

CHAPTER -I

INTRODUCTION

1.1 Background of the Study

Working capital management is an important aspect of the manufacturing companies. Among available options, proper management of working capital is the best possible option to improve their operational viability. Working capital is the crucial aspect of financial management practice in manufacturing enterprises. Thus, the success or failure of any business organization is heavily dependent upon efficiency in its working capital management.

An organization needs not only the fixed capital but also the working capital. To run the day-to-day operations of business, amount invested in the form of raw material, cash, semi-finished goods, receivables, etc. put together is called working capital. There are two concept of working capital, net concepts and gross concept. Net concept of working capital is the excess of current assets over current liabilities. Gross concept is total current assets. It is particularly useful for new companies in deciding the size of investment in each types of current assets. Inadequate investment in working capital threatens the solvency of the company. Excessive investment affects firm's profitability, as idle investment yields nothing. With the increase or decrease in business activities, working capital needs also fluctuate from time to time.

Working capital is sometimes preferred to call as circulating capital as it keeps on circulating in the course of business operations. Business status with cash is converted into inventory after some time. Inventory may be accumulation of raw materials, semi-finished goods and finished goods. The inventory is then converted into receivables and receivables into

cash again. Thus, the cycle becomes complete. This kind of cycle keeps on operating in the business. The length of cycle would differ depending upon the nature of business. The cycle would be short one for non-manufacturing compared to manufacturing firms.

Every company has variable working capital and permanent working capital. Certain portion of working capital always remains permanent working capital. Cash receivables and inventory level in the business would never decline to zero. The working capital other than permanent is called variable working capital. It keeps on changing in course of business operation.

An organization needs to determine the size of working capital as accurately as possible. Neither under-investment nor over-investment in working capital is preferred. A firm therefore should pay proper attention to determinants of working capital, which differ from organization to organization. Some of the important determinants of working capital are nature and size of business, cost and time involved in manufacturing process, turnover of circulating capital, growth and expansion phase, change in business cycles, terms and conditions of sales and purchases, nature of dividend policy and so on. Coordination between production and distribution, developed transport and communication systems, etc. could also play an important role in determining investment in working capital.

Working capital is therefore the size of investment in each type of current asset e.g. cash, receivables and inventory. Decision regarding working capital affects the profitability of the firm in the short run but it affects the very survival in the long run. Faster the turnover of cash into raw material, raw materials into semi-finished goods, semi-finished goods into finished goods, and finished goods into receivable and cash, greater would be the efficiency of the firms.

1.2 Working Capital Practices in Nepal

The working capital management practices in the Nepalese manufacturing enterprises provide totally a different picture. The past trend indicates that many manufacturing companies had given emphasis on fixed assets. Hence, they are facing financial difficulties and lower efficiency.

The government policy to concentrate more on fixed capital has overlooked the financing of working capital (WC.). So, in order to create the culture of risk-bearing ability through commercial prudence and professionalism, the aspect of working capital should be treated in the same way as the fixed capital while deciding the capital structure of the manufacturing companies.

Until recently, the aspect of working capital concerned with short-term financial decisions has not received much attention in the literature of Finance. Because the earlier emphasis of financial management was more on long-term financial decision, it led to the growth and development of many useful theories concerning long-term decision compared to short-term financial decision.

In recent years it has been realized that the areas of working capital intricately inter-woven with the success or failure of the enterprises. Today one may come across with situations where shortage of funds for working capital as well as the uncontrolled over-expansion of working capital has caused many businesses to fail and has stunted their growth. And this aspect of financial management is equally applicable to the small as well as large-scale enterprise. The only difference is that small firms, working capital management can be the factor that decides success or failure whereas in larger firm, efficient working capital management can significantly affect the firm's risk return and share price.

1.3 Introduction of Unilever Nepal Limited.

Nepal lever limited is one of the biggest manufacturing industries in Nepal. It was established in 1994 as joint venture company between Hindustan Lever Limited, India and Nepali promoters under the company act 2021. The factory's registered office is situated at Basamadi Village Development Committee-5 of Makwanpur district, which is about six kilometer far from Hetauda Municipality and its corporate office is situated at Heritage Plaza, Kamaladi, Kathmandu. Few months ago, a notice was issued dated on 18th February, 2005 (2061/11/07) in the "Kathmandu Post" to inform all concerned about the change in the name of the company from Nepal Lever Limited, to Unilever Nepal Limited as per the approved decision taken by eleventh annual general meeting held on 13th Dec. 2004 (2061/08/28) under the special resolution. The change in name has been approved by the company register office/HMG of Nepal with effect from 9th Feb. 2005 (2061/10/27) binding Unilever Nepal Limited to bear assume all the tax and other payable liabilities towards all the movable and immovable assets existing in the company's former name.

Ownership

Unilever Nepal Limited is the first subsidiary company of Hindustan Lever Limited outside of India with holding 80% ownership and has invested Rs.73.7 million in equity. The authorized capital of the company is Rs.30,00,00,000 divided in to 30,00,000 an ordinary share of Rs.100 each and paid up capital is Rs.9,20,70,000 divided in to 9,20,700 of Rs.100 each. The share holding is as follows:

Name of shareholders	No. of share	% of share
Hindustan Lever Limited	7,36,500	80%
Sibkrim Land & Industrial (Pvt.) Ltd	46,035	5%
Public shareholders	1,38,105	15%

Source: Annual Report of UNLtd.

Focus of the study

The main focus of the company is to meet the everyday needs of people everywhere, to anticipate the aspirations of their consumers and customers and to respond creatively and competitively with branded product and services, which raise the quality of life.

Products:

The main products of the company are soap, detergents, cosmetics, creams, toothpaste and toilet soaps. Fair and lovely, Close-up, Sunsilk, Lux, Liril, Pepsodent, Wheel Rin, Red level tea, Lifeboy, Vim, Clinic plus are some of its famous products.

1.4 Statement of the Problem

In most enterprises the management of working capital has been misunderstood as the "management of money" and the managers are found over conscious about the boarding of money rather than its efficient utilization. Regarding the management of working capital sources, most of public enterprises have never thought seriously. They are usually found to depend on HMG/N even for overcoming the shortages of working capital in spite of trying to manage working capital need from their own sources. Some of Public Enterprises have used depreciation fund and utilized surplus to overcome the poverty of working capital. Working capital management has been the most intricate and challenging area of modern corporate finance: as such the

management always faces a trade off between the liquidity and profitability of the firm.

Though most of the manufacturing companies in Nepal have well recognized the importance of proper working capital management, they are still facing the problem of working management.

Administrative negligence in day operation, serious liquidity problem, lower turnover of assets, negative rate of return, inappropriate financing policy, higher production and operating expenses and poor collection and payable policy are the major problem of Nepalese manufacturing companies. Moreover, various factors have been identified for the low economic performance. Among them poor financial management is the prominent one. Financial functions in Nepalese manufacturing companies' mean only procuring and raising of funds. And it is also seen in practice that there is lack of appropriate assets mix policy in Nepalese manufacturing companies can hardly imagined.

There are several indicators of working capital management. So, basically this study has tried to find out the issues of working capital management of UNLtd. In this study, the following research will be analyzed.

- i) To find out there is appropriate composition of working capital of UNLtd.
- ii) To see the UNLtd following appropriate working capital policy.
- iii) To identify the sound liquidity position of UNLtd.
- iv) To measure the liquidity position of UNLtd.
- v) To know how working capital is being financed in UNLtd.

1.5 Objective of the Study

Working capital plays vital role for the success of an organization. The main objective of this study is to examine the working capital management of UNLtd. The specific objectives of this study are as follows:

1. To analyze the liquidity, composition of working capital, assets utilization and profitability position of UNLtd,
2. To analyze the financing pattern of working capital of UNLtd,
3. To examine the relationship between working capital & profit and working capital & sales of UNLtd,
4. To analyze the cash conversion cycle of UNLtd,
5. To suggest the appropriate management of working capital to UNLtd.

1.7 Limitation of the Study

This study is mainly based on secondary data, which have been collected from annual reports of the relevant companies. The full required data of Nepalese organizations are beyond the reach of researcher. Even the financial statements of the companies published are not readily available. Nepal stock exchange Ltd. publishes financial statement and other information of some listed companies. It is on its websites. It only provides data of seven year period.

There are 29 listed manufacturing public enterprises but I have selected the working capital management of Unilever Nepal Limited (ULNL).

Every study is conducted under certain limitation. So, the present study as a partial requirement of Master of Business Studies program has been done under some limitation. But the researcher has tried to include all the required information for the conduct of the study as far as possible.

The present study is based on working capital management of Unilever Nepal Limited. Thus, it can't generalize manufacturing sector as a whole.

-) The present study has covered only past seven years from FY 2058/59-2064/65.
-) Only some certain financial tools are used.
-) The accuracy of the result is based on the data provided by the concerned institutions.
-) This study is based on secondary data, only.
-) Time and cost factors have limited the scope of this study.

1.6 Significance of the Study

Working capital deals with the matrix of current assets and current liabilities. Every manufacturing firm needs various types of assets to run the production process without any interruption. Some assets are required to meet the needs of regular production and some to meet the expenses and short-term obligation of a firm. So management has to manage working capital properly.

Unilever Nepal Limited is one of the manufacturers of soaps, detergents, cosmetics, oleaginous, saponaceous and other chemicals products. It had monopoly in market of cosmetic products, but at present it has to face the cutthroat competition because of the establishment of a huge number of cosmetic companies and introduction of liberal market economy of the country. Every organization wants to compete its competitors. In order to complete the rivals in the market, working capital management is the most vital part of any firm.

Proper financial management is of great importance for every business enterprises from the point of view of achieving success. In this respect working capital plays a significant role in every aspect and more so in

trading enterprises whose structure and function depends upon it. Lack of the knowledge about managing working capital causes harm to the organization and finally pushes it into liquidation.

This study is mainly important for finding the present working capital situation of UNLtd. It will be helpful to find out strengths and weaknesses regarding the working capital management of the company. It will also be helpful for other similar nature of manufacturing enterprises to determine and manage working capital. It is useful for government to formulate appropriate economic policy for their enterprise. It will be helpful for new financial manager or new business to take decision on efficient working capital management and deciding its component strategically. And finally this study helps to evaluate impact of working capital on profitability of business enterprises.

1.8 Organization of the Study

The study has been divided into five major chapters:

I. Introduction: The first chapter 'Introduction' deals with background, working capital practice in Nepal, introduction of UNLtd, statement of problem, objectives of the study, significance of the study, limitation of the study and organization of the study.

II. Literature Review: The second chapter 'Literature review' deals with the review of related literatures and available studies written and conducted by different experts and researchers in the field of working capital.

III. Research Methodology: The third chapter presents the methodology used in this study. It deals with research design, source of

data, procedures employed and financial and statistical tools used for the study.

IV. Presentation and Analysis of Data: The fourth chapter fulfils the objective of the study by presenting the data and analyzing them with the help of various statistical tools followed by methodology.

V. Summary, Findings and Recommendation: The fifth chapter will summarize the whole study. Moreover, it draws the conclusions and forwards the recommendation for the improvement of WC management of UNLtd.

At last, the bibliography and appendix has been incorporated at the end of the study.

CHAPTER II

REVIEW OF LITERATURE

2.0 Introduction

This chapter deals with theoretical framework of working capital and review of relevant studies. Under the theoretical framework of working capital management, it reviews the meaning and concept, classification of working capital, factors determining working capital, techniques of forecasting working capital requirement and so on.

Besides, it also presents the relevant studies carried out in the Nepalese context, including the available information of Unilever Nepal Limited.

This chapter provides insight into different articles published earlier and thesis conducted by M.B.S. level students in the topics of working capital.

The review of literature is organized as follows.

2.1 Conceptual Framework/ theoretical review of Books

2.2 Review of Journals and Articles

2.3 Review of Master Degree Thesis/Website and unpublished thesis.

2.1 Conceptual Framework /Theoretical review of Books.

2.1.1 Working Capital Management

Working capital is furnishing investment in short-term assets. The term "working capital management" is concerned only with the management of current assets and current liabilities of the business which is necessary for day to day operations. It is a controlling nerve of the business. Every company has variable working capital and permanent working capital. Hence the success and failure of any organizations depends on it. So far as the management of working capital in Nepalese manufacturing

companies concerned a number of different management experts and students of MBS/MBA have undertaken studies. They have been describing the working capital management of various enterprises.

There are two concepts of working capital:-gross and net. Gross working capital, simply called as working capital, refers to the firm's investment in current assets.

Current assets are the assets which can be converted into cash within an accounting year (or operating cycle) and cash, short-term securities, debtors, bills receivables and stocks (inventory) are included in current assets. Net working capital refers to the difference between current assets and current liabilities. Current liabilities are those claims of outsiders, which are expected to mature for payment within an accounting year and include creditors, bills payable, and out standing expenses. Net working capital can be positive or negative. A positive working capital will arise when current assets exceed current liabilities. A negative net working capital occurs when current liabilities are in excess of current assets (Pandey; 1994: 665).

The two concepts of working capital-gross and net are not exclusive: rather they have equal significance from management view. The gross working capital concept focuses attention on two aspects of current assets management: (a) optimum investment in current assets and (b) Financing of current assets. The consideration of the level of investment in current assets should avoid two-danger points-excessive and inadequate investment in current assets. Excessive investment in current assets should be avoided because it impairs firms profitability, as idle investment earns nothing. On the other hand, inadequate amount of working capital can threaten, solvency of the firm, if it fails to meet its current obligations. It should be realized that the working capital needs of the firms may be fluctuating with changing the business activity. This may cause excess or shortage of WC frequently. The management

should be prompt to initiate an action and correct imbalances (Pandey; 1994:665).

The definition described above convey in some way or other, the same meaning. They virtually represent the characteristics of the WC. It seems that there is consensus on the following special characteristics of the working capital (Mathur;1979: 96-97).

1. Short Life

Working Capital is characterized by assets with a life span of less than 1 year. Such as cash, marketable securities, accounts receivable, and inventories etc. This short life span leads to high volatility in the level of investments require to financing working capital.

2.Nearness of Cash or Liquidity

This basic characteristic constitutes the first line of defense against technical insolvency. Cash is the most liquid assets having zero conversion period time and 100 percent conversion rate. But for inventory and marketable securities two factors i.e. (i) nearness to cash or amount of time required to convert assets in to cash and (ii) price realized on conversion must be considered.

3.Lack of Synchronization

Since the enterprises cannot produce on order only and cannot insist on cash payments, there is always the problem of synchronization in cash receipt and disbursement. It is also due to the level of investment in working capital that is affected by the sales volume, production policies and collection policies.

The basic characteristics of working capital as mentioned above indicate that it is a term of capital intended to be kept moving or circulating and its potential for earning comes from movements. Though the expenditures controlled and planned its income is usually subject to random variation and is not controllable (Gallagher; 1987: 35).

The purpose of this chapter is to provide an insight into working capital management and to give a bird eye view of different experts' thoughts regarding theory of working capital and its implications. While making review of related literature of working capital management, the researcher has gone through different financial books, bulletin documents, reports and journals.

Thus, this chapter has aimed at reviewing an available literature on working capital management in the context of Nepalese manufacturing companies.

Working capital is a furnish investment in short-term assets (Weston; 1981: 137). Working Capital is a firm's investment in short term assets- cash, short term securities, account receivables and inventories (Weston & Brigham; 1984: 266).

The term working capital is often used to refer the firms current assets like primarily cash, marketable securities, account receivables and inventories: Working capital refers to the fact that most of its components have their impact over weeks and months rather than years. For this reason, working capital management is often referred to as short-term finance (Soloman & Pringle; 1978: 51).

The term working capital is closely related to the term funds and has two common meanings. It is used to mean current assets or current assets minus current liabilities (Hampton; 1983: 86).

Gross working capital is the firm's total current assets. Net working capital is current assets minus current liabilities (Weston & Brigham; 1984:267). The gross working capital is simply called as working capital, refers to the firms investment in current assets (Pandey; 1994: 666).

Working capital may be defined more particularly as the assets held for current use within a business less the amount due to those who await

settlement in the short term in whatever form (Brown & Howard; 1982:78).

Working capital management is an important aspect of the manufacturing compares that have so far developed country. Among all available options proper management of working capital is the only best possible option to improve their operational viability. Working capital management is the crucial aspect of financial management practice in manufacturing enterprises. Working capital represents portion that circulates from one form to another in the ordinary conduct of business.

This idea embraces the recurring transaction from cash to inventories to receivable to cash that forms the conventional chain of business operations. Funds deployed for short-term are mainly for working capital or operational purpose. Towards the day-to-day operation, a firm will have to provide money towards the purchase of raw materials, payment of wage and salaries to extend credit to buyers of goods as well as to meet other day-to-day operations (Besant & Rai; 1978: 53).

Working capital management is concerned with the problems that arise in attempting to manage the current assets. The term current assets refers to those assets which in the ordinary course of business can be or will be turned into cash with in one year without undergoing a diminution in value and with out disrupting the operation of the firm. The major current assets are cash, marketable securities, account receivables and inventory. Current liabilities are those liabilities, which are intended at their inception to be paid in the ordinary course of business with in a year, out of the current assets or earnings of the concern. The basic current liabilities are accounts payable, bills payable, bank overdraft and outstanding expenses. The goal of working capital management is to manage the firm's current assets and current liabilities in such a way that a satisfactory level of working capital is maintained.

This is so because if the firm cannot maintain to satisfactory level of working capital, it is likely to become insolvent and may be forced into bankruptcy. The current assets should be large enough to cover its current liabilities in order to ensure a reasonable margin of safety. Each of the current assets must manage efficiently in order to maintain the liquidity of the firm while not keeping too high level of any one of them. Each of the short-term sources of financing must be continuously managed to ensure that they are obtained and used in the best possible way. The interaction between current assets and current liabilities is, therefore, the main theme of the theory of working capital management (Khan & Jain; 1993: 603).

The need for net concept of working capital arises due to the fact that short-term creditors want an enterprise to maintain current assets at a higher level as compared to current liabilities. It shows the extent of protection provided to short-term liabilities. The current ratio of 2:1 and quick ratio of 1:1 are considered being the appropriate standards but they are simply the conventional rules or thumb. The quality of current assets is more important than the current ratio of 2:1. The illiquid firm finds it difficult to borrow from outside.

In fact, the choice of a particular concept will depend upon purpose. Of the two concepts, the net is more useful, if the purpose is to find out the liquidity position an enterprise. If, on the other hand, the interest lies in finding out whether the total current assets of an enterprise are being put to maximum use, the gross concept is more preferable.

The gross concept is more relevant for a new company because it has to decide how much money should be invested in the form of cash, receivables and inventories so as to being (and continue) its operation. The net concept is more relevant for a going concern. Even when working capital is taken to mean current assets, there is no agreed list of such assets. And it is often difficult to draw a distinction between current

assets or current liabilities form non-current liabilities, generally a period of one year is used as a line of demarcation, which is somewhat arbitrary. It suggests that the investment in any assets or liabilities with a life of less than a year falls into the realm of working capital management (Pradhan; 2004: 292-294).

Mostly there are two schools of thought or concepts regarding the meaning of working capital. According to one school of thought, working capital is meant for the current assets only. It is not concerned with the liabilities side. According to the other school of thought, working capital is the excess of current assets over current liabilities. The former concept which can be termed as gross concept is important to newly established companies where liabilities have not been acquired immediately, but the latter one which can be termed as net concept is important for both newly established and operating concerns where some amount of current liabilities had been maintained for payment of different creditors, income taxes, bills payable, secured and unsecured loan etc.

Therefore, the role of working capital management is more significant for every business organization irrespective of their nature. There have been done a number of studies on working capital management from different experts in various enterprises.

2.1.2 Terminologies of Working Capital

There are two terminologies of working capital viz. Gross working capital and net working capital.

1. Gross working capital:- It refers to the firm investment in current assets i.e. cash, inventory, marketable securities and account receivable.
2. Net working capital:- It can be defined in two ways,

) Most common definition of working capital is the difference between current assets and current liabilities.

) Alternative definition is that, "the portion of a firm's current assets which is financed with long-term funds" (Gitman; 1988:473).

) According to gross working concept, working capital refers to total current assets of a firm. It emphasizes only the optimum investment on current assets and financing of current assets. It includes cash, inventory, short-term securities and account receivables. The level of current assets may be fluctuating with the changing business activity. Thus, this concept can help earning more profit through maximum utilization of current assets. This concept is called quantitative concept (Pradhan; 1986: 19).

) According to the net concept, working capital represents to the difference between current assets and current liabilities. In other words, it is the part of the current assets which are financed with long-term financing. It focuses on the liquidity position of the firm and suggests extending which working capital need to be financed by permanent sources of funds. It is not very useful to compare the performance of different firms as a measure of liquidity, but it is quite useful for internal control. This concept helps to compare the liquidity of the same firm over a time (Khan, and Jain; 1981: 607-608).

) In opinion of Nanda Kumar Adhikari(2004), the total current assets are considered as gross working capital. So, it covers the whole of the current assets irrespective of the sources of short term fund used to finance the current assets. Similarly, the excess of current assets over current liabilities is considered as net working capital. In other words, the proportions of current assets which are financed by using long term source are considered as net working capital.

J Similarly, according to the well-known Indian professor I.M.Pandey, specially, there are two concepts of working capital: net concept and gross concept. The term 'Net working capital' refers to the difference between current assets and current liabilities. Current liabilities are those claims of outsiders, which are expected to mature for payment within an accounting year, and include: bills payable, bank overdraft, creditors and outstanding expenses or accrued income. Net working capital arises when current assets exceed current liabilities. A negative working capital occurs when current liabilities are in excess of current assets. On the other hand, gross working capital is simply called as working capital to refer the firm's investment in the current assets. Current assets are those assets, which can be converted into cash amount is one of the important aspects capital and vice-versa (Pandey; 1995: 738-742).

2.1.3 Determinants of Working Capital

A number of factors affect different firm in different ways. Internal policies and environment changes also affect the working capital. Generally the following factors affect the working capital requirements of the firm. (Hampton, 1986:222).

1. Nature and size of business: A trading and banking companies require large working capital and industries may require relatively lower working capital. If the size of the firm is bigger, then it requires more working capital. While small firm needs less working capital .

2. Process of manufacture : If the production process is time consuming and complex then large working capital is required as compared to the simple production process.

3. Requirements of raw material: If raw material requirements is large then large working capital is required and vice-versa.

4. Credit policy : Credit policy also affects the working capital of a firm. working capital requirement depends on term of sales. Different term may be followed to different customers according to their credit worthiness. If the firm follows the liberal credit policy, then it requires more working capital. On the other hand, if a firm follows the stringent credit policy it requires less working capital.

5. Growth and expansion of a business: If the firm is fast growing then larger amount of working capital is required as compared to the business with normal or low rate of expansion.

6. Operating efficiency : Operating efficiency refers to the efficient utilization of available resources at minimum cost. A financial manager can contribute to strong working capital position through operating efficiency. If a firm has strong operating efficiency then it needs lesser amount of working capital and vice-versa.

7. Seasonal change : During the busy season a business requires larger working capital while during off season it requires lower working capital.

8. Competitive Condition

An enterprise dominating in the market without having keen competition may be in a favorable situation for keeping less amount of working capital .

9.Level of tax: The level of tax also influences working capital requirements. If tax liability increases, it needs to increase the working capital and vice-versa.

Price level change, profit margin, production policy, manufacturing cycle are some other factors that affect working capital.

2.1.4 Working Capital Policy

Working capital policy refers to the firm's basic policies regarding target level of each category of current assets and how current assets will be financed. So first of all, the firm has to determine how much funds should be invested in working capital in gross concept. Every firm can adopt different financing policy according to the financial managers attitude towards the risk return trade off. One of the most important decision of financial manager is how much current liabilities should be used to finance current assets. Every firm has to find out the different sources of funds for working capital.

Working capital policy is to maintain optimality on (a) the level or investment in current assets.(b) the financing of current assets.

There should be optimum investment in the level of current assets because excessive or idle investment in current assets earns nothing to the enterprise and consequently impairs the profitability. On the other hand, inadequate level of investment in current assets threatens the solvency of the enterprise, if it fails to meet obligation when they become due. So working capital policy should be designed to overcome such imbalance, when then arise. Basically, there are three level of working capital investment Viz Fat Cat, learn of mean & moderate policy.

In the same way the financing aspect of current assets should not be over looked in its management. Because whether to use long term or short term fund to finance current assets have significant impact on an enterprise risk or return, liquidity and profitability. As it is known funds long term as well as short term-involve cost. Generally, short-term funds have lower cost of finance and are preferred to be used in current assets. Cost of financing is a deciding factor in the use of type of funds in any enterprise. Aggressive, conservatives & Hedging or matching policy are

the main approaches of financing the working capital need of the enterprise.

2.1.4.1 Current Assets Investment Policy

Current assets investment policy refers to the policy regarding the total amount of current assets to be carried to support the given level of sales. There are three alternative current assets investment policies, lean and mean, Fat cat and moderate.

I) Learn and Mean policy:-

It is the policy under which amount of cash, marketable securities, inventories and receivables are minimize.(Weston & Brigham; 1996:334).

It follows a tight credit policy and reduces the policy conversion and receivable conversion cycle. It is also called and restricted current assets investment policy.

(II) Fat Cat Policy:-

It is the policy under which relatively large amount of cash, marketable securities, inventories and receivables are carried. It follows a liberal credit policy and increases receivable collection period. Thus this policy provides the lower expected return in investment with lower expected return in investment with lower risk. (Weston; 1996:344).It is also called relaxed current assets investment policy.

(III) Moderate Policy:-

It is the policy under which amount of cash, marketable securities, inventories and receivables are held between the relaxed and restrictive policies. In this policy both risk and returns are moderate.

2.1.4.2 Current Assets Financing Policy

Working capital policy refers to the firm's basic policies regarding target levels for each category of current assets and how current assets will be financed. There are three working capital policies regarding the total amount of current assets carried. The following are the main approaches of financing the working capital need of the enterprise.

a. Aggressive Policy

A firm may be aggressive in financing its assets. Under an aggressive policy, the firm finances a part of its permanent current assets with short term financing. Some extremely aggressive firms may even finance a part of their fixed assets with short term financing(Pandey; 1994:684).

Hence, this sort of mix financing increases the profitability and exposes towards risk by financing relatively larger portion of its assets through lower cost short term borrowings.

b. Conservative Policy

The less risky approach refers to financing all the assets by long term funds. Under this policy the firm finances its permanent assets and also a part of temporary current assets with long term financing. Under this policy the firm has less risk of facing the problem of shortage of funds. When the firm has no temporary current assets, the long term funds released can be invested in marketable securities to build up liquidity position of the firm(Pandey; 1994:683).

c. Matching Approach/Policy

This approach is also known as average or hedging approach. In this approach, long term financing sources are used to finance fixed assets and permanent current assets and short term financing sources are used to finance temporary or current assets. In other words, expected life of assets are matched with expected life of the sources of the funds raised to finance assets, i.e. maturity period of both assets and source of finance

should be the same. If short term financing is used to finance long term assets, then it will be inconvenient and costly because arrangement of new short term financing should be made on a continuing basis(Pandey; 1994:683).

Similarly, when short term assets are financed with long term fund, then its cost also increase because funds will not be utilized in full extent. Thus, we can say in this approach, we have exact match between life of assets and life of funds to finance the assets.

However, it should be realized that exact matching is not possible because of the uncertainty about the expected life of assets.

2.1.5 Need for Working Capital

Most of firms want to maximize the wealth of shareholders. The firm should earn sufficient return from its operation. The extent to which profit can be earned naturally depends upon the magnitude of sales among the other things. For constant operation of business, every firm needs to hold the working capital components cash receivable, inventory etc. The need for working capital to run the day-to-day business activities cannot be overemphasized (Pandey; 1999:809). Therefore every firm needs working capital to meet the following motives.

a. The Transaction Motive

According to transaction motive a firm holds cash and inventories to facilitate smooth production and sales operation in regular. Thus, the firms need the working capital to meet the transaction motive.

b. The Precautionary Motive

Precautionary motive is the need to hold cash and inventories to guard against the risk of unpredictable change in demand and supply forces and other factors such as strike, failure of important customer, unexpected slow down in collection of account receivable cancellation

of some order for goods and some other unexpected emergency. Thus the firm needs the working capital to meet any contingencies in future.

c. The Speculative Motive

Speculative motive refers to the desire of a firm to take advantages of following opportunities :

- a. Opportunities of profit making investment,
- b. An opportunity of purchasing raw materials at a reduced price on payment of immediate cash,
- c. To speculate on interest rate and
- d. To make purchase at favorable price etc. Thus the firms need the working capital to meet the speculative motive.

2.1.6 Goals of Working Capital (Hampton,1998)

The firm's policies for managing its working capital should be designed to achieve three goals:

Adequate Liquidity: If a firm lacks sufficient cash to pay its bill when due, it will experience continuing problems. The most importance goal is to achieve adequate liquidity for the conduct of the day-to-day operations.

Maximization of Risk: In selecting its source of financing, payables and other short-term liabilities may involve relatively low cost. The firm must ensure that these near-term Obligation do not become expensive compared to the current assets on hand to pay them. The matching of assets and liabilities among current accounts is a task of minimizing the risk of being unable to pay bills and other obligations.

Contribute to Maximizing Firm's Value: The firm holds working capital for the same purpose as it holds any other assets, that is, to maximize the present value of common stock and value of the firm. It should not hold idle current assets any more than it should have idle fixed assets. The investment of excess cash, minimizing of inventories, speedy collection of receivables, and elimination of unnecessary and costly short-term financing all contribute to maximizing the value.

2.1.7 Importance of Working Capital (Pinches, 1990):

Working capital is important for these reasons :

a. A financial manager of the firm devotes his most of the time on day to day internal operation. The main function under internal operation deals with current assets and current liabilities. Therefore working capital management is an important element in business.

b. The relation between sales and the need to invest in current assets is close and direct. When there is change in sales, some items of the firm are also changed spontaneously which are inventory, account receivable etc. So along with change in sales, current assets also need to manage accordingly. Thus the financial manager must stay alert about the working capital management.

c. Working capital management is particularly important for small firms because they can acquire the fixed assets by renting and leasing but they can't avoid investment in current assets or they have to invest a large amount of their capital in current assets. So, small firms consider working capital management as an important aspect in business.

d. Generally in a firm, current assets represent more than half of its total assets. By nature, current assets are more volatile. Due to high

investment in current assets and volatile nature, the financial manager of the firm should pay careful attention on working capital management.

2.1.8 Financing of Working Capital

Every manufacturing concern or industry requires additional assets whether they are in stable or growing conditions. When the firm wants to generate sustained profit, normally it requires fixed capital as well as working capital. Additional portion of working capital is approximately dominated by the same rate as sales. But this portion of capital requirement depends upon the nature of the firm (Pandey; 2000:823).

Therefore the most important function of financial manager is to determine the level of WC and to decide how it is financed. Financing of any assets is concerned with two major factors: cost and risk. Therefore, the financial manager must determine an appropriate financing mix, or decide how current liabilities should be used to finance current assets. However, a number of financing mixes are available to the financial manager. He can resort generally three kinds of financing.

1. Long term financing
2. Short term financing
3. Spontaneous financing

1. Long term financing

Long term financing has high liquidity and low profitability. Ordinary share, debenture, preference share, retained earning and long term debt from financial institution are the major sources of long term financing.

2. Short term financing

A firm must arrange its short term credit in advance. The sources of short-term financing of working capital are trade credit and bank

borrowing. The sources of short term financing refer to the working capital funds from bank, public deposits, commercial papers etc. The short term financing is obtained for a period less than one year (Pandey; 1999:827).

Trade credit : Trade credit refers to the credit that a customer gets from suppliers of goods in a normal course of business. If the buying firm does not pay cash immediately for the purchase is called trade credit. It is mostly an informal arrangement and is granted on an open account basis. Another form of trade credit is bills payable. It depends upon the term of trade credit (Van Horn; 1996:248).

Bank Credit : Bank credit is the primary institutional source of working capital financing. For the purpose of bank credit, amount of working capital requirement has to be estimated by the borrowers and banks are approached with the necessary supporting data. After availability of this data, bank determines the maximum credit based on the margin requirement of security. The types of loan provided by commercial banks are loan arrangement, overdraft arrangement, commercial papers etc.

3. Spontaneous Financing

Spontaneous financing arises from the normal operation of the firm. The two major sources of such financing are trade credit and accruals. Whether trade credit is free of cost or not actually depends upon the terms of trade credit. Financial manager of the firm would like to finance its working capital with spontaneous sources as much as possible. In practical aspect, the real choice of current assets financing is either short term or long term sources. Thus, the financial manager concentrates his power in short term versus long term financing. Hence, the financing of working capital depends upon the working capital policy which is perfectly dominated by the management attitude towards the risk-return (Pradhan; 1992:153).

2.2 Review of Journals and Articles

This section reviews some of the journals and articles published by management experts in Working Capital.

Radhe Shyam Pradhan and Kundan Dutta Koirala's Study Pradhan and Koirala(1983) had jointly published an article on "Some Reflection on Working Capital Management in Nepalese Corporations." The article basically aims to find out the difficulty, importance and problem of current assets management and also aims to find out the motive for holding cash and inventory. The study uses only primary data to find out the basic constraints and distributed 200 questionnaires. For the purpose of the study, they use both manufacturing public corporations as a sample companies. After analyzing the collected data the major finding of the study were as follows:

- To provide a reserve for routine net outflows of cash is the major motive for holding cash in Nepalese corporations.
- The major reason for holding inventories is to facilitate smooth operation of production and sales.

The major factor affecting the larger investment in receivable is found to be the liberal credit policy followed by Nepalese corporations. The late paying practice of customers is also responsible for larger investment in receivables. However, corporations are reluctant to take inefficient collection of trade credits as one of the major factors affecting receivables

This section is focused to review journals/articles and by different management expert relating to working capital management.

Manohar K. Shrestha's Study

Shrestha(1982) had carried out his article on, "Working Capital Management in Public Enterprises: A Study on Financial Results and Constraints." In this article he had considered ten-selected PEs to measure their working capital needs in those PEs. He had mainly focus on the liquidity, turnover and profitability position of that PEs. In the analysis, he had focused that four PEs had maintained adequate liquidity position: two PEs had excessive liquidity position and rest four enterprises had failed to maintain desirable liquidity position. About turnover, two public enterprises (PES) had negative working capital turnover: four had sum to achieve satisfactory turnover of net working capital. He also found that six PEs are operating at losses and four of them are being able to achieve some percentage of profit. After analyzing these constraints, he had bought certain policy issues. They are as follows:

- There is a lack of suitable financial planning for determining their working capital needs in PEs.
- The managers of PEs were being unable to give attention to working capital management.
- There exists no proper consistency between liquidity position and turnover of assets.
- PEs being unable to show positive relationship between turnover and return on net working capital.

He had made some suggestive measures to overcome from the above policy issues i.e. identification of needed funds, regular checks, development of management information system. Positive attitude towards risk and profit and determination of right combination of short term and long term sources of funds to finance working capital needs.

Dr. K. Acharya's Study

Dr. K. Acharya(1985) has published his article regarding "Problems and Impediment in the management of working capital in Nepalese enterprises." It is said in the article that working capital management, especially in public sector, has been as relatively weak area. He has described operational problems and organizational problems as a two major problems faced by the Nepalese PEs regarding the working capital management. In the operational problem he has found the problems as follows:

Increase of current liabilities than current assets, not following the current ratio 2:1, slow inventory turnover in PEs, change in working capital in relation to fixed capital had very low impacts over the profitability, PEs have not followed the conventional proportion of debt and equity as 1:1, very thin transmutation of capital employed into sales, absent or apathetic information management system, the performance evaluation tools and techniques like Break-Even analysis, Funds flow analysis, Ratio analysis etc were either undone or ineffective in most PEs, monitoring of the proper functioning of working capital management has never been considered a managerial job. He suggests to avoid the system of crisis decision which prevailed frequently in there operation. They have to follow and method for decision making.

Secondly, in the organizational problems he has found the following listed problems. Lack of regular evaluation of financial results as well as regular internal and external audit system, most of PEs being unable to present their capital requirements with proper justifications, functioning of finance department was not satisfactory, some PEs are facing the problem of under utilization of capacity.

Acharya has made some suggestions and recommendations to overcome the problems and to make an efficient use of funds for minimizing the risk of loss to attain the profit objectives.

- PEs should keep their consumers alive to consumption of their commodity.
- PEs should take care of negatively affecting policies directives from HMG Nepal itself.
- PEs are also suggested to avoid the system of crisis decision, which prevailed frequently in their operations.
- PEs should avoid fictitious holding of assets immediately.
- Finance staff must be acquainted with the modern scientific tools used for the presentation and analysis of data.
- Lastly, he has suggested optimizing its level of investment because both of these situations will erode the efficiency of the concern.

An article was published by New Zealand government relating to WC management. According to this article, good management of working capital is part of good financial management. Effective use of working capital will contribute to the operational efficiency of a department: optimum use will help to generate maximum return. Ratio analysis can be used to identify working capital areas which requires closer management. Various techniques and strategies are available for managing specific working capital items. Debtors, creditors, cash and in some cases inventories are the areas most likely to be relevant to departments (New Zealand government report 2007).

2.3 Review of Master Degree Thesis.

A number of studies have been done by students of MBS, relating to working capital management in Nepal. This section is focused to review some of those dissertations.

Dhurba Nath Yogi's Study:

Dhurba Nath Yogi(2000) has studied on "*Working capital management of Nepal Level Limited.*" He has analyzed the financial statement of the company for five years (2051/52 to 2055/56). This thesis is conducted through basically secondary data. He has used ratio analysis, co-efficient correlation, and hypothesis for analysis. He has found that all component of current assets are highly fluctuating during the study period. And the component of current liabilities are not related to each other. It means that Nepal Level Limited has not taken seriously about the sources of financing. He has also found that some of fixed assets is also financed by long term financing rather than by short term funds. The analysis shows that the liquidity position of the company is fluctuating year by year. The proportion of current assets is affected by the sales. In other words, the sales is affected the management of current assets. The component of current assets and current liabilities are fluctuating nature. He has also found that the insignificant relationship between liquidity and profitability. Company has still followed conservative working capital management policy, which reduces the risk of the company.

Prem Kumar Shrestha's Study:

Prem Kumar Shrestha(1999) has carried out a research on "*A Study on Working Capital Management in Bhrikuti Paper Mills Limited*". His main objective is to analyze the current assets and current liabilities and their impact and relationship to each other.

His major findings are as follows:

- ☞ Cash and Bank Balance holds the largest part of current assets.
- ☞ There is increasing trend in liquidity and decreasing trend in current assets.
- ☞ There is discouraging profitability caused by the low return on total investment of the mill.

Bishwa Raj Adhikari (2004). had been research work entitled "*A study on working capital management of Nepalese manufacturing companies.*" He conducted his study on the basis of different years data. The main objectives of his study were to appraise the working capital management of manufacturing companies, to analyze the liquidity composition of working capital, assets utilization and profitability composition of selected manufacturing companies. During his study he had basically used secondary data. Both quantitative and qualitative methods had been used by him for analysis. He had derived following major findings from his study.

- Most of the selected manufacturing companies have followed a conservative working capital policy.
- Nepalese manufacturing companies are suffering form loss or they are in loss position but not so much.
- Findings on cash conversion cycle

The inventory conversion period of Nepalese manufacturing companies is 77 days. The overall receivable conversion period of Nepalese manufacturing companies is 28 days. The payable deferral period is only 36 days and cash conversion cycle is 69 days during his study period.

- The correlation coefficient between current assets and current liabilities (0.78), receivables and sales (0.764), inventory and sales

(0.68), net working capital and sales (0.87), net profit and sales (0.54) and current assets and sales (0.94) are highly correlated to each other.

Jiban Nath Sapkota's Study

Jiban Nath Sapkota(1984) has conducted the research on "*A study on working Capital Management in Himal Cement Company Limited.*" His main objective is to examine the position of current assets and current liabilities and to reveal the specific performance in working capital management of Himal Cement Company Limited. The major findings of his study are as follows:

- Inventories, cash and receivable as the major component of current assets in HCCL where the inventories have hold the largest portion followed by cash and receivable respectively.
- There is improper utilization of current assets and liquidity as a problematic area.

He also concluded that the HCCL has followed ineffective management policy. There is absence of proper guidelines for funds, inventory control, cost control, selling process and investments policy in current assets, management responsibilities, lack of proper rules and regulation of the government policy.

Bhagawan Aryal's Study:

Bhagawan Aryal(1995) has carried out his study on "*An Analysis on Working Capital Management with Special Reference to Hetauda Textile and Balaju Textile.*" The main objective of this study is to analyze the liquidity, long term solvency, assets utilization and profitability position of both industries and to make an overall comparison of working capital management of both companies. The major findings of this study are as follows.

- ☞ The liquidity position of Hetauda textile ltd. was better than that of Balaju textile Ltd. But both companies have not followed a proper working capital policy.
- ☞ Total assets turnover of both companies was not satisfactory and there was not significant difference of total assets turnover.
- ☞ Cash balance maintained by Balaju textile Ltd. was better than that of Hetauda textile.
- ☞ Solvency position of Hetauda textile was better than that of Balaju textile.
- ☞ Profitability position of Hetauda textile was better than that of Balaju textile, however both companies have not good profitability position during the study period.

Niraj K.C.'s Study:

K.C. (2000 A.D.) has conducted a study on "*Comparative Study of working capital management of Nepal Bank Limited and Nepal Arab Bank limited.*" The main objective is to analyze the comparative study of working capital management of NBL and NABIL. The major findings of the study are as follows:

- ☞ The liquidity position of NBL is better than that of NABIL.
- ☞ NABIL has better turnover and investment efficiency on loan and advance than NBL. So the management of loan and advance is more problematic in NBL than NABIL.
- ☞ Profitability position of NABIL is far better although NBL earned higher interest than NABIL.

He has recommended that both bank should adopt matching working capital policy rather than conservative policy. He has also recommended that both bank should give attention to collect over

dated loan and advances and utilize the idle funds. High cost deposit should be reduce to minimize operating cost and maximize profit.

Anil Kumar Agrawal (2005) a student of management finished his research study about working capital management. That study was conducted on "*Working Capital Management of Cigarette Industry in Nepal with Special Reference to Janakpur Cigarette Factory.*" He has used data from 2050/051 to 2059/ 060. The main objectives of his study were to evaluate the performance of management of working capital of JCF, to measure the efficiency of management in utilization of inventory, appraising the efficiency of management in utilization of account receivable, measuring the efficiency of management in the use of cash and evaluating the financial pattern of working capital of the factory.

The major findings of his study were as follows:

- Short term financial position of the factory is sound from the creditors point of view.
- The factory's liquid financial position is weak from the creditors points of view.
- Inventory of the factory has not been managed efficiently.
- Receivable, cash has not been managed efficiently.
- Working capital turnover ratio of the factory marked a fluctuating trend during the period of analysis.

- The current assets of the factory marked an irregular tendency while the current liabilities and net working capital recorded mixed trend.
- On the whole, the performance of working capital management is not satisfactory.

"A study on working capital management of pharmaceutical industry of Nepal with special reference Royal Drugs Ltd. (RDL)" was conducted by **Bishwas Raj Aryal (2006)** a student of management. The main objective of that study was to find out working capital management system and its effect on profitability of the company by using nine years data. The major findings of the study are described in the next paragraph.

Working capital is more difficult to manage than that of fixed capital. 65% of respondents of RDL said that working capital was more difficult to manage than fixed capital and only 35% were in favors of that fixed capital management is more difficult to manage than working capital. So far as the importance of current assets management, 82% of respondents of RDL have said that a lot of time has taken to it. With respect to receivable management the major factors affecting the larger investment in receivable is found to be liberal credit policy. The major reason for holding inventories is to facilitate smooth operation of production and sales. Majority of respondents of RDL performed for it not for to take advantage of price increase.

2.5 Research Gap

The above-mentioned studies in the context of Nepalese manufacturing companies were done in the last decades in respect to working capital management. Many change have taken places in and out side of Nepal after 1990 A.D. Therefore Nepal also have followed the policy of liberalization, privatization and globalization. Many more companies have also come up after 1990. Many research studies have been conducted by the different students, experts and researchers about working capital management but they have not focused on the impact on profitability. Present researcher has focused on impact of working capital on profitability of working capital. Therefore it is necessary to bring out a fresh study in working capital management of manufacturing companies whether the findings of above studies are still valid or not. This research study is based on different variable and tools using new companies and newly data (2058/59 - 2064/65). This study focus only the working capital of Unilever Nepal Ltd.. This study will be fruitful to those interested person, researchers, students, teachers, businessmen and government for academically as well as policy perspectives.

CHAPTER III

RESEARCH METHODOLOGY

3.1 Introduction

Research methodology describes the methods and process applied in entire study. Research methodology refers to the various sequential steps to adopt by a researcher in studying a problem with certain objectives in view. It is necessary for the researcher to know not only the research methods/techniques but also the methodology. Researchers should not only aware about the certain financial and statistical tools but also need to know whether these tools are appropriate or not to be used and the reason behind using these tools also should be known. As this chapter describes the research methodology or research strategy, it contains research design, population and sample, sources of data, data collection procedure, data processing procedure and analysis tools.

3.2 Research Design

An architect prepares a blue print before he/she approves a construction. An army prepares a strategy before launching an attack. An artist makes a design before he/she executes his/her ideas. So also the researcher makes a plan of his/her study before undertaking the research work (Joshi; 2001). A research design is the specification of methods and procedure for acquiring the information needed. It is the overall operational pattern of frame work of the project that stipulates what information is to be collected from which source by what procedure. If it is a good design, it will ensure that the information obtained is relevant to the research questions and it will be collected by objective and economical procedures.

Research design is highlighted for ascertaining the basic objective of the study. Research design includes definite procedure and techniques which guide to sufficient way for analyzing and evaluating the study. As

already mentioned, the main objective of the study is to examine the working capital management of Unilever Nepal Limited, so the research design of this study is based on descriptive and analytical study. That means to conduct the study, descriptive and analytical research design is to be adopted. Attempts have been to describe and explore the composition of working capital, turnover position, liquidity position, and profitability position of Unilever Nepal Limited for the period of seven years ranging from 2058/2059 to 2064/65.

3.3 Population and Sample

There are altogether 29 manufacturing and processing companies listed in NEPSE, which have been considered as total population. Out of 29 manufacturing companies Unilever Nepal Limited, is selected, which is only one manufacturing company under group 'A' classified by NEPSE.

3.4 Nature and Sources of Data

To achieve objective of the study, the secondary data has been used. The main secondary sources of data are annual reports and audited financial statements (P/L a/c and balance sheet) of the company submitted to NEPSE.

The secondary data and information have been collected from the various publications and the data available in the record of Unilever Nepal Limited. The major sources of secondary data are as follows:

- Various documents (i.e. accounting and financial reports) of Unilever Nepal Ltd.
- Different bulletin and annual reports of UNLtd.
- Related act and regulation published by government and the company.
- Statistical Year Book of Nepal (CBS), various institution's annual reports, related government and non-government publications

about working capital management, books, journals articles, various research studies, web site of the company and SEBON.

3.5 Collection of Data

Financial data required to achieve the set objective of the study have been directly extracted from the balance sheet and income statement of the company. In order to collect the supportive data, a detail review of the related document has been carried on and qualitative information has been collected through interview with the officials of UNLtd.

3.6 Data Processing Procedure

This study is mainly based on secondary data. The collected financial statements and necessary data have been tabulated as per the need of this study. In order to process the data, financial statement and other available information were reviewed. These data were grouped in different tables and charts according to their nature.

3.7 Methods of Analysis of Data

The main purpose of analyzing the data is to change it from an unprocessed form to an understandable presentation. The analysis of data consists of organizing, tabulating and performing statistical analysis.

Percentage analysis has been done to examine the share of various components of current assets in the total current assets. Further, the growth of each type of current assets and current liabilities has been calculated and compared with the growth in sales.

3.7.1 Ratio Analysis

Ratio analysis is main tool used for financial analysis in the study. Various ratios are employed to examine the following aspects of Unilever Nepal Ltd.

3.7.1.1 Composition of working capital

3.7.1.2 Liquidity position

3.7.1.3 Turnover position

3.7.1.4 Profitability position

3.7.1.5 Cash conversation cycle

The ratios used to analyze the above aspects are described below.

3.7.1.1 Composition of WC

The composition of WC has been studied by analyzing following ratios.

a) Composition of Current Assets

To operate the business, different kinds of assets are needed. For day-to-day business operations different types of current assets are required. The current assets are composed of inventories receivables, cash and bank balance, prepaid and advance.

i) Proportion of inventory to total current assets

This ratio implies the percentage of total current assets in the form of inventories. It is calculated as :

$$\text{INV/TCA} = \frac{\text{Inventory}}{\text{Total Current Assets}} \times 100\%$$

The increase in the ratio indicates that company is adopting moderate inventory policy. If the ratio is increased it means greater part is occupied by inventory. If the ratio is small, the firm will have greater volume of WC.

ii) Proportion of receivables to total current assets

This ratio shows the share of receivable on total current assets. It is calculated as:

$$\text{R/TCA} = \frac{\text{Receivables}}{\text{Total Current Assets}} \times 100$$

An increase in the ratio shows that the management of receivables has an important bearing on the performance of the enterprise. Higher ratio indicates the liberal credit policy of enterprise.

iii) Proportion of cash and bank balance to total current assets. This ratio shows the ratio of cash and bank balance in total current assets. It is calculated as:

$$CB/TCA = \frac{\text{Cash \& Bank Balance}}{\text{Total Current Assets}} \times 100$$

High ratio indicates the poor management of WC.

iv) Proportion of pre-paid and advance to total current assets. This ratio shows the relationship between the total current assets and prepaid and advances. It can be calculated as:

$$P\&A/TCA = \frac{\text{Prepaid and Advance}}{\text{Total Current Assets}} \times 100$$

v) Proportion of total current assets to fixed assets

This ratio shows the relationship between the total current assets and fixed assets. It can be calculated as:

$$CA/FA = \frac{\text{Total Current Assets}}{\text{Fixed Assets}} \times 100$$

vi) Proportion of total current assets to sales

The company invests in total current assets to support the given level of sales. This ratio is calculated as follows:

$$CA/Sales = \frac{\text{Total Current Assets}}{\text{Net Sales}} \times 100$$

b) Composition of Current Liabilities

All obligations maturing within a year are current liabilities. Thus it is composed by trade and other payable, short term loans and provision.

i) Proportion of short-term loan to total current liabilities

Short term loan is interest bearing loan. The ratio of short term loan to total current liabilities is calculated as:

$$\text{STL/TCL} = \frac{\text{Short term loan}}{\text{Total CL}} \times 100$$

ii) Proportion of trade and other payable to total current liabilities. Trade and other payable is not interest bearing loan. The ratio of trade and other payable indicates the percentage of company's total current liabilities financed by trade & other payable. It is calculated as:

$$\text{T\&P/TCL} = \frac{\text{Trade \& Other payable}}{\text{Total CL}} \times 100$$

iii) Proportion of provision to total current liabilities. Provision is also non-interest bearing. The ratio is calculated as follows:

$$\text{Pro/TCL} = \frac{\text{Provisions}}{\text{TCL}} \times 100$$

3.7.1.2 The Liquidity Position

The Liquidity Position of Unilever Nepal Limited is Computed by Analyzing Current Ratio and Quick Ratio:

a) Current Ratio (CR)

It is the basic yardstick of measure in the solvency and liquidity position of the firm. It indicates the ability for payment of current debt from current assets. It is defined as :

$$\text{CR} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Higher the current ratio, better is the liquidity position. Generally current ratio of 2:1 is considered to be satisfactory.

b) Quick Ratio (Acid-Test Ratio)

Quick ratio is the ratio between quick current assets and current liabilities and is calculated by dividing the quick assets by current liabilities. Thus,

$$QR = \frac{\text{Quick assets}}{\text{Current liabilities}} = \frac{\text{Current assets}-\text{Inventory}}{\text{Current Liabilities}}$$

Generally, the company with quick ratio of 1:1 is considered to be in sound position.

3.7.1.3 Turnover Position

The activity ratio indicates the relationship between uses of assets in generating the sales. It traces out that how the firm manages the assets. It is related with measuring the efficiency in assets management as well as the effectiveness of the investment of resources in the business enterprises. With the help of this ratio, we can easily know whether the funds have been used effectively or not. The relationship between sales and various assets of the firm can be defined with the help of activity ratio.

a) Inventory Turnover Ratio

Inventory turnover ratio shows how rapidly the inventory is turning into receivable through sales. It means the ratio shows the efficiency of the business concern in as inventory management. It is computed by dividing the cost of goods sold by the average inventory. Thus,

$$\text{Inv. turnover ratio} = \frac{\text{Cost of goods sold}}{\text{Average inventory}}$$

The cost of goods sold means sales minus gross profit. The average inventory refers to the simple average of the opening and closing inventory. The ratio indicates how fast inventory is sold. A high ratio is good from the view point of liquidity and vice versa. A low ratio would signify that inventory doesn't sell fast and stays on the shelf or in the warehouse for a long time.

b) Inventory conversion period

Inventory also takes the time to convert into cash. Inventory conversion period is the average time required to convert materials in to finished

goods and then to sell those goods. ICP is calculated by dividing days in a year by inventory turnover ratio.

$$\text{Inventory conversion} = \frac{\text{Days in year}}{\text{Inventory turnover ratio}}$$

c) Receivables Turnover Ratio

The liquidity position of the firms depends upon the quality of debtors to a great extent. The receivable turnover indicates the collection efficiency of the firm. It is determined by dividing the net credit sales by average receivable outstanding during the year. Thus,

$$\text{Receivable turnover ratio} = \frac{\text{Net credit sales}}{\text{Average receivable}} = \frac{\text{Sales}}{\text{Receivable}}$$

The ratio measures how rapidly debts are collected. A high ratio is indicative of shorter time-lag between credit sales and cash collection. A low ratio shows that debt are not being collected rapidly.

d) Receivable Conversion Period

Receivable conversion period is the average length of time required to convert the firms receivables in to cash, that is, to collect cash following a sales. This ratio is calculated as follows:

$$\text{Receivable conversion period} = \frac{\text{Days in a year}}{\text{Receivable turnover ratio}}$$

3.7.1.4 Profitability Position

Most of firms aim to maximize the profit. The profitability ratio is used to measure the operating performance of the company. The profitability position of the companies are analyzed with the help of following ratios.

a) Gross Profit Margin

Gross profit margin ratio indicates the percentage of profit after cost of production. The ratio is a measure of productive efficiency. A high gross profit margin reflects the low cost of production and a low gross profit

margin reflects the higher cost of production. Gross profit margin ratio is given by:

Gross profit margin = $\frac{\text{Gross profit}}{\text{sales}} \times 100\%$ or $\frac{(\text{sales} - \text{cost of goods sold})}{\text{Sales}} \times 100\%$

b) Net Profit Margin

Net profit margin is obtained after deducting all operating expenses and income tax from gross profit. It shows the percentage of net profit out of total sales. This ratio shows the overall measurement of the company's ability to earn net profit. It is calculated by dividing net profit by sales and given by :

Net profit margin = $\frac{\text{Net profit after tax}}{\text{sales}} \times 100\%$

c) Operating Expenses Ratio

The ratio is calculated to ascertain the relationship between operating expenses and volume of sales. The higher percentage of operating expenses ratio shows the higher operating cost and vice-versa. It is given by :

OER = $\frac{(\text{Cost of goods sold} + \text{Operating expenses})}{\text{Sales}} \times 100\%$

d) Return on Assets (ROA) Ratio

Return on assets ratio reflects the success or failure of the management in order to utilize the total assets. This ratio is computed by dividing net profit after tax (NPAT) by total assets and given by:

ROA = $\frac{\text{NPAT}}{\text{Total assets}} \times 100\%$

e) Return on Capital Employed

It shows the earning capacity of the capital employed in the business. Profit is related to the total capital employed. The term capital employed refers to long term funds supplied by the creditors and owner of the firm. It is given by :

$$\text{Return on capital employed} = \frac{\text{Net profit}}{\text{capital employed}} \times 100\%$$

3.7.1.5 Cash Conversion Cycle

Cash conversion cycle measures the length of time the firm has funds tied up in WC. It is the length of time between paying for raw materials and receiving cash from the sale of finished goods. The cash conversion cycle or cash conversion period is inventory conversion period plus receivables conversion period minus payable deferral period. The cycle consists of the following periods.

Cash conversion cycle = inventory conversion period + Receivables conversion period – payables deferral period

a) Inventory conversion period (ICP)

It is length of time required to convert raw materials in to finished goods and then to sell these goods. It may be computed as under.

$$\text{Inventory conversion period} = \frac{360}{\text{Sales/inventory}}$$

b) Receivable conversion period (RCP)

It is the length of time required to convert the firm's receivables into cash, that is, to collect cash following a sale. It is also called the day's sales outstanding.

$$\text{Receivables conversion period} = \frac{\text{Receivables}}{\text{Sales per day}}$$

c) Payables deferral period (PDP)

It is the length of time between the purchase of raw materials and labor and the payment of cash for them.

$$\text{Payables deferral period} = \text{A/C payable/Sales per day}$$

3.7.2 Calculation of Correlation Coefficient (r)

In order to test the significance of the relationship in between two variables during the period of study, Karl Pearson's correlation coefficient (r) is calculated as:

$$r = \frac{\sum (X - A_1)(Y - A_2)}{\sqrt{\sum (X - A_1)^2 \sum (Y - A_2)^2}}$$

Where,

X = The first variable

Y = The second variable

N = No. of year (observations)

$D_x = (X - A_1)$

$D_y = (Y - A_2)$

A_1 and A_2 are assumed means for X and Y respectively.

$$\text{Probable error (PE)} = \frac{0.6745(1 - r^2)}{\sqrt{n}}$$

If r is less than its PE, it is not significant. If 'r' is more than PE, there is correlation. If 'r' is more than 6 times of its PE, than it is considered significant.

The all over ratios and significance test are done in the next chapter.

3.7.3 Simple Regression Model

Correlation coefficient measures the degree of relationship between two variables whereas the regression analysis is used to estimate the likely value of one variable from the known value of the other variable. There are two types of variables in regression analysis- dependent variable and independent variable. The variable whose value is influenced or is to be predicted is called dependent variable whereas the variable which influences the value or is used for prediction is called independent

variable. A simple regression equation which is used in this research study is given below. The regression equation of x on y:

$$X - \bar{X} = r \frac{\sigma_x}{\sigma_y} (Y - \bar{Y})$$

Where, \bar{X} and \bar{Y} are arithmetic means of X & Y series respectively.

r = simple correlation coefficient between X & Y

σ_x = standard deviation of X

σ_y = standard deviation of Y

Similarly, the estimating equation of Y on X (also known as the regression equation of Y on X) can be expressed as:

$$Y - \bar{Y} = r \frac{\sigma_y}{\sigma_x} (X - \bar{X})$$

3.7.4 Hypothesis testing (Student's t-test)

To test the validity of the assumptions, t-test is used when the sample size is less than thirty. Student t-value is calculated first compared with the table value of 't' at a certain level of significance for given degree of freedom.

$$\text{Symbolically: } t = \frac{r}{\sqrt{1 - r^2}} \sqrt{n - 2}$$

Where, r = correlation coefficient

n = No. of observation

On testing, the null hypothesis will be rejected if the calculated t-value is greater than the table value at 5% level of significance for the n-2 degree of freedom and vice-versa.

3.8 Definition of Key Terms

In the analytical process of this study different terms have been used. The key terms used in this study have been defined below to avoid any confusion and misunderstanding.

i) Working Capital

The term working capital refers to the net working capital for this study. It means the working capital covers total volume of current assets minus current liabilities of Unilever Nepal Ltd.

ii) Current Assets

The current assets of a firm represent those assets which can be in the ordinary course of business, converted in to cash within a short period of time, normally not exceeding one year and include cash and bank balance, bills receivables, marketable securities, prepaid expenses, accrued, short term loan and advance, stock etc.

iii) Current Liabilities

Current liabilities include those liabilities, which are estimated to mature within an accounting year. It includes sundry creditors, sales, tax, deposit, income tax provision and short term loans.

iv) Receivable

It includes receivables from the trade debtors and other debtors.

v) Inventories

It means the aggregate of those items, which are held for sale in the ordinary course of business (finished goods), or are in the process of production for such sales (work-in-process) or are to be current consumed in the production of goods and service (raw material) to be available for sales.

vi) Fixed assets

Fixed assets include such assets like land and building, plant and machinery, furniture and fixture, vehicles and other miscellaneous assets which are supposed to be existed more than an accounting year.

vii) Sundry Creditor

It includes total amount purchases which is to be paid to creditors.

CHAPTER V

SUMMARY, CONCLUSION AND RECOMMENDATION

This chapter is used to summarize the whole study. This study also aims to draw the conclusion of the study and forward the applicable recommendations for more efficient current assets management of UNLtd.

5.1 Summary

For the purpose of the analysis this study has been in five chapters. The first chapter focuses the background, working capital practice in Nepal. It attempts a little bit to introduce the working capital management of UNLtd. It deals with problems studied and the objectives of the study too. The second chapter deals with review of literature which includes conceptual framework and different view of different writers, books and articles. Research methodology followed in this study is given in the third chapter. It presents the nature and sources of data, data collection and processing technique, population and sample and financial and statistical tools used. The fourth chapter includes the presentation and analysis of the data derived from UNLtd. An attempt to analyze the working capital component of UNLtd for seven years has been done. For the purpose of analysis of the composition of current assets and current liabilities, proportion of current assets to fixed assets and proportion of current assets to sales have been analyzed. It has also analyzed the liquidity position, turnover position, profitability position and cash conversion cycle of UNLtd. As statistical tools, coefficient of correlation simple regression model and hypothesis testing have been applied for the fulfillment of the objective as described in chapter one. The necessary data are derived from the balance sheet and profit and loss account of the UNLtd. With the help of the methodology described in chapter three, these data are presented and analyzed.

According to the study, proportion of current assets is highly fluctuating during whole study period. Inventory and cash & bank have held the large portion of current assets. The average portion of inventory and cash & bank are 32.06% and 32.71% respectively during the study period. The ratio of current assets to fixed assets varies from 2.32 to 6.98.

The components of current liabilities i.e. short term loan, sundry creditors and provision are fluctuating. The average proportion of sundry creditors is 49.49%. Current ratio of UNLtd is less than one times in the FY 2064/65. It varies from 0.99 to 1.79 times. During the study period quick ratio is less than one times except in FY 2058/59, 2060/61 and 2061/62. Average quick ratio of UNLtd is 0.95 times which is less than the standard. Inventory turnover ratio and inventory conversion period are 8.17 times and 49 days respectively. Similarly, receivable turnover ratio and receivable conversion period of UNLtd are 25.19 times and 21 days respectively. The average gross profit margin is 29.32% but the net profit margin of UNLtd is only 8.65% because of high operating expenses ratio i.e. 88.57%. In average, the cash conversion cycle of the company is only 13 days which is favourable for the company. The relationship of working capital with profit and sales of UNLtd is not significant during the study period.

5.2 Conclusion

In conclusion, it can be said that the management of working capital cannot be neglected by Unilever Nepal Ltd. Otherwise; it can seriously erode their financial position. Managers would understand the factors determining working capital. Some of the Nepalese manufacturing companies are suffering from huge losses due to their administrative negligence in day-to-day operation, unnecessary blockage of investor or lack of specific working capital policy.

From the study period under observation of UNLtd, various facts have been found out which have been presented in conclusion as follows:

1. The average current ratio and Quick ratio of Unilever Nepal Ltd. as per table no:5 and 6 has 1.42:1 and 0.95:1 as compared to standards of 2:1 and 1:1 respectively for the period under observation. Here, the satisfactory quick ratio but poor current ratio shows that company has not maintained sufficient stock.

2. Components of current liabilities where sundry creditors is 49.94%, misc. current liabilities and provision is 43.74% and short term loan is only 6.32%.sundry creditors hold major portion but short term loan is too low in comparison to their sources of current liabilities. In other hand, components of current assets whereas, inventories 32.06%, cash and bank 32.17%, sundry debtors 12.19% and misc. current assets 23.03%. There has been wide variation in these components of both current assets and current liabilities during the period of study as can be seen from table: 2 and Table: 4 respectively.

These coupled with negative net working capital of UNLtd in year 2064/65 as seen in table 1 can be a major case of concern in future. Also this reflects there is no proper working capital management policy in place.

3. The sales have been showing decreasing trend except for slight change in 2062/63. But , this change was not enough to take the sales to end of 2058/59.Further to this the percentage of current assets to sales in increasing trend from 26.14 to 60.16 as can be seen from table no: 3.And also the ratio of current assets to fixed assets of UNLtd is in increasing trend. Current assets /fixed assets ratio is greater than 2 times. It means UNLtd is moving toward the conservative policy. And overall return position of the company is not also in favourable condition because of inefficient utilization of current assets. To make sales maximization, the company is increasing a large amount in current assets.

4. Net profit margin , gross profit margin , return on assets and operating expenses ratio of UNLtd has 8.65%, 29.32%, 14.89% and 88.57% respectively, which has been seen in table no: 10, 9, 11, 12 respectively. After analyzing the various profitability ratio, it can be concluded that there is very high operating expenses ratio has shown that means UNLtd has not taken seriously about the efficiency and management of the company.

5. Relationship between working capital and profit & working capital and sales are measure by Karl Pearson's co-efficient of correlation (r) and their probable error(PE). WC and profit has negative correlation that is $r = -0.86$ and probable error ($6PE$) = 0.066 where value of r is less than the value of PE by 0.183, which is calculated in Appendix 1. And shown from table no: 14. This cleared that UNLtd has insignificants relationship and negative correlation between net working capital and profit. On other hand, net working capital and sales has positive correlation value of $r = 0.71$ and $PE = 0.254$, which is calculated in Appendix 2 that means the value of r is less than $6PE$. The relationship between working capital and sales is insignificant and positive correlation. UNLtd has still followed conservative working capital management policy. It reduces the risk but it also lead to reduce the possibility of higher return.

6. Here average cash conversion cycle is 13 days which can be seen from table no.13. The out come of the company is in satisfactory condition. But analysis shows that there is long PDP and short ICP and RCP in UNLtd, which is favourable only for short run but it will cause negative impact from its trade creditors in upcoming days of the company.

UNLtd has still followed conservative working capital management policy. Besides all above conclusions the profitability of UNLtd is satisfactory.

5.3 Recommendations

At the end of research, the study without practicable suggestion would be incomplete phenomenon. Therefore, the following recommendations have been made on the basis of foregoing analysis for further improvement of the existing WC management.

I. UNLtd should set the standard for the ratio of current assets to fixed assets. It has not any clear vision about the management of current assets to fixed assets. Thus, UNLtd should have the proper plan to improve its profitability in future.

II. UNLtd has high amount of cash & bank and inventories, which should be reduced or optimal level should be adjusted according to the sales and production. In this regard management is advised to invest in marketable securities.

III. The study shows that there is not perfect liquidity position. So the company should improve the liquidity position by reducing the current liabilities.

IV. There is extremely high operating ratio in UNLtd which indicates inefficiency and mismanagement of the company. So, UNLtd, to maintain the position, should reduce the operating expenses by adopting the various techniques such as: value analysis, standard costing and budgeting.

V. There is negative CCC in the FY 2061/62 and 2062/63 which is not good for the company. It causes negative impact from its creditors. So, company should manage ICP, RCP and CCC by applying suitable credit policy. For this company should clearly define its credit standard, credit terms and collection policy.

VI. To run day-to-day business activities and earn maximum profit current assets should be maintained properly, but it has been observed that there is no concrete current assets management and specific

working capital policy in UNLtd. So, the company should introduce effective inventory control techniques to decrease huge blockage of inventory and credit policy technique for collecting receivables.

VII. To increase net income, company should adopt aggressive working capital policy by borrowing on short term basis to finance the fixed assets like plant and machinery.

VIII. Since the management is backbone of any company, its success and failure depends upon the managerial skills. So, company should allocate some money for training of financial employees to produce skilled and experienced manpower.

BIBLIOGRAPHY

A. BOOKS

- Alexander, E. (1976) *China's Economic Development*. Michigan: The University of Michigan Press.
- Adhikari, Nanda Kumar (2004): *Fundamental of Financial Management*; Kathmandu, Khanal Books and Stationary.
- Besant. A. and Rai, C. (1978) *Corporate Financial Management*. New Delhi: Tata McGraw Hill Publishing Co.
- Brown, J.L. and Howard, L. R. (1982) *Managerial Accounting and Finance*. London: The ELBS and Macdonald and Erans, Fourth Edition. .
- Gitman, L.J.(1988) *Principals of Managerial Finance*. New York: Harper and Row.
- Gollaghar, J.S. (1970) *Working Capital Management Seminar Cum Workshop on Financial Management*, CEDA, T.U. Kathmandu.
- Hampton, John J. (1983) *Financial Decision Making*. New Delhi: Prentice Hall of India Pvt. Ltd.
- Hampton, John J. (1986) *Financial Decision Making Concept Problem and Cases*. New Delhi: Prentice Hall of India Pvt. Ltd.
- James C., Van Horne (1970) *A Risk - Return Analysis of a firms Working Capital Positions*, pp. 50-58, *Engineering Economist*.
- Joshi, PR. (2001): *Research Methodology*; 1st ed.; Kathmandu, Buddha Academic Enterprises Pvt. Ltd.
- Khan, M.Y. and Jain. P.K. (1981) *Financial Management Text and Problems*, New Delhi: Tata McGraw Hill publishing Co.P.607-608.

- Khan, M.Y. and Jain. P.K. (1993) *Financial Management Text and Problems*, New Delhi: Tata McGraw Hill publishing Co., Second Edition.
- Mathur, Iqbal (1979) *Introduction to Financial Management*. New York: Macmillan Publishing Co. Inc.
- Pandey, I.M. (1986). *Financial Management*, National Book Organization.
- Pandey, I.M. (1994) *Financial Management*, New Delhi Vikas Publishing House Pvt.
- Pandey, I.M. (1995-1999). *Financial Management*, Vikash Publishing house P. Ltd
- Pradhan, Dr. R.S. (2004): *Financial Management*; 2nd ed., Kathmandu, Buddha Academic Publishers and Distributors Pvt. Ltd.;292-294.
- Pradhan (1992): *Basis of Financial Management*; Kathmandu, Educational Enterprises Pvt. Ltd. ,P.153.
- Soloman Ezra and Pringle, J.J. (1978). *An Introduction to Financial Management*. New Delhi: Prentice Hall of India Pvt.
- Van Horne, James C. *Financial Management and Policy*, Prentice Hall of India P. Ltd.
- Weston, J. Fred (1981) *Managerial Finance*. Illinois: The Dryden Press Hinsdale.
- Weston, J.F. and Brigham, E.F. (1984). *Managerial Finance*. Illinois: The Dryden Press;267.
- Weston, J.F. and Brigham, E.F. (1996). *Managerial Finance*. (11th ed.)Chicago: The Dryden Press,P.344.
- Wolf, H.K. and Pant;R. (2001): *A Hand Book of Social Science and Thesis Writing*; Kathmandu, Buddha Academic Enterprises Pvt. Ltd.

B. JOURNALS, ARTICLES, BULLETINGS, REPORTS AND DOCUMENTS

Acharya, K. (1985) "*Problems and Implementers in the Management of Working Capital in Nepalese Enterprises*", *Bulletin of ISDOC Ktm*, Vol. 10, No. 3.

Acharya, K. (1985) "*Problems and Implements in the Management of Working Capital in Nepalese Enterprises*", *A Quarterly ISDOC Bulletin*, Kathamndu, Vol.No.3.

Pradhan, R.S. and K.D. Koirala (1983) "*Some Reflection on Working Capital Management in Nepalese Corporations*", *The Nepalese Management Review*. Vol. III, No. 1.

Pradhan, Radhey Shyam (1988). "*Management of Working Capital by Nepalese Corporations*," *The Nepalese Management Review*, Vol. 8, No. 1.

Shrestha, Manohar K., "*Working Capital Management in Selected PEs*", A PYC, Management Journal.

Shrestha, Manohar Krishna (1982-1983) "*Working Capital Management in PEs: A Study on Financial Results and Constraints*", *A Quarterly ISDOC Bulletin*, Vol. 8, No. 1-4, Kathmandu.

C. Master Degree Thesis

Adhikari, Bishwa Raj (2004): "*A Study on Working Capital Management of Nepalese Manufacturing Companies*", Master Degree Thesis, T.U.

Agrawal, Anil Kumal (2005): "*Working Capital Management of Cigarette Industry in Nepal with Special Reference to Janakpur Cigarette Factory*", Master Degree Thesis, R.R.M. Campus, T.U.

Aryal, Bishwas Raj (2006): "*A Study on Working Capital Management of Pharmaceutical Industry of Nepal with Special Reference to Royal Drugs Limited*", Master Degree Thesis, T.U.

Aryal Bhagawan (1995): "*An Analysis on Working Capital Management with Special Reference to Hetauda Textile and Balaju Textile*", Unpublished Master Degree Dissertation T.U.

Niraj K.C. (2000): "*Comparative Study of working capital management of Nepal Bank Limited and Nepal Arab Bank limited*", Unpublished Master Degree Thesis, Faculty of Management, Shanker Dev Campus, Ktm.

Sapkota Jiban Nath (1984): "*A study on working Capital Management in Himal Cement Company Limited*", Master Degree Thesis, T.U.

Shrestha, Prem Kumar (1994): "*A Study On Working Capital Management Bhrikuti Paper Mills Ltd,*" Unpublished Master Degree Dissertation T.U.

Yogi, Dhurba Nath (2000): "*A Study on Working Capital Management of Nepal Lever Limited*", Master Degree Thesis, Tribhuvan University, Kritipur.

D. Website

Nepal Stock Exchange; www.nepalstock.com

Appendix -1

Calculation of correlation coefficient between Net WC and Net Profit

(Unit Rs. in Millions)

FY	WC (X)	Profit (Y)	dx = X - A ₁ (163)	dy = Y - A ₂ (141)	dxdy	dx ²	dy ²
2056/057	190	121	27	-20	-540	729	400
2057/058	240	68	77	-73	-5621	5929	5329
2058/059	176	43	13	-98	-1274	169	9604
2059/060	163	93	0	-48	0	0	2304
2060/061	181	141	18	0	0	324	0
2061/062	9	189	-154	48	-7392	23716	2304
2062/063	-0.625	238	-163.625	97	-15871.625	26773.14	9409
			∑dx = -182.625	∑dy = -94	∑dxdy = -30698.625	∑dx ² = 57640.14	∑dy ² = 29350

$$r = \frac{\sum dx dy}{\sqrt{\sum dx^2} \sqrt{\sum dy^2}}$$

$$= \frac{7(-30698.625)}{\sqrt{7(57640.14)} \sqrt{7(29350)}} = -0.86$$

$$PE = \frac{0.6745(1-r^2)}{\sqrt{n}} = \frac{0.6745\{1-(0.86)^2\}}{\sqrt{7}} = 0.066$$

$$6 \times PE = 6 \times 0.066 = 0.396$$

Appendix -2

Calculation of correlation coefficient between Net WC and Net Sales

(Unit Rs. in Millions)

FY	Sales (X)	WC (Y)	dx = X - A ₁ (1460)	dy = Y - A ₂ (163)	dxdy	dx ²	dy ²
2056/057	1729	190	269	27	7263	72361	729
2057/058	1541	240	81	77	6237	6561	5929
2058/059	1236	176	-224	13	-2912	50176	169
2059/060	1245	163	-215	0	0	46225	0
2060/061	1525	181	65	18	1170	4225	324
2061/062	1482	9	22	-154	-3388	484	23716
2062/063	1470	-0.625	10	-163.625	-1636.25	100	26773.14
			∑dx = 8	∑dy = -182.625	∑dxdy = 6733.75	∑dx ² = 180132	∑dy ² = 57640.14

$$r = \frac{\sum dx dy}{\sqrt{\sum dx^2} \sqrt{\sum dy^2}}$$

$$r = \frac{7(6733.75) - (8)(-182.625)}{\sqrt{7(180132) - (8)^2} \sqrt{7(57640.14) - (-182.625)^2}} = 0.071$$

$$PE = r \frac{\sum dx^2}{\sum n} = 0.071 \frac{180132}{7} = 0.254$$

$$6 \times PE = 6 \times 0.071 = 1.524$$

Appendix -3

Calculation of regression coefficient between Net Sales (Independent variable) and Net WC (Dependent variable)

(Unit Rs. in Millions)

FY	Sales (X)	WC (Y)	X ²	XY
2056/057	1729	190	2989441	328510
2057/058	1541	240	2374681	369840
2058/059	1236	176	1527696	217536
2059/060	1245	163	1550025	202935
2060/061	1525	181	2325625	276025
2061/062	1482	9	2196324	13338
2062/063	1470	-0.625	2160900	-918.75
	∑X = 10228	∑Y = 958.625	∑X ² = 15124692	∑XY = 1407265.25

$$\text{Reg. Coeff. (b)} = \frac{N\sum XY - \sum X \sum Y}{N\sum X^2 - (\sum X)^2} = \frac{7(1407265.25) - (10228)(958.625)}{7(15124692) - (10228)^2} = 0.0385$$

$$\text{Constant (a)} = \frac{\sum X^2 \sum Y - \sum X \sum XY}{N\sum X^2 - (\sum X)^2} = \frac{(15124692)(958.625) - (10228)(1407265.25)}{7(15124692) - (10228)^2} = 80.59$$

Regression equation,

$$Y = a + bX$$

$$Y = 80.59 + 0.0385X$$

Appendix - 4

Calculation of regression coefficient between Net Profit (Dependent variable) and Net WC (Independent variable)

(Unit Rs. in Millions)

FY	WC (X)	Profit (Y)	X ²	XY
2056/057	190	121	36100	36100
2057/058	240	68	57600	16320
2058/059	176	43	30976	7568
2059/060	163	93	26569	15159
2060/061	181	141	32761	25521
2061/062	9	189	81	1701
2062/063	-0.625	238	0.39	-148.75
	∑X = 958.625	∑Y = 893	∑XY = 184087.39	∑X ² = 89110.25

$$\text{Reg. Coeff. (b)} = \frac{N\sum XY - \sum X \sum Y}{N\sum X^2 - (\sum X)^2} = \frac{7(89110.25) - (958.375)(893)}{7(183736.39) - (958.375)^2} = -0.63$$

$$\text{Constant (a)} = \frac{\sum X^2 Y - \sum X \sum Y}{N\sum X^2 - (\sum X)^2} = \frac{(184087.39)(893) - (958.375)(893)}{7(184087.39) - (958.375)^2} = 213.41$$

Regression equation,

$$Y = a + bX$$

$$Y = 213.41 + (-0.63)X$$

Appendix - 5

Students' T-test for significance of correlation between Net WC and Sales

$$t = \frac{r}{\sqrt{1-r^2}} \sqrt{n-2} = \frac{0.071}{\sqrt{1-(0.071)^2}} \sqrt{7-2} = 0.159$$

$$\text{Degree of freedom} = n - 2 = 7 - 2 = 5$$

Appendix - 6

T-test for Significance of Correlation between Net WC and Net Profit

$$t = \frac{r}{\sqrt{1-r^2}} \sqrt{n-2} = \frac{0.86}{\sqrt{1-(0.86)^2}} \sqrt{7-2} = 3.768$$

$$\dots t = 3.768$$

$$\text{Degree of freedom} = n - 2 = 7 - 2 = 5$$