secondary data: The research is fundamentally based on secondary data gathered from the annual reports of sample companies. In some cases, some data and information were collected from the websites of the sampled firms, different articles and papers. Secondary data for the study were drawn from audited accounts (i.e. income statements and balance sheets) of the concerned companies as fairly accurate and reliable. Therefore these data may be considered reliable for the study.

Primary data: Primary data were gathered to achieve the objectives of to identify different strategies companies adopted to manage working capital efficiently and to identify barriers that

retard the efficient management of working capital management in the organizations. For this purpose, primary data were gathered through semi structured interviews with six Finance managers who are mainly responsible to manage working capital of the selected companies. The aim was that the interviewees would be persons who are responsible for working capital management of the company and have in depth information of liquidity practices in a company. The interviews took the form of semi-structured interviews, where the researcher used an interview guideline (Appendix II) to conduct interviews and had the freedom to ask different questions when the need arose. The responses of the interviewees were noted down by the researcher and also audio-recorded at the time of the interview. Later, they were transcribed and electronically logged.

3.4.3 Variable choice

Firm profitability: There are many different measurements of firm profitability among the researchers who studied the relation between working capital management and firm profitability. The simplest form among these measurements is Return on Assets (ROA), which is measured by dividing net income with total assets. This is used by Sharma and Kumar (2011), Falope and Ajilore (2009) and Nazir and Afza (2009). According to Padachi et al. (2006) ROA is a good measure for firm profitability, because it relates the profitability of a company with its assets.

The other main measurement is gross operating profit before depreciation and amortization divided by total assets minus financial assets. This measurement is used by Deloof (2003), Raheman and Nasr (2007) and Lazaridis and Tryfonidis (2006).

The profitability measures that will be used in this study is gross operating profit before depreciation and amortization divided by total assets minus financial assets, in this study this measurement is abbreviated to GOP. Also Return on Assets (ROA) is used as the second dependent variable. GOP is chosen, because this measurement is used by influential studies such as Deloof (2003), Raheman and Nasr (2007) and Lazaridis and Tryfonidis (2006).

ROA is at first chosen, because the largest part of Working Capital research uses ROA as the dependent variable, and secondly it's chosen because with two different dependent variables robustness can be checked. ROA and GOP were chosen as dependent variables, although the sample selected for the study represents several industries, the study does not purely comparing profitability ratios but investigating a relationship between profitability and working capital management. Further, more attention should be given to the regression models using GOP, because this measure is more reliable in studying the effect of working capital management on a firm's profitability. There are several reasons for this higher reliability, the first reason is that it measures only the performance of the operating activities of a firm. This is because the measurement of the gross operating profit, which is sales minus costs of goods sold, excludes taxes, interest costs, depreciation and amortization (Lazaridis and Tryfonidis, 2006 and Gill et al., 2010). The second reason is also based on the fact that this measurement focuses on the operational performance. This is because it excludes the income gained through the financial activities by firms; this is done through the exclusion of fixed financial assets, which are deducted from the total assets. GOP is calculated as follows (Lazaridis & Tryfonidis, 2006 and Deloof, 2003):

Components of Working Capital Management: Accounts Receivable Days (ARD) is used as a proxy for the collection policy of firms while inventory turnover in days (ID) is used as a measure for the inventory policy of firms, and second independent variable. Similarly, Accounts Payable Days (APD) is used as proxy for the payment policy of firms and third independent variable and the last independent variable is cash conversion cycle (CCC) which is used as a comprehensive measure of working capital management.

Table 3.1
Variable Measurements

Table 3.1 reports the different measurements of the various variables used in the upcoming analyses. The reasons for these measurements are given in the above paragraphs and are based on the various studies on the literature of Working Capital and its management.

The Dependent Variable

GOP	Gross Operating Profit	=	$\frac{(\text{Sales} - \text{Cost of Sales})}{(\text{Total Assets} - \text{Financial Assets})}$
ROA	Return on Assets	=	$\frac{\text{Net Income}}{\text{Total Assets}}$

The Independent Variables

ID	Number of days Inventory	=	$\frac{\text{Inventory}}{\text{Cost of goods sold}} \times 365$
ARD	Number of days Accounts Receivables	=	$\frac{\text{Accounts Receivables}}{\text{Net Sales}} \times 365$
APD	Number of days Accounts Payables	=	$\frac{\text{Accounts Payables}}{\text{Cost of goods sold}} \times 365$
CCC	Cash Conversion Cycle	=	$\text{ID} + \text{ARD} - \text{APD}$

3.5 Conclusion

This chapter discussed the conceptual framework and hypotheses of the study, research methods and different data sources which were appropriately used to address the study problems. In general based on the research problems and objective the study developed five hypotheses. Similarly, based on the underlying principles of research methods and the research problem quantitative approaches as well as qualitative approaches were chosen to analyse the results of the study. The next chapter presents the results of each of these methods adopted.

CHAPTER 4

ANALYSIS AND THE FINDINGS

4.1 Introduction

This chapter presents and analyses the real impacts of working capital management on firm's profitability, by testing the hypothesis defined in chapter three. First part of this chapter will present and analyse the empirical results from quantitative data analysis. Secondly the responses gathered by conducting the semi-structured interviews with five managers will be summarised and presented using the qualitative method of data analysis.

4.2 Quantitative approach

The quantitative data analysis has been adopted by using SPSS statistic program in order to examine the relationship between components of working capital and company profitability. In this section, Descriptive statistics, Correlation and Regression analysis of collected data will be performed.

4.2.1 Descriptive Statistics

Continuous variables allow to analyse quantitative data by using descriptive statistics. Descriptive statistics show characteristics of sample which include mean, median, minimum, maximum and standard deviation (Kohler, 1994).

Table 4.1 shows the descriptive statistics for a 113 observations of a data. On average one cash cycle is completed in 113 days. The average period within which companies pay to their creditors is 24 days, it takes 43 days to convert account receivables into cash, and it keeps the inventory for 94 days. Average GOP is 34% whereas average ROA is 4%. Other than this, table shows the maximum and minimum values that data contains for each variable, standard deviation shows the dispersion of data from the mean and median value shows the central tendency of the data.

In an ideal situation of normal distribution mean and median are equal but in this study, they are fairly close to each other except in GOP and ROA. Standard deviation for each variable is quite high which means the data is disperse and it have little central tendency.

Table 4.1: Descriptive statistics of sample companies

Descriptive Statistics

Variables	N	Minimum	Maximum	Mean	Median	Std. Dev
Gross operating profit	113	-2	84	34.07	4.35	18.577
Return on assets	113	-27	16	4.27	36	6.171
Inventory turnover in days	113	27	190	94.26	84.01	38.102
Accounts receivable days	113	1	99	42.65	40.68	27.086
Accounts payable days	113	1	78	24.22	22	16.478
Cash conversion cycle	113	15	254	112.69	103.2	51.307

Source: SPSS output from financial statements of sample companies, 2008-2012

4.2.2 Pearson's correlations

Before the start of regression analysis it is important to check the correlation between different variables which the researcher is going to use for the analysis. Correlation explains how two variables react to each other, e.g. what change will occur in one variable with the change in other variable (Kohler, 1994). The positive correlation indicates that when one variable increase another also increases while the negative correlation show inverse relationship (Pallant, 2007).The table 4.2 shows the results of the correlation analyses.

Correlation results between inventory turnover in days and gross operating profit shows a negative coefficient of – 0.302, with p-value of 0.001 and inventory turnover in days and return on assets shows a negative coefficient of -0.254, with p-value of 0.007. Correlation results between inventory turnover in days and gross operating profit and inventory turnover in days and return on assets indicate that the result is highly significant at 1% significant level.

Correlation results among the accounts receivable days and gross operating profit shows a positive coefficient of 0.187, with p-value of 0.047 and accounts receivable days and return on assets also indicate the same trend with a slight change in coefficient (0.188). These results are significant at 5% significant level.

Table 4.2: Pearson's correlation coefficients

		Correlations					
		ID	ARD	APD	CCC	GOP	ROA
ID	Pearson Correlation	1	.135	-.043	.828**	-.302**	-.254**
	Sig. (2-tailed)		.154	.653	.000	.001	.007
	N	113	113	113	113	113	113
ARD	Pearson Correlation	.135	1	.176	.572**	.187*	.188*
	Sig. (2-tailed)	.154		.062	.000	.047	.047
	N	113	113	113	113	113	113
APD	Pearson Correlation	-.043	.176	1	-.260**	.227*	.296**
	Sig. (2-tailed)	.653	.062		.005	.016	.001
	N	113	113	113	113	113	113
CCC	Pearson Correlation	.828**	.572**	-.260**	1	-.198*	-.185*
	Sig. (2-tailed)	.000	.000	.005		.035	.050
	N	113	113	113	113	113	113
GOP	Pearson Correlation	-.302**	.187*	.227*	-.198*	1	.373**
	Sig. (2-tailed)	.001	.047	.016	.035		.000
	N	113	113	113	113	113	113
ROA	Pearson Correlation	-.254**	.188*	.296**	-.185*	.373**	1
	Sig. (2-tailed)	.007	.047	.001	.050	.000	
	N	113	113	113	113	113	113

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Source: SPSS output from financial statements of sample companies, 2008-2012

Correlation results among the accounts payable days and gross operating profit also indicates the same trend as accounts receivables. Here again, the coefficient is 0.227 with the p value of 0.016. This is significant at 5% significant level. Correlation results among the accounts payable days and return on assets shows a positive coefficient of 0.296, with p-value of 0.001 and further this indicates that result with ROA is significant at 1%.

The cash conversion cycle which is a comprehensive measure of working capital management also has a negative coefficient of -0.198 and the p-value of 0.035 with Gross Operating Profit. The cash conversion cycle with Return on Assets shows a negative coefficient of -0.185 and the p-value of 0.050. Both are significant at 5%.

A shortcoming of Pearson correlations is that they are not able to identify the causes from consequences, therefore regression analyses will be held (Deloof, 2003).

4.2.3 Regression Analyses

This method helps to estimate one unknown dependent variable with the help of several known independent variables. These independent variables comprise some part of independent variable which is explained by the equation established in regression analysis (Kohler, 1994). This technique of analysis is used because the researcher wants to define dependent variable (GOP and ROA) by using independent variables.

As mentioned earlier in this study, working capital management consists of three different parts. These parts are accounts receivables, accounts payables and inventories. In the upcoming analyses, each of these parts will be studied, with the aim of determining the most profitable way to manage each of these parts. Also the combined parts of working capital management will be studied in the form of the cash conversion cycle. Each of these four different variables will be analysed using the regression analyses.

The regression analyses that will be used in this study are based on the following equations;

Model 1 used for regressing inventory as an independent variable

$$(1) \text{ } GOP_{it} = \beta_0 + \beta_1 (\text{ID}_{it}) + \varepsilon$$

$$(2) \text{ } ROA_{it} = \beta_0 + \beta_1 (\text{ID}_{it}) + \varepsilon$$

Model 2 used for regressing account receivable as independent variable.

$$(3) \text{ } GOP_{it} = \beta_0 + \beta_1 (\text{ARD}_{it}) + \varepsilon$$

$$(4) \text{ } ROA_{it} = \beta_0 + \beta_1 (\text{ARD}_{it}) + \varepsilon$$

Model 3 used for regressing account payable as an independent variable

$$(5) \text{ } GOP_{it} = \beta_0 + \beta_1 (\text{APD}_{it}) + \varepsilon$$

$$(6) \text{ } ROA_{it} = \beta_0 + \beta_1 (\text{APD}_{it}) + \varepsilon$$

Model 4 used for regressing cash conversion cycle as an independent variable

$$(7) \text{ } GOP_{it} = \beta_0 + \beta_1 (\text{CCC}_{it}) + \varepsilon$$

$$(8) \text{ } ROA_{it} = \beta_0 + \beta_1 (\text{CCC}_{it}) + \varepsilon$$

Where:

GOP = Gross Operating Profit

ROA= Return on Assets

ID = Inventory Turnover in Days

ARD= Accounts Receivable Days

APD= Accounts Payable Days

CCC= Cash Conversion Cycle

ε = Error Term

4.2.3.1 Effects of inventories on company's profitability

H_{a2}: There is a relationship between inventory turnover days and profitability.

H_{o2}: No relationship between inventory turnover days and profitability.

The results of the regression analyses studying the relation between inventories and profitability is represented in the tables 4.3 - 4.6. The coefficient implies that the increase or decrease in the inventory turnover in days, significantly affect profitability of a firm. These results are robust, since all the models showed a significant negative relation.

Result of multiple regressions for model 1;

$$(1) \text{ GOP}_{it} = \beta_0 + \beta_1 (\text{ID}_{it})$$

$$\text{GOP}_{it} = 47.951 - 0.147 (\text{ID}_{it})$$

$$\text{Adjusted } R^2 = 0.083$$

$$\text{Durbin Watson} = 1.643$$

Table 4.3: Results of regression analysis- coefficients table

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	47.951	4.483		.000
	ID	-.147	.044	-.302	.001

a. Dependent Variable: GOP

Source: SPSS output from financial statements of sample companies, 2008-2012

Table 4.4: Results of regression analysis- ANOVA table

ANOVA ^b					
Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	3525.514	1	3525.514	11.141	.001 ^a
Residual	35125.920	111	316.450		
Total	38651.434	112			

a. Predictors: (Constant), ID
GOP

b. Dependent Variable:

Source: SPSS output from financial statements of sample companies, 2008-2012

$$(2) ROA_{it} = \beta_0 + \beta_1 (ID_{it})$$

$$ROA_{it} = 8.151 - 0.041 (ID_{it})$$

$$\text{Adjusted } R^2 = 0.056$$

$$\text{Durbin Watson} = 1.804$$

Table 4.5: Results of regression analysis- coefficients table

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	8.151	1.511		5.396	.000
ID	-.041	.015	-.254	-2.772	.007

a. Dependent Variable: ROA

Source: SPSS output from financial statements of sample companies, 2008-2012

Table 4.6: Results of regression analysis- ANOVA table

ANOVA ^b						
	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	276.104	1	276.104	7.684	.007 ^a
	Residual	3988.559	111	35.933		
	Total	4264.663	112			

a. Predictors: (Constant), ID
ROA

b. Dependent Variable:

Source: SPSS output from financial statements of sample companies, 2008-2012

4.2.3.2 Effects of accounts receivables on firm's profitability

H_{a3}: There is a relationship between debtor's turnover days and profitability.

H_{o3}: No relationship between debtor's turnover days and profitability.

A look on the Table 4.7 and 4.9 show regression analyses results indicate a significant positive relation between accounts receivables and gross operating profit and return on assets. All the results shows 5% of significance. These results are robust, since all the models showed a significant positive relation.

Result of multiple regressions for model 2;

$$(3) \text{ GOP}_{it} = \beta_0 + \beta_1 (\text{ARD}_{it})$$

$$\text{GOP}_{it} = 28.588 + 0.129 (\text{ARD}_{it})$$

$$\text{Adjusted } R^2 = 0.026$$

$$\text{Durbin Watson} = 1.663$$

Table 4.7: Results of regression analysis- coefficients table

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	28.588	3.226		8.861	.000
	ARD	.129	.064	.187	2.011	.047

a. Dependent Variable: GOP

Source: SPSS output from financial statements of sample companies, 2008-2012

Table 4.8: Results of regression analysis- ANOVA table

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1358.300	1	1358.300	4.043	.047 ^a
	Residual	37293.134	111	335.974		
	Total	38651.434	112			

a. Predictors: (Constant), ARD

b. Dependent Variable: GOP

Source: SPSS output from financial statements of sample companies, 2008-2012

$$(4) ROA_{it} = \beta_0 + \beta_1 (ARD_{it})$$

$$ROA_{it} = 2.443 + 0.043 (ARD_{it})$$

$$\text{Adjusted } R^2 = 0.027$$

$$\text{Durbin Watson} = 1.703$$

Table 4.9: Results of regression analysis- coefficients table

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	2.443	1.072		2.280	.025
ARD	.043	.021	.188	2.013	.047

a. Dependent Variable: ROA

Source: SPSS output from financial statements of sample companies, 2008-2012

Table 4.10: Results of regression analysis- ANOVA table

ANOVA ^b					
Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	150.230	1	150.230	4.053	.047 ^a
Residual	4114.433	111	37.067		
Total	4264.663	112			

a. Predictors: (Constant), ARD

b. Dependent Variable: ROA

Source: SPSS output from financial statements of sample companies, 2008-2012

4.2.3.3 Effects of accounts payables on firm's profitability

H_{a4}: There is a relationship between creditor's payable days and profitability.

H_{o4}: No relationship between creditor's payable days and profitability.

The results of the relation of accounts payables and a firm's profitability are given in tables 4.11 and 4.13. The regression analyses using the dependent variable gross operating profit shows a positive effect of accounts payables on firm's profitability, with 5% significance. The results of the return on assets regression analyses show a 1% significant positive relation. The results of both the dependent variables are robust, because all the regression models show a positive relationship.

Result of multiple regressions for model 3

$$(5) \text{ GOP}_{it} = \beta_0 + \beta_1 (\text{APD}_{it})$$

$$\text{GOP}_{it} = 27.878 + 0.256 (\text{APD}_{it})$$

$$\text{Adjusted } R^2 = 0.043$$

$$\text{Durbin Watson} = 1.788$$

Table 4.11: Results of regression analysis- coefficients table

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	27.878	3.049		9.144	.000
APD	.256	.104	.227	2.453	.016

a. Dependent Variable: GOP

Source: SPSS output from financial statements of sample companies, 2008-2012

Table 4.12: Results of regression analysis- ANOVA table

ANOVA ^b						
	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1987.901	1	1987.901	6.018	.016 ^a
	Residual	36663.532	111	330.302		
	Total	38651.434	112			

a. Predictors: (Constant), APD
GOP

b. Dependent Variable:

Source: SPSS output from financial statements of sample companies, 2008-2012

$$(6) \text{ROA}_{it} = \beta_0 + \beta_1 (\text{APD}_{it})$$

$$\text{ROA}_{it} = 1.58 + 0.111 (\text{APD}_{it})$$

$$\text{Adjusted } R^2 = 0.088$$

$$\text{Durbin Watson} = 1.944$$

Table 4.13: Results of regression analysis- coefficients table

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.580	.993		1.591	.114
	APD	.111	.034	.296	3.267	.001

a. Dependent Variable: ROA

Source: SPSS output from financial statements of sample companies, 2008-2012

Table 4.14: Results of regression analysis- ANOVA table

ANOVA ^b						
	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	374.178	1	374.178	10.676	.001 ^a
	Residual	3890.485	111	35.049		
	Total	4264.663	112			

a. Predictors: (Constant), APD

Source: SPSS output from financial statements of sample companies, 2008-2012

4.2.3.4 Effects of the cash conversion cycle on firm's profitability

H_{a5} : There is a relationship between cash conversion cycle and profitability

H_{o5} : No relationship with cash conversion cycle and profitability

Finally, the cash conversion cycle is used as a popular method to measure efficiency of working capital management. Therefore, model 4 took the cash conversion cycle as an independent variable, and the result on table 4.15 and 4.17 indicate that CCC has negative coefficient with gross operating profit and return on assets at a significant level of 5%. This means that there is a negative relationship between cash conversion cycle and firms profitability.

The results of the study show a -3.1% impact on gross operating profit and -2.69% impact on Return on Assets. Somewhat similar results were found by Karaduman et al. (2011) who found – 2% impact on profitability.

Result of multiple regressions for model 4

$$(7) \text{ GOP}_{it} = \beta_0 + \beta_1 (\text{CCC}_{it})$$

$$\text{GOP}_{it} = 42.156 - 0.072 (\text{CCC}_{it})$$

$$\text{Adjusted } R^2 = 0.031$$

$$\text{Durbin Watson} = 1.673$$

Table 4.15: Results of regression analysis- coefficients table

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	42.156	4.168		10.115	.000
	CCC	-.072	.034	-.198	-2.130	.035

a. Dependent Variable: GOP

Source: SPSS output from financial statements of sample companies, 2008-2012

Table 4.16: Results of regression analysis- ANOVA table

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1517.716	1	1517.716	4.537	.035 ^a
	Residual	37133.718	111	334.538		
	Total	38651.434	112			

a. Predictors: (Constant), CCC
Variable: GOP

b. Dependent

Source: SPSS output from financial statements of sample companies, 2008-2012

$$(8) ROA_{it} = \beta_0 + \beta_1 (CCC_{it})$$

$$ROA_{it} = 6.774 - 0.022 (CCC_{it})$$

$$\text{Adjusted } R^2 = 0.026$$

$$\text{Durbin Watson} = 1.880$$

Table 4.17: Results of regression analysis- coefficients table

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	6.774	1.388		4.881	.000
CCC	-.022	.011	-.185	-1.983	.050

a. Dependent Variable: ROA

Source: SPSS output from financial statements of sample companies, 2008-2012

Table 4.18: Results of regression analysis- ANOVA table

ANOVA^b

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	145.973	1	145.973	3.934	.050 ^a
Residual	4118.690	111	37.105		
Total	4264.663	112			

a. Predictors: (Constant), CCC
Variable: ROA

b. Dependent

Source: SPSS output from financial statements of sample companies, 2008-2012

4.2.4 Hypotheses Testing

The researcher can make decisions about acceptance or rejection of the hypothesis based on the statistical significance of the regression model.

Decision rule is,

If $P < 0.05$ —————> Reject the null hypothesis

If $P > 0.05$ —————> Accept the null hypothesis

Considering the above data analysis, decisions regarding the hypotheses identified in this study can be concluded as follows. For the first hypothesis (H_{01}) that talks about efficient working capital management significantly affects profitability of firms is the one to be accepted. Therefore the alternative hypothesis (H_{a1}) is accepted and the null hypothesis (H_{01}) is rejected. Because, the finding in the analysis section supported this hypothesis that, managing debtors' collection period, inventory turnover days and accounts payable days efficiently to minimum and reasonable range will increase the company profitability. In the same way the second, third and fourth hypotheses can be accepted as mentioned in the table 4.19.

Table 4.19: Results of correlation and regression analysis

Independent Variable	Dependent Variable	β	Adjusted R^2	P value	Hypothesis results
Inventory Turnover Days	GOP	-0.302	0.083	0.001	H_{a2} Accepted
Inventory Turnover Days	ROA	-0.254	0.056	0.007	H_{a2} Accepted
Accounts Receivable Days	GOP	0.187	0.026	0.047	H_{a3} Accepted
Accounts Receivable Days	ROA	0.188	0.027	0.047	H_{a3} Accepted
Accounts Payable Days	GOP	0.227	0.043	0.016	H_{a4} Accepted
Accounts Payable Days	ROA	0.296	0.088	0.001	H_{a4} Accepted
Cash Conversion Cycle	GOP	-0.198	0.031	0.035	H_{a4} Accepted
Cash Conversion Cycle	ROA	-0.185	0.026	0.05	H_{04} Accepted

4.3 Qualitative approach

In analysing data gathered by conducting the semi structured interviews, first, the ideas provided by each of the respondents were summarized and presented (Please refer Appendix III to VI for the summaries of interviews conducted). Next, they were compared against each other to discover similarities and differences between them.

Level of priority placed on managing working capital

All the respondents rated the managing working capital as high, if not their highest priority as working capital is considered as important in the business as a whole.

Main causes for the companies to increase its focus on working capital

Management has increased its focus on working capital management as the economic downturn has hit many companies hard. Sales have suddenly plunged in many industries, and as the adjustment of production capacity and volumes often takes time, stocks have increased dramatically. The short term problems are the amount of capital tied up in stocks and getting the necessary liquidity in place. In the medium term, a lot of companies have switched their focus from growth to internal efficiency and working capital management.

Techniques use to improve working capital

Companies use different techniques to manage inventory, debtors and creditors of the company. Techniques used vary from company to company depending on the industry in which the business operates. As a common technique companies try to discuss the weekly or monthly working capital situation of the company in their weekly or monthly management meetings and see whether company has adhered to previously set working capital targets or benchmarks identified with relating to inventory holding period, Debtors collection period and creditors payment period. Debtors and creditors are not considered as very critical areas as most of the respondents say that they have fixed number of customers and suppliers and most of the debtors are secured over bank guarantees. Further companies have maintained

long term relationship with these customers and suppliers which ensure the timely collection of money from debtors and favourable credit terms from creditors.

Sourcing liquidity for working capital needs

Bank funding has become the major source of liquidity for working capital needs. All the respondents state that they use bank overdraft facilities very regularly to finance day to day business operations. Although bank funding has become a very popular method of sourcing liquidity, with the current economic downturn companies have to incur huge finance cost which will ultimately erode the profit margin of the company. But respondents said that due to their long term relationship with banks and goodwill of the company, they have immediate access to bank funding and banks also ready to grant short term loan facilities at a reduced interest rate (rate slightly reduced from the market rate). If the company considered is a group of company, fund requirements are sourced by their immediate parent company at a very lower rate of interest. Internally generated funds also used for the working capital needs but it is not much popular than bank funding and borrowings from intercompany.

Cash investment strategies

Companies cash investment strategies vary depending on their existing liabilities, group structure etc. If the company is having a huge amount of borrowings, excess funds generated through business operations are utilized only for the purpose of settling borrowings while other companies look for reinvestment opportunities within the business itself rather considering investment opportunities which cause the funds to flow outside from the company.

Greatest potential improvements in working capital management

There is a growing focus on optimising working capital. Working capital is influenced by both internal and external factors. According to the respondents the largest potential improvements can be found within the optimisation of internal processes or improved compliance with already existing internal procedures.

Payment terms, for suppliers and customers alike, have a considerable influence on working capital. The results of interviews show that companies place some focus on this area, but very often find it extremely difficult to implement changes due to lack of negotiating opportunities exist with foreign suppliers and customers as the company has to accept the world market prices when goods are importing and exporting. Further companies avoid late payments to its suppliers to reduce the unfavourable impacts of unnecessary fluctuation in exchange rate. Also it is difficult to optimise the Customer conditions due to the high competition in the market. If the company reduces its credit period offered to the customers, company will face the threat of losing the customer.

There is considerable potential for optimization of inventory as realisation of inventory is in the company's own hands and does not depend on negotiations with external parties. companies see great potential improvements with regard to purchasing and stocks. Further, in many situations, it is easier for a company to optimise its internal processes than to improve external payment terms determined by both the company's negotiating power and customers/suppliers.

Assess performance in working capital management

Most of the companies have included Optimisation of working capital in the company's formulated targets and financial strategies and have identified KPIs relating to the working capital. Companies that have working capital management as part of their targets use working capital key data and figures in management reporting and follow up actions are taken if there are any significant deviations from the target value. These management discussions are taken place to assess the performance weekly or monthly. Hence working capital performances are continuously and regularly assessed.

Some companies assessed working capital performance against benchmarks. Companies assess their performance against peer companies or group wide established benchmarks to evaluate the effectiveness of working capital.

Practical difficulties companies face when implementing techniques to improve working capital and strategies implemented to overcome such difficulties

The interviews conducted reveal that working capital is a strong focus area among the participating companies. However, it further indicates that in practice, many companies find it difficult to turn good intentions into action. Good working capital management free up significant liquidity, but it always requires constant attention to avoid falling back into old routines, which increases the amount of capital tied up. So it is important to identify new techniques to improve working capital and ensure that new work processes are firmly implemented in the company.

Challenges in terms of managing working capital

Finally respondents were asked about the challenges they face in terms of managing working capital of the company. All the respondents indicate the point that adverse fluctuations in economic condition have become a challenge in terms of managing working capital. This has been critical as optimizing working capital has a direct impact on the company's profitability and on the other hand adverse economic conditions hit the profitability. Further it shows that successful optimisation and sustained improvements require continuous attention from managers and employees at all levels of the organization.

4.4 Conclusions

In order to address the research objectives and hypotheses, as detailed in chapter 1 and 3, this chapter presented and analyses the statistical and regression results which are computed using different methods adopted to investigate the impacts of working capital management on firms' profitability. Accordingly, this chapter presents the test results for descriptive statistics, result of Pearson's correlation coefficient and multiple regressions. Based on the results and data analysis finally we have tested the hypotheses identified in the chapter 3 of the report.

CHAPTER 5

DISCUSSION

5.1 Introduction

In this chapter, the researcher discusses the empirical results presented in the chapter 4. The empirical findings are compared with the theory and evidence from previous empirical studies.

5.2 Profitability

The mean and median of gross operating profit (GOP) found in this study are respectively 34.07% and 4.35%. These numbers can be matched with the results in Vietnam by Dong and Su (2010) who found a mean of 35% and Gill et al. (2010) who found a mean of 30% in the US. Table 4.1 shows that the mean value of return on assets is around 4%, while the median is 36%. Other studies who used ROA as the dependent variable, found very different means and medians. Falope and Ajilore (2009) found in Nigeria a mean of 16% and a median of 15%, Sharma and Kumar (2011), respectively 197% and 171% in India and Samiloglu and Demirgunes (2008) found a mean of 2% in Turkey. These different results may due to different economic conditions prevailing in the country under study.

5.3 Inventory Management

The findings of this study for the number of days of inventories are on average 94.26 days with a median of 84.01 days. Studies done by Garcia-Teruel and Martinez-Solano (2007), Dong and Su (2010), Raheman and Nasr (2007) and Gill et al. (2010) found an average near or above 80 days of inventories.

Correlation results between inventory turnover in days with gross operating profit and inventory turnover in days with return on assets indicate that the result is highly significant at 1% level and that if the inventory turnover in days increases it will have a negative impact on the profitability and therefore GOP and ROA will be decreased. It also indicates that if the

firm takes more time in selling inventory, it will adversely affect its profitability. This relation is consistent with the results of the correlation analyses conducted by Falope and Ajilore (2009), Karaduman et al. (2011), Deloof (2003), Raheman and Nasr (2007) and Garcia-Teruel and Martinez-Solano (2007). This relationship among inventory and profitability can be further proved by interview results. All the respondents identified inventory as the most critical component in managing working capital because lack of management may cause stock out issues and increase costs of the company including opportunity cost, while adversely affecting the profitability of the company. Therefore companies have increased its focus on optimisation of inventory in managing working capital.

5.4 Accounts Receivable Management

The average number of days accounts receivables of the sample is 42.65 days and has a median of 40.68 days. These results are somewhat lower than the findings of Deloof (2003) of respectively 54.64 days and 51.44 days, Gill et al. (2010), who found an average of 53.48 days in the US, Dong and Su (2010), who found an average of 51.91 days and of Raheman and Nasr (2007), who found a mean of 54.79 days.

Correlation results of the accounts receivable days both with gross operating profit and return on assets indicated that the result is significant at 5% level and that if the accounts receivable days increases it will have a positive impact on the profitability and therefore GOP and ROA will be increased. This indicates that firms can create profit by keeping the levels of their accounts receivables to a high level. This positive effect of accounts receivables on a firm's profitability is found by Sharma and Kumar (2011), and they argue that this is caused by the fact that Indian firms have to grant more trade credit to sustain their competitiveness with their foreign competitors, which have superior product and services. This argument is much applicable in Sri Lankan context as most of the manufacturing companies considered in this study are export oriented and hence face the global competition.

These results indicate that an increase of accounts receivables by one day increases the profitability of a firm in the next year by approximately 12.9% for the GOP measure and

approximately 4.3% for the ROA measure. The most notable of these results is that they all show a positive significant sign. It implies that firms are better off increasing their number of days accounts receivables, based on the profitability of the next year. The reason for this is that larger firms are lending aid to their financially constraint customers and by doing that, saving a part of their future sales. Since these future sales are only enhancing the profitability of a firm in the near future, makes these positive relations very reasonable. What also needs to be highlighted here is that the potential benefits of these firms, by lending aid to their customers, are very likely to increase overtime. The regression analyses are only a snapshot of the short-term benefits.

5.5 Accounts Payable Management

The average days of accounts payables used by firms of the sample of this study is 24.22 and with a median of 22 days. Higher average results was found by Gill et al. (2010), who found an average of 49.5 days, by Deloof (2003), who found a mean of 56.77 days with a median of 51.96 days, by Dong and Su (2010), who found an average of 45.4 days, by Raheman and Nasr (2007), who found an average of 59.85 days and by Falope and Ajilore (2009), who found an average of 39.77 days and a median of 43.56 days.

Positive relationship between accounts payable days and profitability proves the theory of cash conversion cycle, which prescribes that firm's need to keep their accounts payables as high as possible. This is because profitable firms wait longer to pay their bills and firms use these short-term loans as a source of funds to increase their working capital investment and thus increasing their profitability. Based on the findings it can be observed that longer account payables period gives higher profit. It is quite logical because account payables are the cheapest way to finance a business and larger duration of account payables will allow a company to offer a larger credit period to its customers that will raise the sale and profitability. In addition it is quite likely that company doesn't need to borrow money, which will save interest money, to pay its account payables if the maturity period of account payables is larger than the credit period offer by the company to its customers.

5.6 Cash Conversion Cycle

The findings of the cash conversion cycle (CCC) vary for the different firms of the sample. The difference between the lowest CCC of 15 days and the highest of 254 days is staggering. The average cash conversion cycle of the firms in the sample is 112.69 days with a median of 103.2 days. Studies among the literature of working capital show various different averages of the CCC. Gill et al. (2010) found an average of 89.94 days, Raheman and Nasr (2007) found an average of 72.96 days, Lazaridis and Tryfonidis found a mean of 188.99 days while Sharma and Kumar found the highest average of 449.09 days.

As per the results of Pearson's correlation coefficients cash conversion cycle is negatively related with profitability of the company. It means that if the firm is able to decrease this time period known as cash conversion cycle, it can increase its profitability. By analyzing these results it can be concluded that, if the firm is able to reduce these time periods, then the firm is efficient in managing working capital. This efficiency will lead to increase in profitability.

5.7 Different strategies companies adopt to manage working capital efficiently

According to the results, the finance manger takes the sole responsibility for managing and financing working capital components. In some companies, however, the senior accountant takes the responsibility for working capital management.

Management of inventory: the finance manager plays a major role in inventory management. In some companies, however, store manager or production manager is responsible for managing inventory. Several techniques are used for the purchase and replacement of inventory by Sri Lankan manufacturing companies. The responded firms use material requirements planning (MRP) as their inventory planning technique. Industry guidelines and economic order quantity (EOQ) techniques are also used. Responded companies never take ad-hoc decisions on inventory management.

Management of debtors: Most of the manufacturing companies in Sri Lanka grant credit to their customers and the major reason behind this is the competition existing among

companies. Most of the manufacturing companies investigate characteristics of their customers. The main characteristics of the customer are capacity, capital, condition and character. Debtors' payment behavior is monitored through ageing schedule. Collection period and collection experience are used as second important debtors payment monitoring technique.

Management of creditors: Most of the companies maintain less accounts payables than accounts receivables. According to the results, the Sri Lankan manufacturing companies generally operate on a deficit-credit basis, and as a consequence, they depend on non-spontaneous sources for financing their trade deficits.

Cash management: All the respondents said that they do cash management for speculative and transaction purposes. Responded companies engage in short-term investments when they have excess liquidity, the reason is to gain better return on their funds. The motive for having short-term investments lies in the liquidity of such assets and companies can have an easy access to them when they have unexpected investment opportunities or need to finance sudden expenses. No firm manages cash for precautionary or bank compensating purposes. This is for two main reasons. First if the firms need cash, the bank overdraft facility is there to use, hence there is no need to keep extra cash for precautionary purposes. Third, the banks do not require any compensating balance for extending overdraft facilities so they do not need to deposit extra cash for that purpose. Therefore, all the firms do not have a problem of borrowing from the bank. Easy availability is some time causing idle cash within companies, but sometimes, survival of firms is based on the bank financing.

Working capital financing: Companies need their working capital to meet their regular, seasonal and cyclical needs. Bank financing is the major source of financing the working capital needs in Sri Lanka. Responding companies finance their short-term investment needs through bank financing sources such as bank overdrafts.

Performance Evaluation of Working Capital Decision: In order to assess the performance in working capital management, all respondents reported that they compare their past performance with their present achievements, actual with the expected performance and

comparing inter-firm benchmarks. Moreover, all respondents also use quick ratio for keeping the eye on liquidity. Inventory and receivable turnover are commonly used for analyzing operational efficiency. By the interview with finance managers, it is observed that they check their short term debt leverage by calculating current debt to total debt. Further they use net profit margin, return on working capital investment and return on total investment for checking profitability.

5.8 Challenges in efficient management of working capital

Most of the companies are struggling to improve working capital performance, for a variety of reasons, including corporate complacency and lack of clarity from leadership at the top. *“Managers at the top need to realise that the real success of the business is based on their ability to keep close control over cash flows, avoiding holding excessive stocks and collecting debts on time”* said senior accountant who is responsible for handling working capital management in ACL Cables PLC. Further he emphasized that; *“delivering a quality service ensures timely payment however, top management need to recognise that they need to do something positive to ensure timely payment from debtors, have to ensure that they send timely invoices to their customers. Overdue credit accounts avert further sales to the slow paying customer. This overdue account ties up seller’s working capital and can also lead to losses from bad debts”*. According to him, most of the time top management focus more on technical matters and forget about cashflows. Chief Financial Officer of Bogala Graphite Lanka PLC states that lack of knowledge and experience of labour may constrain the achievement of objectives which may hinder the efficient management of working capital of the company.

“It is always challenging task to companies, manage their working capital in the current economic downturn with relatively expensive finance and patchy growth” said Finance Manager of Singer Industries (Ceylon) PLC. He elaborated this issue as *“High borrowing cost due to interest rate increase and high fluctuations in foreign exchange rate have negative consequences over company’s profitability. These bad implications of economic climate have a direct link with working capital management and company faces practical difficulties to manage working capital efficiently to increase the company’s profitability”*.

Group Finance Manager of Royal Ceramics Lanka PLC stated that *“High interest rate prevailing in the market has a negative impact on the construction industry. This has a direct impact to the company”*. These comments indicates that to successfully meet the challenges in working capital management in the current economic situation companies should adopt the practices, processes and technologies which increase the understanding of working capital performance among all levels of employees Cooperation among all departments and support from top management is essential to overcome some practical difficulties. Thus managing working capital should not be restricted to finance department of the company or finance manager’s job role. It should be embedded in the company’s main business strategy to ensure the acceptance of company as a whole

5.9 Conclusion

Based on the results of the study it can be concluded that cash conversion cycle is longer, profitability is smaller. Hence, the company managers can build firms value by reducing the cash conversion cycle to a reasonable range or managers can create profits for their companies by handling correctly the cash conversion cycle and keeping each different component (accounts receivables, accounts payables, inventory) to an optimum level. In the short term, companies risk being short on liquidity if the working capital level deteriorates. In the long term, too much working capital lowers the return on investments and reduces the value of the company. In contrast, a reduction of the working capital can significantly improve cash flows and free up capital from a company’s balance sheet. This capital can then be used to reduce debts, pay dividends to investors or reinvest in company growth.

CHAPTER 6

CONCLUSION AND RECOMMENDATION

6.1 Introduction

The basic intent of this chapter is to present the overall overviews of the research by summing the main findings of the analysis part and give future research directions. Accordingly, the chapter started its discussion by briefly sum up the overviews of the study and its main findings. In section two based on the study finding the researcher highlight some recommendations for the target populations the study pivoting on. Finally, the research strengths together with the limitations of the study, future research directions are presented in section three.

6.2 Conclusion

The purpose of this study is to investigate Working capital management and firm's performance in the listed manufacturing sector of Sri Lanka. The study aimed to examine the statistical significance between listed manufacturing companies' working capital management and profitability, different strategies companies adopt to manage working capital and identify barriers that retard the efficient management of working capital in the organizations. In the light of these objectives the study adopted quantitative as well as qualitative methods of research approaches (mixed research approach).

This study has adopted quantitative method of research approach to test series of research hypothesis. Specifically, the study used, review of companies' audited financial statements. The study selected a sample of thirty (30) companies for the period of five years (2008-2012) with the total of 113 observations. Data was then analyzed on quantitative basis using Pearson's correlation and regression analysis.

Inventory management is best managed if it's kept to a minimum. This is based on the negative significant relation found during the period concerned under the study. During this period a stronger, negative and significant effect of inventories is found on the profitability of

a firm. This means that the impact of inventory level on the profitability of a firm is higher. For this reason firms should give more attention to the inventory levels, make certain levels of inventories and are kept at a reasonable minimum.

The analyses of the number of days accounts receivables indicate that there is a significant positive relation between these days and firm's profitability. This suggests that on the somewhat longer-term it's beneficial for larger firms to aid their financially constraint customers through the increase of their accounts receivables. This is caused by the fact that future sales of this customer are saved this way. Furthermore, long-term benefits of this aiding are not studied in this thesis and are very likely to be a lot more than the short-term benefits. The firms need to take an in-depth view of their customers and try to find out that if their aid, through their accounts receivables, realizes the survival of their customers. If this is indeed the case then the choice of giving a customer trade credit depends on the short-term benefits but mainly on the long-term benefits and the risk that is taken by this choice.

The relation between the number of days accounts payables and firm's profitability is positive, robust and significant. The positive relationship between accounts payable and profitability is consistent with the view that less profitable firms wait longer to pay their bills. This indicates that longer account payables period gives higher profit. It is quite logical because account payables are the cheapest way to finance a business and larger duration of account payables will allow a company to offer a larger credit period to its customers that will raise the sale and profitability. In addition, it is quite likely that company doesn't need to borrow money, which will save interest money, to pay its account payables if the maturity period of account payables is larger than the credit period offer by the company to its customers.

Cash Conversion Cycle that is used as measuring efficiency of working capital management showed that, as cash conversion cycle is longer, profitability is smaller. Hence, it can be recommended that company managers can build firms value by reducing the cash conversion cycle to a reasonable range or managers can create profits for their companies by handling correctly the cash conversion cycle and keeping each different component (accounts receivables, accounts payables, inventory) to an optimum level.

In general, the study adds to existing literature such as Shin and Soenan (1998), Deloof(2003), Eljelly (2004), Lazaridis and Tryfonidis (2006), Raheman and Nasr (2007), Falope and Ajilore (2009) and Mathuva (2009) who found a strong negative relationship between the measures of working capital management including the inventory turnover in days and cash conversion cycle with corporate profitability.

The finance manager is responsible for managing working capital components. Material requirements planning (MRP) and perpetual inventory control (PIC) systems are key techniques of inventory management. . Debtors' payment behavior is monitored through ageing schedule. Sri Lankan manufacturing companies generally operate on a deficit-credit basis, and as a consequence, they depend on non-spontaneous sources for financing their trade deficits. Most of the working capital funds are obtained from commercial banks in the form of bank overdrafts. Companies do cash management for speculative and transaction purposes. In order to assess the performance in working capital management, companies compare their past performance with their present achievements, actual with the expected performance and comparing inter-firm benchmarks.

Most of the companies are struggling to improve working capital performance, for a variety of reasons, including corporate complacency and lack of clarity from leadership at the top. Further, It is always challenging task to companies, manage their working capital in the current economic downturn with relatively expensive finance and patchy growth.

6.3 Recommendations

- The study found negative relationship between inventory turnovers in days and firms profitability. Here, higher inventory turnover will have higher costs like storage, carrying, spoilages, insurance, and it hold opportunity cost too. As a result, companies' manager has to look over the proper ways of inventory control techniques like economic order quantity (EOQ) or others depend up on the nature of materials they hold. Further, the researcher recommended that companies marketing, purchasing and manufacturing departments should have create strong linkage and communications so as to feed each other in firms' operations and minimize costs.
- The positive relationship between firms' gross operating profit and average collection period will increase firms' profitability, if there is high collection of account receivables. Therefore, companies have to maintain or adopt a credit policy so as not to lose customers and hence, increase firms' profitability.
- We observed that longer account payables period gives higher profit. However, it is recommended that firms' have to pay all its debt or bills on time for not losing their venders in the long run.
- CCC has a negative relationship with firms' profitability. Therefore, regarding the CCC, it is recommended that lowering working capital cycle as a measure of efficient working capital management is the one to be appraised. However, the policy followed for each component has to be neither tight or nor liberal like for average collection period which will loss customers and increase bad debt respectively. Similarly, as recommended above companies' has to manage their inventories (raw materials, working process and finished goods) and account payables in day efficiently to a minimum level, so as to minimize the overall working capital cycle of a firms' and increase profitability.

6.4 Research limitations and future research directions

This research tried to meet the gap between the existing literatures but it also has its limitations and those limitations can be addressed by the researchers in the future.

The main limitation of this study is the relative small sample size, which consists of 113 firm-years. Other research such as Deloof and Shin and Soenen used respectively 5,045 and 58,985 firm-years.

Further limitations are caused by the fact that the analyses are done with annual data. Future research can be more precise when using data based on quarterly data. It would be even more precise when average quarterly data is used for the number of days accounts receivables, accounts payables and inventories.

In order to find out the relationship between working capital policy and profitability most of the empirical studies focused on the accounting measures of profitability. Research can be repeated by considering the performance measures of profitability e.g. economic value added, market value added etc.

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APPENDICES

A List of names of firms

1. Royal ceramics lanka plc
2. Piramal glass ceylon plc
3. Ceylon grain elevators plc
4. Lanka aluminium industries plc
5. Acl cables plc
6. Acme printing & packaging plc
7. Tokyo cement company (lanka) plc
8. Lanka walltiles plc
9. Laxapana batteries plc
10. Hayleys fibre plc
11. Singer industries (ceylon) plc
12. Chevron lubricants lanka plc
13. Bogala graphite lanka plc
14. Kelani cables plc
15. Lanka cement plc
16. Lanka floortiles plc
17. Swadeshi industrial works plc
18. Dipped products plc
19. Lanka ceramic plc
20. Acl plastics plc
21. Orient garments plc
22. Samson international plc
23. Richard pieris exports plc
24. Printcare plc
25. Kelani tyres plc
26. Regnis(lanka) plc
27. Swisstek (ceylon) plc
28. Sierra cables plc
29. central industries plc
30. Abans electricals plc

Interview Guideline

1. What level of priority do you place on managing working capital?
2. What are the main causes for your company to increase its focus on working capital?
 - Performance against peers
 - Rising cost of debt
 - Reduced access to debt
 - Pressure from stakeholders (banks, board of directors etc)
 - To fund acquisitions
 - To return cash to shareholders
 - To pay down debt
 - Other
3. What techniques are you using to improve working capital? (Inventory, Debtors, Creditors)
4. How are you sourcing your liquidity for your working capital needs? (Internal, Bank-sourced liquidity, Capital markets as a source of funding vs. bank provided, External sources of liquidity outside of bank support)
5. What is your cash investment strategy?
6. Where do you think the greatest potential improvements lie in relation to working capital management? (in optimising supplier conditions, in optimising customer conditions, in optimising stocks)
7. How has the current economic climate impacted your ability to manage working capital?

8. How have concerns about risk mitigation affected working capital management?
9. How do you assess the performance in working capital management? (benchmarks used to assess performance)
10. What practical difficulties do you face when implementing techniques to improve working capital of your company and what are the strategies you have implemented to overcome those difficulties?
11. What are your organizations 3 biggest challenges in terms of managing working capital?

Appendix III

Name of the Company: ACL Cables PLC

Name of Interviewee: Mr. Sudarsha Withana (Senior Accountant)

Date: 18 March 2013

Time 3.00 p.m – 4.00 p.m

Optimisation of working capital comes as a top priority task in the Senior Accountant's job role.

Main causes for the ACL Cables PLC to focus on working capital are performance against peers as the company measures its weekly working capital performance with Kelani Cables PLC which is a subsidiary of ACL Cables. Next main cause is rising cost of debt. This has become a major issue under the current economic condition as the company has high level of loan borrowings (Rs. 1.2 Bn Loans) and thus servicing loans with interest is become a burden to the bottom line of the income statement. Other than these, the company wants to ensure the on time payments to its suppliers, which has then increased its focus on working capital management.

As per the Senior Accountant, inventory is considered as the most important component of working capital management in the company. Hence to ensure the efficient inventory management on every Monday the purchasing Manager of the company forecasts the raw material requirements for the upcoming two months by taking into consideration the current inventory levels and order requirements. Raw material buying decisions are made based on such forecasts. Senior Accountant has not placed much weight on managing debtors as 90% of the customers of the company are regular customers and company has had 15 – 20 years relationship with these customers. Therefore considering the past experience these debtors settle their dues on time. Company has given 60 -75 days average credit period to its debtors. When making payments to its foreign suppliers (90% of raw materials are important)

Company uses sight LCs and usance LCs. Company decides whether to go for sight LC or usance LC depending on the economic conditions and exchange rate fluctuations. If the current exchange rate is favourable, company will accept the sight LC and if the company expects to have a favourable exchange rate in the future, company will accept usance LC from its suppliers. In that case company will get 90 days credit period from its suppliers. But due to the unpredictability in the current economic conditions and the exchange rates at present the company mostly uses sight LCs when making payments to its foreign creditors. In order to assess how well the company has achieved working capital weekly management meetings are held on every Wednesday with the participation of Managing Director, Head of Finance, Plant Manager, Head of Purchasing Department and Senior Accountant. In this meeting Senior Accountant presents the working capital position of the company as at Friday of the last week. Thereafter weekly working capital performance is compared with the last 6 months working capital performance. If there's any unusual variation the respective manager should give explanations for such variation.

ACL Cables uses bank sourced liquidity for working capital needs and currently the company has high level of borrowings including 200 Mn Bank Overdraft. Company enjoys more attractive interest rates for their borrowings due to the good reputation of the company and good relationship history the company has had with its banks.

At the moment company is running with a bank overdraft facility of Rs. 300 Mn. Therefore excess funds generated will be used to settling the debts rather than investing.

Senior Accountant states that they cannot optimise the supplier or customer conditions. Supplier conditions cannot be optimised due to lack of negotiation opportunity exists with regard to prices of raw materials they import, as there's a fixed price for aluminum and copper in the world market. Further he says that company make payments to its suppliers as soon as they receive the letter of credit (sight LC) because then the company can avoid the unfavourable impacts of unnecessary fluctuation in exchange rate. Also it is difficult to optimise the Customer conditions due to the high competition in the market. If the company reduces its credit period offered to the customers, company will face the threat of losing the

customer. But company can optimize its inventory and hence it lies the greatest potential improvements in relation to working capital management.

In 2012 CBSL has imposed regulations on banks by restricting the maximum loan amount. As per this CBSL regulation, now a bank can give loans to companies only up to 80% of the previously grant loan value. Increase in debtor's collection period and drop in sales have been experienced by the company as this regulation adversely affect to the dealer/ distributor customers of the company. In 2012, Finance cost has doubled compare to the previous year and this has increased the company's focus on working capital. Company has incurred a massive exchange loss due to the sudden depreciation of Rupee value against the Dollar. As a result, company has decided to accept sight LCs from its creditors rather than accepting Usance LCs to avoice possible exchange losses.

Currently company does not face any working capital issues since the company has easy access to the money market borrowings and enough of assets of the company.

To assess the performance in Working Capital the Company has established KPIs with regard to working capital. So the company should achieve such KPIs weekly assessments are taken place in the management meetings. Other than this KPIs Company's working capital performance is measured against the Kelani Cables (subsidiary of the company) performance as the company has access to its management information.

When it comes to practical implementation of working capital management, company faces lots of difficulties due to the prevailing adverse economic condition.

Finally the company pointed out following 3 as the biggest challenges in terms of managing working capital of the company;

- Lack of understand of the benefits of working capital management by non financial managers and hence the lack of support of them.
- Adverse fluctuation in economic conditions
- Growing market competition.

Appendix IV

Company name: Bogala Graphite Lanka PLC

Name of interviewee: Mr. Sugath Amarasinghe (Chief Financial Officer)

Date: 4 March 2013

Time: 9.00 a.m. – 10.00 a.m.

Highest priority is given on managing working capital as working capital is . Thus the company has increased its focus on working capital to ensure the smooth functioning of day to day business operations and therefore managing the cash flows.

Inventory is considered as the most important component in the working capital. When managing the inventory company try to minimize inventory holding. How the company do this is try to keep stocks at the mine itself. For this, company identify the minable areas and keep them in track and whenever the need arise go there and mine it. Company has a long outstanding relationship with its customers where all the customers are foreign customers as the company is fully export oriented. Customers should pay money for their goods when they receive the documents. Therefore, the Company can collect money from its customers before sending the goods. Company has bad and doubtful debts very hardly. Further debtors are entitled for one month credit period. Considering the creditors, company has very minimal creditors as its main raw material obtains from natural resource where the company should mine and obtain.

In the event of any liquidity Problem Company first go to its parent company which is A.M.G. Mining AG situated in USA. For the LCs and bank guarantees, bank funding is using. Other than these methods internally generated funds are used for the day to day fund requirements.

Excess funds generated through efficient management of working capital is reinvested in the company itself rather investing in shares or treasury bills.

Managing inventory is considered as the most important element in managing the working capital of the company as the managing inventory will lead to the efficient management of other components of the working capital.

Since the company mainly produce and export, changes in world economic climate directly affects to the company. For example reduced demand in Europe market during the financial crisis period, reduced the demand in Asian countries and finally it reduced the demand for company products. As an export oriented company depreciation of LKR against USD is favourably affects to the company. In 2012 company has enjoyed a huge exchange gain due to this. But the effect of this exchange gain has been reduced to some extent due to the service of dollar borrowings. Bogala Graphite is a government owned company some years ago and it is the only company that operates in the mining industry in Sri Lanka. Due to these reasons company always enjoy the government support and these benefits.

Debtors default in payments has been identified as a risky area in relation to the working capital management of the company. To mitigate this risk company is constantly monitoring their customers to identify any bad indicators of survival of the company.

Risk of operational breakdown due to employee strikes would also be a possible issue. To overcome this company has trained all its executives in the operational processes and activities in the field. Hence, if there's any labour union actions take place executives can go to the field and continue its operations.

Company follows the group wise benchmarks set by the parent company. Further at the beginning of each year the company decides its own performance levels for the upcoming year and then company keep watching on these targets throughout the year.

Following practical difficulties are faced by the company when implementing various techniques to improve the working capital of the company.

- Labour union actions. This has been mitigated by training the executives to take over the operations during the strike period. Thus ensuring the continuous production.
- Less demand from the market due to competitors' pricing. – To overcome this issue company is trying to identify new markets in Middle East and other countries.
- Emerging companies in the Sri Lankan context will be a threat to the demand conditions of the company.

Finally, Chief Financial Officer states that below mentioned as the 3 biggest challenges in terms of managing working capital.

- Maintaining right inventory levels
- Operate in a global economic recession
- Driving the workers to achieve the desired output

Appendix V

Company name: Royal Ceramics Lanka PLC

Name of interviewee: B.G. Wasantha Sarathchandra (Group Finance Manager)

Date: 20 February 2013

Time: 3.00 p.m. – 4.00 p.m.

In the Group Finance Manager's schedule, the highest priority is placed on managing working capital. This has been enhanced due to the rising cost of debt and to operate the day to day business activities smoothly.

Inventory is considered as the most significant component of the working capital and significant of debtors and creditors come after inventory. Company keeps its inventory in stores average of 3 months and if the stock is getting accumulated, company takes actions to increase sales to reduce the finished goods inventory by giving discounts and sales promotions. Costs incurred for discounts and sales promotions are quite cheaper than maintaining a higher level of inventory in the stores. Company gives credit facilities only for selected customers. Such credit sales are secured over bank guarantees. Hence there's no risk of collecting money from debtors. Company gets average 90 days of credit period from its creditors. Before selecting a supplier, company calls for quotations and based on the most favourable supplier conditions and the quality of raw materials, the supplier selection decision is taken. Further, since Royal Ceramic is the market leader in the Ceramic Industry the Company has the high negotiation power when deciding the prices. Group Finance Manager states that the company has the power of deciding the price of raw materials and company does not buy its raw materials for the suppliers' price. There are some raw materials scares in supply and for the suppliers who provide these raw materials company give advances to ensure the regular supply of such raw materials.

Company manages its current assets and current liabilities efficiently to generate excess funds (Internal funding). If there's any deficit in funds company obtains funds from Banks such as OD facilities.

Invest in share market is the main cash investment strategy of the company. Company does not invest its money in the Treasury bills due to lower return generated from them.

Greatest potential improvements lie in optimizing stocks in relation to working capital management as stock accumulation is a major issue when managing working capital efficiently. Currently the company cannot optimize its supplier conditions and debtor conditions as company enjoys the maximum benefit by handling debtors and creditors. .

High interest rate prevailing in the market has a negative impact on the construction industry. This has a direct impact to the company. Currently Company experiences the bad consequences of high overdraft interest rate. However due to good reputation and long term relationship with banks company has got an interest rate which is lower than the market rate for overdraft facility.

Company has not encounter any issue relating to working capital during the last 3 – 4 years. Therefore there's no risk related with the working capital management of the company.

In assessing the performance in working capital management, company always uses past year's working capital measures as a benchmark and try to maintain it without any major deviations.

Royal Ceramic faces problems in managing inventory in the practical scenario. Further the company faces a threat of stock out as some raw materials are scares. As a solution company keep stocks which are sufficient for six months operations without any interruption.

Group Financial Manager pointed out below as the 3 biggest challenges in Royal Ceramic in terms of managing working capital.

- Unfavourable economic conditions
- Lack of storage capacity – currently company is building a new warehouse in Meegoda to solve this issue.
- Due to the company policy of not selling goods on credit terms, company may lose the sales opportunities.

Appendix VI

Company name: Singer Industries (Ceylon) PLC

Name of interviewee: Mr. Damitha Wickramasinghe (Finance Manager)

Date: 19 February 2013

Time: 1.00 p.m. – 2.00 p.m.

Singer Industries places highest priority on managing working capital. This is because company is continuously looking for cost reduction options and thus working capital has become a major part of it. Rising cost of debt has become the main cause for the company to increase its focus on working capital.

Managing Inventory has identified as critical in the working capital management. Company maintains raw material inventory only for 3 months. Company has to maintain a high level of inventory to meet the warranty requirements of the sold products. Company gets its main raw materials from Singer Asia which is the ultimate parent of the company. Further it gets 30 days credit period from local suppliers and 90 days credit period from foreign suppliers. Company does not have debtors, since its products are solely made to the Singer Sri Lanka which is an intercompany. Therefore, there's no issue in collecting money from debtors.

Singer (Ceylon) Limited is backed by their immediate parent company, i.e. Singer (Sri Lanka). Thus for the short term funding requirements, money is borrowed from Singer (Sri Lanka) before going for the bank borrowings. Obtain funds from banks is the second option of the company.

Company's cash investment strategy is investing excess funds in Singer Finance (Lanka) PLC for 6 months period. Singer Finance (Lanka) PLC is an intercompany of Singer (Ceylon) PLC and by investing cash in its finance company Singer group ensures that money does not go out from the Singer group.

High borrowing cost due to interest rate increase and high fluctuations in foreign exchange rate have negative consequences over company's profitability. These bad implications of economic climate have a direct link with working capital management and company faces practical difficulties to manage working capital efficiently to increase the company's profitability.

Finance manager states that there's no risk relating to working capital management as it has intercompany suppliers and debtors. Therefore cash collection from debtors and payment made to creditors is not a problem.

In the annual budgetary process company sets its working capital measures for the upcoming year and then company measure its performance against the budget. Other than this Company assesses the performance of working capital in the monthly management meeting. In this meeting working capital measures and unusual variations in such measures are discussed. Further global performance reviews are carried out by the ultimate parent company (Singer Asia).

When the marketing department introduces a new model change, managing inventory becomes a issue due to the accumulation of finished goods inventory. The inventory stocks include unsold goods but currently there's no market for such goods due to the new model introduction. But the company has to maintain such stocks to fulfill the warranty requirements. Same issue arises with the seasonal changes during the March and April months.

In terms of managing working capital, company has to face below challenges, to ensure the efficient management of working capital:

- Corporate with Singer (Sri Lanka) marketing division is a challenge as when they plan to introduce a new model to the market, manufacturing division should prepare to provide the finished goods as demanded. This is practically difficult as obtaining and storing raw materials are expensive.
- Managing working capital under the current economic conditions.