

Chapter I

Introduction

1.1 Background of the Study

Industrialization is an important (major) factor for achieving the basic objectives of a country's economic and social progress or in another word, industrialization is considered essential for economic development of the country these days. “Industrialization not only provides goods and services but also creates employment opportunities. It facilitates an effective mobilization of resources of capital and skill, which might otherwise remain unutilized. Industrial development, thus has a multiplier effect on the economy”.(*Pant; 2003:188*)

Nepal is one of the developing countries. In the country like Nepal, industrial development plays vital role in economic development. But the role of Nepalese manufacturing industry in the national economy is not satisfactory. Industrial development helps a country in various ways. It contributes to national income, reduces unemployment, reduce the dependency on imports and promotes exports. Industrialization helps to create capital money by means of utilization of unused resources by sifting them from unproductive sectors to productive sectors. HMG of Nepal has been emphasizing the development of industries both in public and private sectors. The policy of the government to encourage industrialization in the privates sectors includes financial facilities through financial institutions, tax concession and so many other facilities through liberalization policy.

“Industrial development in Nepal, however, started getting regular attention of the government under the aegis of development plans after the dawn of democracy in 1951. Several industries were established in the public sector mostly with the financial and technical assistance of the USSR and China”.(*Pant;2003:188*) The government gave much emphasis on the development of the public enterprises after the adoption of first five year plan in 1956. After 1956 Nepal started planned economic development efforts to obtain

rapid economic growth. In our country, various manufacturing companies have been established and developed through government effects.

The private companies play vital role in industrialization and economic growth of the nation. Due to the establishment of private companies, the government becomes able to reduce its investment in public sectors, which are incurring continuously loss. The overall development of the country depends on the development of manufacturing companies. Now, Nepal has adopted the policy of economic liberalization and entered into globalization through the member of WTO. The government is privatizing the public sectors enterprises and there are not any new manufacturing industries established in the public sectors. Government adopts foreign direct investment (FDI) policy to encourage foreign investors. This policy creates positive impact on the private manufacturing companies in industrial development. Nepal has recently got the membership of WTO, So, the role of manufacturing companies to develop the national economy is very important.

In above paragraphs, the background as well as the process and growth of manufacturing companies in the context of Nepal have been discussed. Main purpose of this study is to present and analyze the WC management of Nepalese manufacturing companies. The WC management practice in the Nepalese manufacturing companies provides totally different picture. “Working capital management which is concerned with short term financial decision appears to have been relatively neglected in the literature of finance.”(*Pradhan;1986:3*)

The term WC management is concerned only with the management of current assets and current liabilities of the business, which is necessary for day-to-day operation. The WC is compared as life blood of an companies. It is a controlling nerve of business. Hence, the success and failure of any company depends on WC management. Manufacturing companies should not have the excess WC because it is the sign of poor management and it affects the profitability as well as wealth maximization. Similarly, due to lack of WC, there is problem in day to day operation or production. In other words, especially in small firm's WC management may be the factor that decides success or failure, in larger firm

efficient WC management can significantly affects the firm's risk-return and share price. The inefficient management of WC leads to loss of profit in the short run but it ultimately leads to the dawn fall of the enterprises in the long run.

One of the areas of WC management is to study the nature of short run behaviour of the demand for WC and its various components, viz., cash, receivable and inventories. An organization needs not only the fixed capital but also the working capital. Therefore, at the time of deciding the capital structure of manufacturing companies, the aspect of WC should be treated in the same way as the fixed capital. “The management of current assets is similar to that of fixed assets in the sense that in both cases a firm analyzes its effects in its return and risk. The large holding of current assets, especially cash, strengthens the firms' liquidity position (and reduces riskness), but reduces the overall profitability”. (*Pandey;1999:807*)

“Every company has varianle 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 . But due to the lack of basic knowledge of WC management most of the companies in Nepal are suffering from great loss. It is a well accepted fact that, Nepal has abundant human and natural resources to exploit but at the same time it has inadequate financial resources. So, in a country like Nepal it is essential that WC utilization be improved.” (*Pradhan;1999:9*)

WC is therefore the size of investment in each type of current assets. e.g. cash, receivables and inventory. Decision regarding WC affects the profitability of the firm in the short run but it affects the very survival in thee long run. Faster the turnover of cash into raw material, raw material 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 Statement of the Problem

Working Capital is the circulating capital, which is compared as life blood of the human beings for the organization. As WC is the size of investment in each type of CAs, each of these CAs should be managed efficiently and effectively. It is because, decision regarding WC not only affects profitability of the organization in the short run but also affects the survival in the long run.

We know that WC management became difficult in Nepalese manufacturing companies. Here, we are trying to find out why manufacturing companies are not able to manage the WC of the company and why they have not followed good approach of the WC management. WC management decision is a significant managerial decision. Various factors affects the WC management of the business organization. If the firm wants to maintain sound financial position, it should maintain optimal level of WC.

Though, most of the manufacturing companies in Nepal have well recognized the importance of proper management, they are still facing the problem of WC management due to the various factors related to it. Managers still focus their attention on the procurement aspect of WC but not on the efficient utilization of fund. The deficiency WC practices, administrative negligence's in day to day operations, liquidity problem, lower turnover of assets, negative rate of return, higher production and operation expenses and poor collection and payable policy as well as inventory management system are the major problem facing in Nepalese manufacturing companies. Financing function in Nepalese manufacturing companies means only procuring and raising fund. And it is also seen in practical aspect that there is lack of appropriate assets mix policy in Nepalese manufacturing companies. As we know that investors want to earn return from their investment. Therefore, any organization should make profit for investors but profit is not only the indicator of proper management of financing. So, basically, this study have tried to find out the issue of WC management in Nepalese manufacturing companies, which is the major aspect of financial management. The research study has tried to find out the answer to the following questions.

- Are the investment of manufacturing companies in CAs appropriate to their total assets level ?
- What is the structure of WC in selected companies ? Are there proper investment in each type of WC ?
- Is the WC policy appropriately followed by selected manufacturing companies ?
- Are there sound liquidity position in Nepalese manufacturing companies ?
- Are the Nepalese manufacturing companies being able to utilize their CAs properly ? What is the nature of WC utilization ?
- Are overall profitability of companies satisfactory ?

1.3 Objective of the Study

Working Capital Plays vital role of success or failure of the business firm. The aspect of WC concerned with short term financing decision has never received much attention in the literature of finance. “Research is a systematic and organized effort to investigate a specific problem that needs a solution. This process of investigation involves a series of well thought out activities of gathering, recording, analyzing and interpreting the data with the purpose of finding solution to the problem”.(Joshi; 2001:7)

The main objective of this study is to examine the WC policy of listed Nepalese manufacturing companies. The specific objective of the study are as follows.

1. To appraise the WC management of manufacturing companies with respect to cash, credit and inventory management and to study the relationship between sales and these variables of WC.
2. To analyze the liquidity composition of WC, assets utilization and profitability position of selected manufacturing companies.
3. To make an overall comparison of WC management managed by various manufacturing companies.
4. To provide recommendation to the concerned companies on the basis of this study.

1.4 Limitation of the Study

This study is mainly based on secondary data, which have been collected from books, financial statements and reports of the relevant companies and web sites. Moreover the study covers the information from the year 2003 A.D. to 2008 A.D.

There are more than 150 listed companies in Nepal, which are related with different sectors like banking, manufacturing & processing, hotel, trading, insurance, finance and others. Among these listed companies, out of 21 manufacturing companies only 9 company have been taken for research study.

Because of the uncertain situation of the country at present, businessmen are only trying to be at BEP point more than the maximum profit. All the companies are trying to make their strategy and strict policy by which they may improve their warning condition. Because of the strict policy of the company, personal visits to all over the companies and the survey of their system are nearly impossible, so the study has to be done depending largely on security board, Internet and e-mail.

1.5 Organization of the Study

The study has been classified into five chapter. The title of each of these parts are follows :

Chapter I : Introduction: The first chapter includes various aspects of present study like background of the study, statement of the problem, objective of the study, need for the study and limitations of the study.

Chapter II : Review of Literature : The second Chapter deals with the study of related books, and research work which are already published and conducted by different experts and researcher in the field of WC.

Chapter III : Research Methodology : The third Chapter deals research methodology process such as, research design, nature and source of data,

population and sampling of the study, methods tools of analysis of data viz. quantitative and qualitative tools and at last definition of key terms.

Chapter IV : Presentation and Analysis of Data: The forth chapter introduces the main aspect of the study. It deals with data collection procedure and presentation of data with different statistical and financial tools, and findings of the study.

Chapter V : Summary, Conclusion and Recommendation : The fifth chapter presents summary, conclusion and recommendations.

Chapter II

Review of Literature

Review of literature means reviewing research studies or other relevant propositions in the related areas of the study so that all the past studies, their conclusion and deficiencies may be known and further research can be conducted. So, the main purpose of this chapter is to provide an insight into WC management of given bird eye view of different experts through regarding theory and studies of WC and its implications. While making review of related literature of WC management the researcher has gone through different books, documents, Journals and Articles, bulletins, reports and previous studies. So far as the management of WC in Nepalese manufacturing companies is concerned, number of studies have been undertaken by different financial experts and students of management, describing the WC management of various enterprises. To conduct this study it is important to go through relevant literature on WC management in context of the Nepalese manufacturing companies.

This chapter has been divided into three sections which are organized as follows.

- * Conceptual Framework
- * Review of Journals and Articles
- * Review of Thesis

2.1 Conceptual Framework

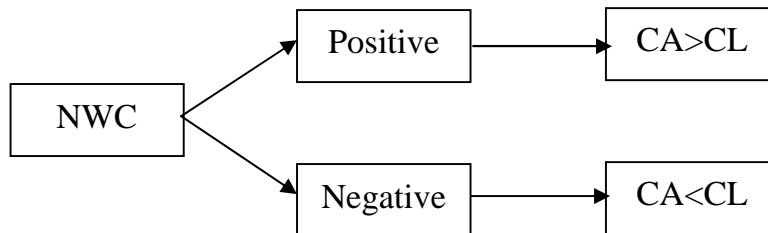
An enterprise need not only fixed capital but also WC. “The WC is the capital that needs to conduct the day to day operation of a business firm. For day to day operation of the concern, it finance in some of assets of short term nature like inventories, account receivable, cash and marketable securities etc. When all these short term assets are put together, it is called working capital, so we can say that WC is related with short term financing. The area of WC management is not only related to the functional area of business but it is also related to other discipline like economic and accounting”.(Pradhan;1999:18-19) There are two concepts of WC: Gross WC and Net WC. Gross WC means the current assets

only. It is concerned nothing the liabilities side of balance sheets. WC is the excess of CA over current liabilities according to Net concept of WC. Working capital management is concerned with the problems that arise in attempting to manage the CA, the CL and interrelation ship that exist between them.

Gross WC refers to the firm's investment in CA. Net WC means the difference between CA and CL and, therefore, represents that position of CA which the firm has to finance either from long term funds or bank borrowings. How much a firm will invest in CA depends on its operating cycles, where operating cycle means the time duration which the firm requires to manufacture and sell the products and to collect cash. So, it is major determinant to WC requirement and the firm's credit policy is also a major factor which influences WC requirement. The firm's decision about the level of investment in CA involves a trade off between risk and return. When the firm invest more in CA it reduces the risk of illiquidity but loses in terms of profitability, since the opportunity of earning from the excess investment in CA is lost. The firm, therefore, is required to strike a right balance. "The financing of CA also involves a trade off between risk and return. A firm can choose from short or long term source of finance. If the firm uses more of short term fund for financing both CA and fixed assets, its financing policy is considered aggressive and risky. Its financing policy is considered conservative if it makes relatively more use in long term source of financing its assets. The balance approach is to finance permanent CA by long term source and temporary CA by short term source of finance". (Pandey;1999:833)

Glenn V. Henderson and his friends also suggest the gross and net concept and concluded that both concept are important to firm management but special attention must be given to the net WC level because of its impact on liquidity. "A firm could have a very desirable WC level but goes bankrupt because of liquidity problem, caused by a low net WC position. An increase in net WC reduces risk because liquidity is increased. A decrease in net WC implies that a greater proportion of fund are invested in fixed assets, which have a higher yield than CAs. Thus profitability should increase". (Henderson, Trennepohl and Wert:28) WC can also be explained from negative and positive point of

view. If the total CA are more than the total CL then it is said to be positive WC and vice-versa. “WC is needed in every organization to run day to day business activities, since there is a time lag between the sales of product and realization of cash, every organization requires sufficient amount of WC to meet the daily requirement and to tackle the problem when arise for the smooth running of the business”. (*Mathur;1994:176*)



The cash and marketable securities are respectively considered as purely liquid and near liquid assets where as the all receivable and inventories are not. However, they can be liquidated when necessary with in a period of less than one year, so the capital investment on these assets is known as WC. "The objectives of the managing WC is to aid in the value maximization of the firm by minimizing the cost of WC. In particular, the cost of maintaining the WC depends on the source of finance used. The short term source generally costs less than the long term source. The job of financial manager is to balance the cost of WC and the risk associated with source of capital". (*Pradhan;1992:147*)

Weston and Copeland also explain about WC with the help of short term finance. “Short term management encompasses, WC management and involves all aspects of the administration of CA and CL or WC policy was defined to encompass all aspects of the management of CA and CL. Short term financial management is the term now widely used in place of WC management”. (*Weston and Copeland;9ed.:835*)

In order to survive, an organization must be able to meet all its commitment as they fall due, i.e. to pay its bill on time. The efficient management of WC, therefore, and particularly the provision of adequate level of liquidity at all times are crucial. Accountants defined WC in accounting terms as the difference between CAs and CLs. This is static approach and not a very useful one. Liquidity- the ability to meet commitments and to pay bills- comes from

the availability of cash. A company could have considerable WC in the accounting sense (because of very large inventories) but no cash, and thus be on the point of insolvency. “This approach has been taken by the researcher based on cash flows rather than an accounting concepts”. (*Kubr;2002:305*)

“In the management of WC, the must posing questions are”. (*Pradhan;1992:147-157*)

- * How much WC to maintain ?
- * What Type of financing to use ?
- * How to adjust the WC when there is change in the level of business activities ?

In particular, they face the following issues with respect to the management of WC.

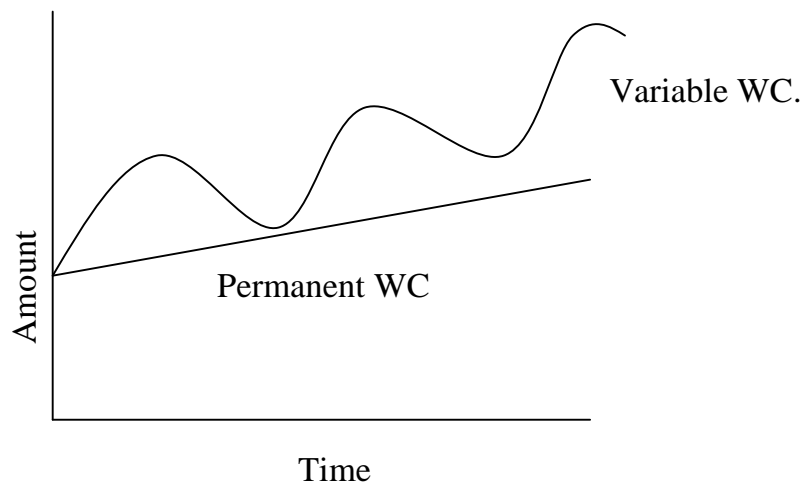
- * Size of WC to maintain-size of each type of CAs.
- * Size of permanent and seasonal WC investment.
- * Source of financing-short term and /or long term debt and/or equity financing.
- * Cost of Financing-cost of short term Vs long term financing.
- * Risk associated with type of financing-trade off between cost and risk.
- * Maintenance of current ratio-minimizing the risk of cash flow problem.

“WC management is the functional area of finance that covers all the current accounts of the firm. It is concerned with adequacy of CAs as well as the level of risk posed by CLs. It is a discipline that seeks proper policies for managing CAs and CLs and practical techniques for maximizing the benefit from managing WC. The firm WC may be viewed as being comprised of two Components. WC can be classified in two ways on the basis of concept and on the basis of time component. The first classification does not take into account on time element. It is important in the formulation of procurement policies. On the basis of time WC can be divided in two ways”. (*Hampton;1998:177-182*)

- * **Permanent WC** : is minimum amount which requires to ensure effective utilization of fixed facilities and for maintaining the circulation of CA.

* **Temporary/variable WC:** is the amount of WC which is required to meet the seasonal demands. It is amount of WC which is over the level of permanent WC. This represents additional assets required at certain time during the year.

Figure: 2.1
Permanent and variable WC



(Source :Hampton;1998)

A study of WC is of major importance to internal and external analysis because of its close relationship to current day to day operations of a business firm. Inadequacy or mismanagement of WC is one of the leading causes of business failure. “The requirement of finance in business arise mainly due to two factors viz., acquisition of fixed assets and provision of WC. The WC is necessary to meet day to day revenue expense like purchase of materials, wage payment, meeting overhead expenses etc”. (Jain;1996:133) “About 60 percent of a typical financial manager's time is devoted to WC management”. (Brigham, Gapenski and Ehrhart;9th ed: 792)

Table : 2.1
Importance of WC Management

Importance	Reason
Time devoted to WC Management	The largest portion of financial managers' time is consumed in day to day operation of the business to dealing with A/C receivable A/C payable, inventories and cash etc.
Investment in CAs	CAs represent more than one half of the total assets of a business firm and it is volatile.
Important for Small firms	The small firm may minimize its investment in fixed assets by renting or leasing plant and equipment but there is no way of avoiding an investment in cash, receivable and inventories.
Relationship between sales growth and current assets	The relationship between sales growth and CAs is close and direct.

(Source: Pradhan;2004:346)

In today's world of intense competition, WC management is receiving increasing attention from managers. In fact, the goal of many leading companies today is zero WC. “Proponents of the zero WC concept claim that a movement toward this goal not only generates cash but also speeds up production and helps businesses make more timely deliveries and operate more efficiently. The concept has its own definition of WC: *(Inventories + Receivable - Payable)*. The rationale here is that inventories and receivables are the keys to making sales but that inventories can be financed by suppliers through account payable.” (Brigham, Gapenski and Ehrhart;792) The most important factor in moving toward zero WC is increased speed. The production process has to be fast. In fact, the choice of a particular concept will depend upon the purpose in view. Of the two concepts, the net and gross, the net is more useful if the purpose is to find out the liquidity position of the enterprise. If, on the other hand, the interest lies in finding out whether the total CA 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, receivable and inventories so, as to being (and continue) its operation. The net concept is more relevant for a going concern.”
(Pradhan;2004:344-346)

There are no rules to determine WC requirement of the firm. Number of factors influence WC needs and all factors are of their own important. Many studies show that manufacturing firms needed higher volume of WC as compared to public utility enterprise. “The following factors are pertinent for having an overall view of the factors affecting WC needs.”(Jani;1996 :132-142)

2.2 Factors Determining to Working Capital

1. Nature of Business : A company's WC requirement are basically related to the kind of business it conducts. Public utilities have the lower requirement for CA because they have only cash sales and supply service, not products. In manufacturing companies stock in trade represent a large investment. Trading and financial firm require a large sum of money as WC.

2. Size of Business : The size of business also have an important bearing in determining WC needs of a firm. A firm with large scale operation will need more WC than a small firm.

3. Manufacturing Process : If the manufacturing process in an industry entails a large period because of its complex character, more WC is required to finance that process. An extended manufacturing time span means a larger tie-up of fund in inventories and higher amount of WC.

4. Business Fluctuations : Business variations affects the WC requirement, especially the temporary WC requirement of the firm. In the boom period the sales will increase correspondingly, the firm's investment in inventories and book debts will also increase. This act of the firm will require further additions to WC and vice-versa.

5. Turnover of Circulation Capital : The speed with which the WC completes its round i.e. conversion of cash into inventory of raw material and stores inventory of raw materials into inventory of finished goods, inventory of finished goods into book debts or account receivable and book debts into cash account plays an important role in judging the requirement of the WC.

6. Growth and Expansion of Business : A growing firm has to invest funds in fixed assets in order to sustain its growing production and sales. This will increase inventory in CA to support enlarged scale of operation. It will require more WC.

7. Volume of Sales : A firm maintains the CA because they are needed to support the operational activities which results in sales. As the volume of sales increase there is an increase in the investment of WC, in the cost of operation, in inventories and in receivables. The increase in CAs will result in increase in the requirement of WC.

8. Term of Purchase and Sales : If the credit terms of purchase are more favorable and those of sales less liberal, less cash will be invested in inventory. A firm which can get credit easily on favorable conditions, will require less amount of WC than the firm without such a facility.

9. Cash Requirement : Cash is one of the current assets which is essential for the successful operation of the production cycle. Cash should be adequate and properly utilized. Adequate cash is also required to maintain good credit relations.

10. Profit Margin and Profit Appropriation : The net profit is a source of WC. A high net profit margin contributes towards the WC pool. The requirement of WC is also influenced by the tax liabilities and the firm's policy to retain or distribute profit. A high tax liability will impose an additional strain on the WC.

Payment of dividend consume cash resources and, therefore, reduce the firm's WC to that extent.

11. Change in Technology : Technological development related to the production process have a sharp impact on the need for WC. Change in technology will need additional amount of WC due to fresh investment in new assets.

12. Inventory Turnover : With a better inventory control a firm is able to reduce its WC requirement. If the inventory turnover is high the WC requirement will be low.

13. Other Factors: Absence of co-ordination in production and distribution policies in a company leads to a high demand for WC. The import policy of the government may also affect the requirement of the WC for the companies as they have to arrange for funds for importing goods at specified times.

Besides the above factors, the efficient management of the trade cycle and attitude of the management are also important. “The impact of socio, political, economical, technological, natural, national, global, fiscal and monetary policies also have to be studied in specific cases for assessing the WC needs. Perhaps a SWOT analysis may be helpful in this context. In short, the WC requirement of an organization depends upon the factors know as the determinants of WC.”(*Krishna;1996:46*) Which are given in table 2.2.

Table : 2.2

A to Z factors on Working Capital

a.	Nature of business
b	Manufacturing policies.
c	Production process and change in technology.
d	Terms of buying and conditions of sales
e	Capital expenditure and investment decision
f	Transportation bottleneck
g	Lead time requirement
h	Length of operating cycle
i	Raw material requirements
j	Inventory of machinery spares
k	Semi-finished goods inventory
l	Finished goods stock
m	Supplier's credit
n	Credit for Sales
o	Total current assets
p	Total current liabilities
q	Market condition of supply and demands
r	Growth of the business
s	Business cycle fluctuation
t	Seasonal demand
u	Product life cycle
v	Non bank short term borrowing
w	Short term bank borrowing
x	Share capital
y	Reserve, internal accrual and taxes on profit
z	Long term loan.

2.3 Working Capital Policy

WC policy considers the financing side of the CA. The basic question is how much of short term and long term fund should we use to finance CA. At that situation first we have to know about CAs and CLs which are the basic components of WC. While differentiating CA from non CA or CL from non CL, generally a period of one year is used as a line of demarcation, which is

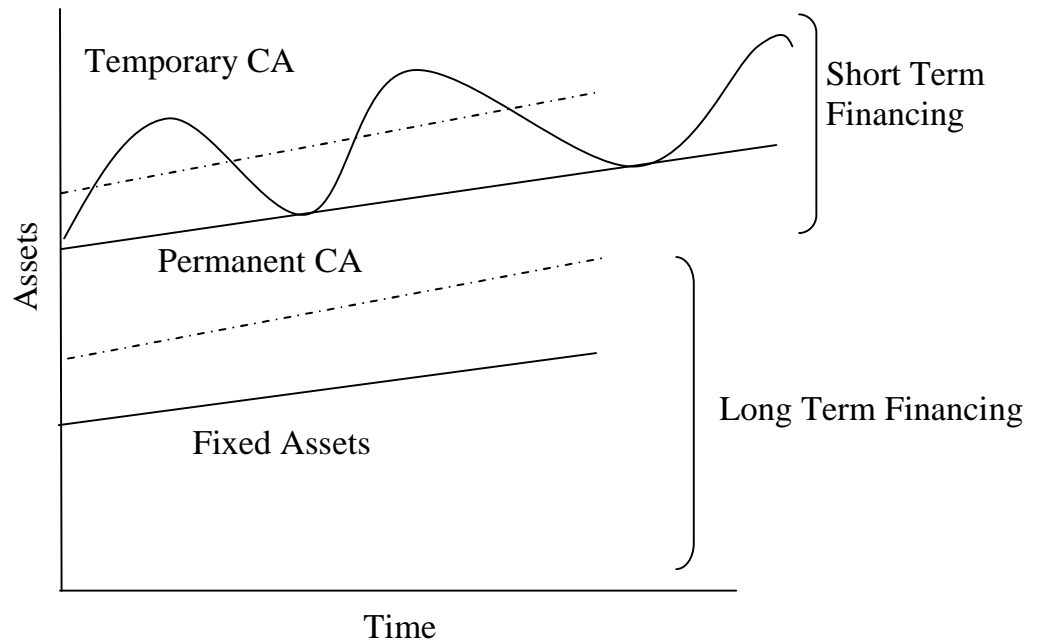
some what arbitrary. It suggests that the investment in any assets or liability with a life of less than a year fall into the realm of WC management.

“In an enterprise the level and quality of CAs and CLs is guided by the WC policy and management adopted by it. WC involves all aspects of the administration of CAs and CLs”.(Weston and Brigham;1984:284) There are different types of fund sources and here we are considered with which of them should be used at what level. “Using long term financing for short term assets is expensive as funds will not be utilized for the full period. Similarly financing long term assets with short term financing is costly as well as in convenient as arrangement for the new short term financing will have to be mode on a continuing basis”.(Pandey;1999:828)

“WC policy involves two basic questions (1) what is the appropriate amount of CA for the firm to carry, both in total and for each specific account, and (2) how should CA be financed ? Sound WC policy is designed to minimize the time between cash expenditures on materials and the collection of cash on sales”. (Brigham, Gapanski and Ehrhart; 792-795) “The firm policy for managing in WC should designed to achieve three goals such as, adequate liquidity, minimization of risk and contribution to maximizing firm's value”.(Hampton; 180) Basically there are three approaches to financing alternative of WC.

- a. **Aggressive Approach** : The more risky approach to follow aggressive approach. “Here the firm attempts to employ more of the short term funds. Shorter the maturity schedule of a firm's debt obligation, the greater the risk that it will be unable to meet principal and interest payment and hence it is more risk approach. Cost of short term funds is cheaper than cost of long term funds so the return or profitability would increase but at the same time risk would also increase because of the greater amount of short term funds.” (Pradhan;2004 :353)

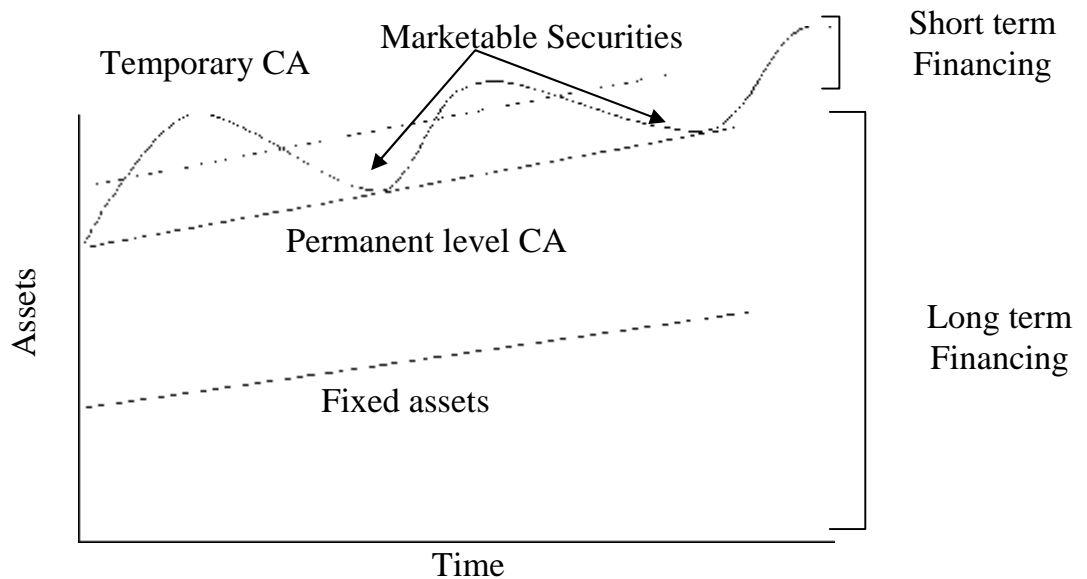
Figure :2.2
Aggressive Financing



(Source: Pandey; 1999:830)

- b. Conservative Approach :** The less risky approach refers to financing all the assets by long term funds. “Here the short term requirement are financed with long term fund, which would necessitate the payment of interest for the use of funds when they are not needed”. (Pradhan;2004:254) Under this policy the firm finance its permanent assets and also a part of temporary CA 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 CA, the long term funds released can be invested in marketable securities to build up the liquidity position of the firm.”(Pandey;1999:829)

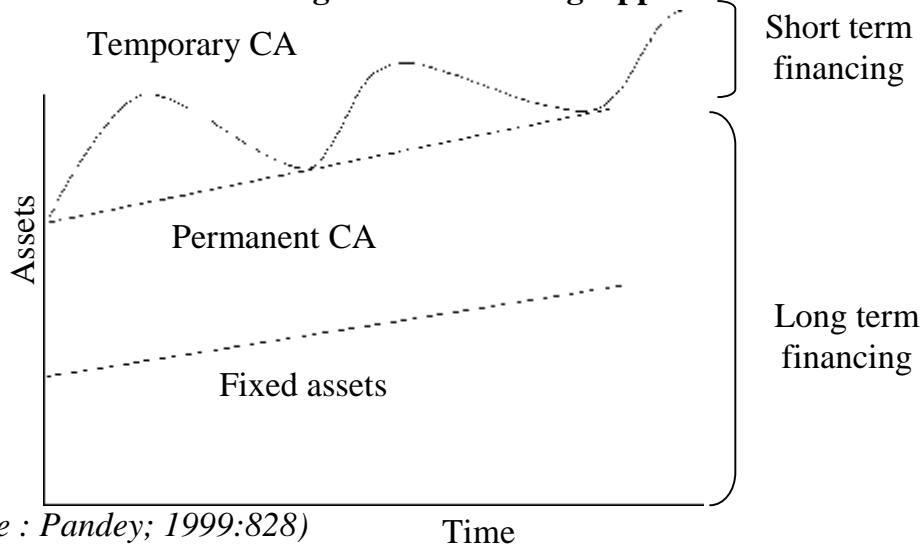
**Figure : 2.3
Conservative Financing**



(Source : Pradhan; 2004:354)

- c. **Hedging (Matching) Approach :** “It is a moderate approach towards financing which attempts to achieve a trade off between risk and return. The heading approach to financing suggests that each assets would be offset with a financing instrument of the same approximate maturity.”(Pradhan;2004:353) i.e. when the firm follow this approach, long term financing will be used to finance fixed assets and permanent CA and short term financing to finance temporary or variable CA. “Under this policy no short term financing will be used of the firm has a fixed CA need only.”(Pandey;1999:828)

**Figure :2.4
Financing Under Matching Approach**



(Source : Pandey; 1999:828)

There is conflict between long term and short term financing. Short term financing is less expensive than long term financing but at the same time short term financing involves greater risk than long term financing. The choice between long term and short term financing involves a trade of between risk and return. “The firm should keep in mind these two dimension-relative assets liquidity (level of CA) and relative financing liquidity (level of short term financing) of the WC management. A firm will be following a very conservative WC policy if it combines a high level of CA with high level of long term financing (or low level of short term financing) such a policy will not be risky at all but would be less profitable. An aggressive firm on the other hand, would combine low level of CA with low level of long term financing (or high level of short term financing) This firm will have high profitability and high risk. In fact, the firm may follow a conservative financing policy to counter its relatively liquid assets structure in practice. The conclusion of all this is that the consideration of assets and financing mixes are crucial to the WC management.” (*Pandey;1999:832*)

In other words, the WC management focuses on the coordinated control of the firm's CAs and CLs. A firm finance its CAs and CLs conservatively or aggressively. An aggressive assets management policy leads to,

- * lower level of CAs.
- * A shorter cash conversion cycle
- * Lower expenses and higher revenue leading to higher EBIT.
- * Higher turnover and effectively and aggressively managed, and
- * Higher risk and higher return.

Conservative assets management practices have just the opposite effects.

Other things being equal, the lower the CL, the more conservative the firm's liability management policies, and the higher the level of CLs, the more aggressive the policy. An aggressive liabilities management policy result,

- * Higher levels of CLs.
- * Shorter cash conversion cycle,

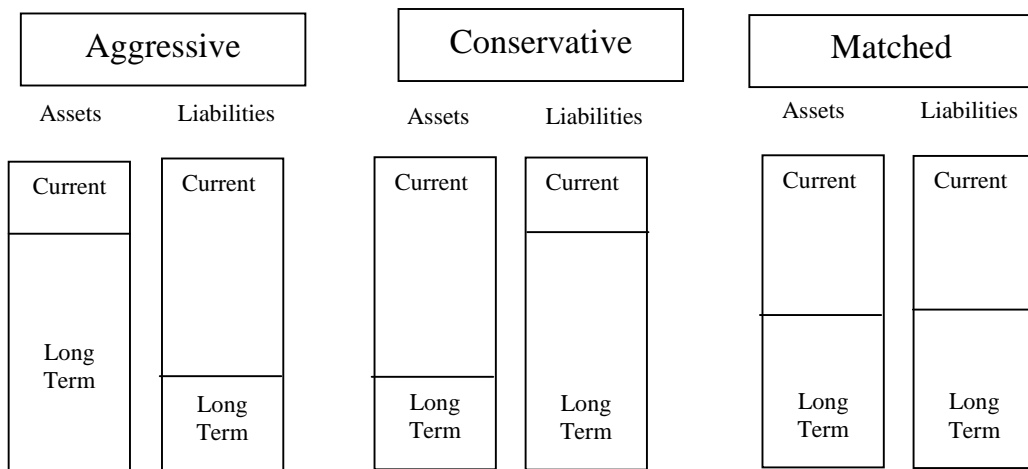
- * lower interest cost (if short term rates are lower than long term rates) and
- * Higher risk and higher required return.

Conservative policies have just the opposite effects.

As aggressive assets policy calls for a low level of CAs and a conservative policy calls for a higher level, likewise, an aggressive liability policy calls for a high level of CL and a conservative policy calls for a low level. “To match them G.E. Pinches prescribed the following rules.” (*Pinches;1990:481-500*)

- * If a firm has an aggressive CA position, it should counterbalance its risks by employing a conservative liability position.
- * If a firm has a conservative CA position, it should counterbalances its risks by employing an aggressive liability position.
- * If a firm has moderate CA position, it should counterbalance its risks by employing moderate liability position.

Putting it all together



(Source : *Pinches; 1990:497*)

2.4 Review of Journals and Articles

Besides reviewing of books for conceptual thoughts some previous studies about WC management are also reviewed in this section. Many published

research studies, conducted by different management experts, are available in field of WC management.

An organization needs to determine the size of WC as accurately as possible. A firm, therefore, should pay proper attention to determinants of WC, which are differ from organization to organization. “In Nepalese corporation, WC management assume more significance as investment in WC is high. However, average investment in WC declined over a period of time, with respect to investment in money assets, non manufacturing corporations invested more in money assets as compared to manufacturing corporation. The significance of cash, receivable and inventory are due to the fact that investment in those components of WC has increased over time in Nepalese corporation. A sufficient attention should, therefore, be diverted to those variables management”. (*Pradhan & Koirala;1982 :32*)

Pradhan and Koirala, (1982) have jointly conducted a study on “*Working Capital Management in Nepalese Corporation*”. Where they have focus on evaluating the WC position of selected manufacturing and non manufacturing corporations of Nepal. The specific objectives of that study were as following.

- * To assess the size of investment in each type of CAs.
- * To study the change in the size of investment in each type of CAs over a period of time.
- * To point out the need to control investment in the size of cash, receivable and inventory.

This study stated that the majority of Nepalese corporation was facing the problem of formulation and implementing the suitable policy as to CAs management. It was not known to many of them, whether there was a need to control investment in receivable and/or inventory. In other words, it was not known whether Nepalese corporations have to follow a kind of liberal or conservative type of WC policy with respect to cash, receivable and inventory. It is clear that huge investment has been made in the form of WC by Nepalese corporations. They concluded that the relationship between sales and WC is close and direct. Increase in sales would lead to increase in WC. So, they said

that there was need to control investment in WC, if the proportion of WC to sales increase at a faster rate. They also found that WC management was more difficult to manage than fixed capital. For manufacturing corporation, CA management is important because, it takes more time, where as its importance to non-manufacturing corporation is due to the fact that requires larger investment. Inventory management is of great significant of manufacturing corporation and the management of cash and receivable are of great significance to non manufacturing corporation. The major factors affecting the larger investment in receivable was found to be the liberal credit policy followed by Nepalese corporation. Similarly, the major reason for holding inventories in Nepalese corporation was to facilitate smooth operation of production and sales but not to take advantage of price increased.

Shrestha, (1982) has studied on "*Working Capital Management of Ten selected public enterprises*" focused on the liquidity, turnover and profitability position of those selected PEs. The study found that majority of PEs were unable to maintain adequate liquidity position. The turnover and profitability aspect of the PEs were also unsatisfactory. In his study he has brought certain issues and problems faced by PEs such as, lack of appropriate financing planning, negligence of WC management and deviation between liquidity and turnover to assets. At last, he had made some suggestive measures to overcome from the above issues i.e. identification of required funds, regular check of accounts, positive attitude towards risk and return, development of management information system and determination of right combination of source of funds (i.e. short term and long term funds) to finance and choice appropriate WC policy

Pradhan, (1986) Conducted a research study on "*Working Capital in public manufacturing enterprise at 1984*". Study has been based on sample of nine manufacturing PEs. The manufacturing PEs selected for the study differ in their nature of work. The study cover ten years period from FY 1973 to 1982.

The major objectives of his study was to examine the behavior and management of WC in Nepalese manufacturing PEs. and the specific objectives undertaken in his study are, to conduct risk return analysis of WC position., to assess the financial liquidity position of the enterprise, to determine the structure and

utilization of WC and to estimate transaction demand function of WC and its various companies.

This study used a variety of financial ratios to accomplish the objectives. The major finding of the study are described in the following paragraph.

Most of the selected enterprise had been achieving a trade off between risk and return, there by following neither an aggressive nor a conservative approach of WC. The study of risk return trade off over a period of time indicates that most of the enterprises have been moving slowly towards the conservative approach while some of them towards an aggressive approach of WC. He found that almost all the selected enterprises had positive net WC. The negative net WC has been observed in few cases. The enterprises have an average, half of their total assets in the form of CAs. The study showed that share of cash as well as receivable have declines slowly and steadily, whereas the share of inventories has increased in the majority of the selected enterprises, He concluded that Nepalese public manufacturing enterprises should pay more attention to management of inventories. The regression result also show that the level of WC and its components of an enterprises desired to hold depend not only on sales but on holding cost also. The study showed that WC management is the weakest and neglected part of financial management in almost all of the manufacturing PEs in Nepal.

Pradhan, (2002) has studied on “*The Demand for Working Capital by Nepalese Corporation*”. He has selected nine manufacturing public corporation with 12 years dates for 1973 to 1984. Those nine corporation has represented about 80 percent of Nepalese manufacturing public corporations established before 1973 Regression analysis has been used or adopted as the tools of analysis. The earlier studies concerning the demand for cash and inventories by business firms did not report unanimous finding. A lot of controversies exist with respect to the presences of economies of scale, role of capital cost, and capacity utilization rates and the speed with which actual cash and inventory are adjusted to desired cash and inventories respectively. That study paper had investigated these various issues in the context of manufacturing public

corporation of Nepal. The pooled regression results showed the presence of economies of scale with respect to the demand of WC and its various components. The regression results suggested strongly that the demand for WC and its components is a function of both sales and their capital costs.

2.5 Review of Thesis

Shrestha, (1978) conducted a research study on “*Financial Management of Public Enterprise in Nepal at 1978.*” Main objectives of the study was to analyzed various aspects of working capital. She concluded that WC was not properly managed. Most of the public enterprises are suffering from high liquidity ratio because of undesirable inventory, accumulation amount of debt and high cost balance. Similarly, she found that the management did not see seriously about inventory and receivable management. Capital utilization of enterprise was very poor. In short WC management had not taken as major part of financial management in Nepal PEs.

Giri, (2003) has studied on “*Working Capital Management in Birgunj Sugar Factory Ltd. Nepal.*” The main objectives of the study was to analysis working capital of Birgunj Sugar Factory Ltd. He had taken the data out of the financial statement Viz. Profit and loss account and balance sheet for 10 years. In his research study he applied ratio analysis as the major tools for analyzing the available secondary data. On the study, he found that BSFL, has followed neither conservative nor aggressive WC management policy.

In BSFL inventories hold the major portion of CAs. The turnover position of the company was very poor. Return on CAs, total assets and net worth were not satisfactory. Profitability of the factory was also not satisfactory. The research pointed out some constraints of BSFL, these are management inability, lack of definite government policy, interference of the government, absence of forecast of plan and lack of skill manpower etc. The management of WC is not satisfactory and it was also found that there was lack of knowledge about WC and its importance for manufacturing company, due to ineffective human resource management system or man power selection system of the company. The company did not apply the rule that 'right man at right place.'

Sharma, (2004) has conducted a research on “*Working Capital Management of Nepal Battery Company Ltd, Nepal*”. The Main objectives of the study was to analyzed various aspects of working capital management of Nepal Battery Company Ltd. In this study, basically he analyzed financial statement for five year. He found in course of study that NBCL was able to maintain profitability but its WC management was very poor. He stated that the company's inventory management and receivable management were poor managed. The excess inventory and idle investment in receivable blocked its capital in them. This was also the reason for poor turnover, which reduce the profit of the company. Similarly, higher operation expenses also caused the company to lessen its profit. He recommended that the company should be attentive to formulate efficient inventory management policy, production policy, credit policy, receivable policy and better utilization of other assets

Gurung, (2001) has conducted a research on “*Working Capital Position of Gandaki Noodles Pvt. Ltd*”. She et the main objectives of her study to examine the WC position and studied the relationship between sales and different variables of company. In this study she analyzed 5 years financial statement of the WC to achieve the objective. In that study she found that the proportion of cash and bank, sundry debtors, inventory and other CAs to current assets on an average 4.76% 10.34% 54.31% and 31.77% respectively which shows that inventory holds the largest portion. Study clearly shows that the investment in CAs was high with respect to its total assets and net fixed assets. Fluctuations in the position of receivable was affected by the fluctuating sales volume of the company. From that study it was also found that the in total financing more amount was financed from long term source of fund i.e. general reserve and less amount was financed from short term source of fund i.e. from bank borrowing. In short the company was followed conservative WC policy.

At last, the study concluded that there was positive correlation between inventory and CAs and receivable and CAs. WC was the life blood of sales. The WC should arranged in such a way that it should generate more turnover.

Gurung, (2002) has done the research on the title of “*A Study on WC management of Nepal lever limited*”. Main objectives of that study is to analyze the WC management of NLL. The specific objectives of that study are to analyze the liquidity composition of WC, assets utilization and profitability of WC, to analyze financing pattern and to examine the relation between liquidity and profitability of NLL.

The study covered 5 years period and analyze secondary data by using financial and statistical models. He has found that major components of CAs are inventories, receivables, and prepaid expenses. Among them inventories holds major portion of CAs. He has mentioned that all the components of CAs were fluctuating during study period. It indicated that company didn't have any clear vision about the investment of WC. CA investment policy of NLL has been sifting towards the moderate policy. The current ratio of the company was satisfactory. The CR contains more inventory and receivables and there was insignificance relationship in between CA and CLs. This mgmt had not proper policy of maintain the liquidity position and its liquidity position was not sound.

Aryal, (2003) study on “*Working Capital Management of pharmaceutical industry of Nepal with special reference Royal Drugs Ltd*”. The main objectives of that study was to find out WC management system and its effect on profitability of the company by using nine years data. The major finding of the study are described in the next paragraph.

WC is more difficult to manage than that of fixed capital. 65% of respondents of RDL said that WC 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 WC. So far as the importance of CAs management, 82% of respondents of RDL opine 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.

Now, Nepal has followed the policy of liberalization, privatization and globalization. Nepal has got the member of WTO, so, it is necessary for Nepalese Manufacturing companies to compete with global market and it is challenging work. Now many more manufacturing companies have been established in Nepal and it is very critical period for the survival of those manufacturing companies because of the political situation of the nation. Many more studies about Nepalese manufacturing companies were done in last decades. But WC aspect of the manufacturing industrial sectors were neglected. I think that it is necessary to bring out a fresh study of manufacturing companies with respect to WC management which plays vital role for success and failure of firm. This study is based on different variable and tools using latest data and focuses only on WC management aspect of selected manufacturing companies.

Chapter III

Research Methodology

To complete any task successfully, there should have proper and systematic procedure to be followed. Research methodology is the procedures by which researcher go about their work of describing, explaining and predicating phenomena are called methodology. In other words research methodology describes the methods and process applied in the entire aspect of the study.

3.1 Research Design

“An architect prepares a blueprint before he/she approves a construction. An army prepare 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;2001:12) A research design is the specification of methods and procedure for acquiring the information needed. It is the overall operational pattern or framework 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 that it will be collected by objective and economical procedures.

Research design is highlighted for ascertaining the basic objectives 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 objectives of this study is to evaluate the WC management of various manufacturing companies, 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 (used). Descriptive research design is essentially a fact finding approach relative largely to the present and abstracting generalization by the cross sectional study of the current situation. It is utilized for conceptualization, problem identification, conclusion and suggestion for the research. Analytical approach (design) is followed to the

parametric and non parametric test of the data. It is the process of micro analysis and appraisal to the data.

3.2 Nature and Source of Data

To achieve objective of the study, the secondary data has been used. The main secondary source of data are audited final report (P/L a/c and balance sheet) of selected companies. All these secondary data and information are properly arrange and synthesized, tabulated and collected in accordance with the requirement of the study.

The secondary data and information have been collected from the various publication and the data available in the record of selected manufacturing companies. The major source of secondary data are as follows:

- * Various documents (i.e. accounting or financial reports) of selected companies.
- * Various survey conducted by selected companies and other related parties.
- * Different bulletin and annual reports of related companies.
- * Related act and regulations published by Govt. and related companies.
- * Statistical year book of Nepal (CBS), various institution's annual reports, related government and non government publications about WC management, books, journal Articles various research studied, website of related companies and SEBON etc. have been used.

The major source of secondary data are website and annual report of SEBON and annual report of selected manufacturing companies.

3.3 Population and Sampling

“All items in any field of inquiry (research) constitute a universe or population.” (Kothari;68) Sampling is the process by which inference is made to the whole by examining only part. “The method of selecting a portion of the population with a view to draw conclusions about the universe under study is known as sampling”.(Joshi; 2001:70)

In this study, population are basically those manufacturing companies, which all have listed in Nepal stock exchange Ltd., Nepal. There are about 21 manufacturing and processing companies listed in SEBON. Out of them only nine manufacturing companies have been chosen for this study. All Companies have not included in this study because of unavailability of data of some companies for the relevant study period and also considering time element.

Sample should be taken from desire population and the sample of listed manufacturing companies are given in following table.

Table: 3.1
Selected Listed Manufacturing Companies

S.N.	Name of the Companies	Listing date
1	Bottlers Nepal Ltd. (BN)	05/11/1986
2	Nepal Lube Oil Ltd (NLO)	14/12/1986
3	Nepal Banaspati Ghee Udyog Ltd (NBG)	05/06/1988
4	Sri Raghupati Jute Mills Ltd (RJM)	17/06/1988
5	Jyoti Spinning Mills Ltd (JSM)	27/09/1991
6	Arun Vanaspati Udyog Ltd. (AVU)	16/12/1991
7	Unilever Nepal Ltd. (ULNL)	22/09/1994
8	Shree Bhrikuti Pulp and Paper Nepal Ltd. (BPP)	01/06/1997
9	Sri Ram Sugar Mills Ltd. (RSM)	18/04/1999

All these sample have been taken and data are collected for six years (from FY 2003 to 2008) to analyze the effectiveness of WC management of Nepalese manufacturing companies, which should be listed in SEBON.

3.4 Methods (tools) 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. Here, the collected data has been classified, tabulated and analyzed through the quantitative method and qualitative method and the collected data and study result are presented and analyzed by using diagram and chart where necessary.

Quantitative methods and qualitative method are applied for analyzing the WC management in Nepalese manufacturing companies.

- a. Quantitative method
 - * Financial Tools
 - * Statistical Tools
- b. Qualitative Method

3.4.1 Quantitative Method

The researcher has used two importance tools for measuring the effectiveness of WC management of Nepalese manufacturing companies. To obtain the relationship in between various variables the financial tools (i.e. Ratio analysis) and statistical tools (i.e. Karl's Pearson's correlation coefficient (r) and regression analysis) are used.

3.4.1.1 Financial Tools

The first important tools is the financial tools. Various financial tools are used to analyze the effectiveness of WC management of manufacturing companies. Ratio analysis, cash conversion cycle and Du-Pont analysis have been used as financial tools.

Ratio Analysis

Ratio analysis is a powerful tools for financial analysis. “A ratio is defined as the relationship between two or more variables or mathematical expression. In financial analysis, a ratio is used as benchmark for evaluating the financial position and performance of a firm”. (Pandey;1999) It is useful to make financial expression more meaningful and to draw appropriate conclusion from them. Financial analysis is the process of identifying the financial strengths and weakness of the firm by properly establishing relationship between the items of the balance sheet and the profit and loss account. Financial ratio analysis can be undertaken by management of the firm or by parties outside the firm, Viz. owners, creditors investors, and others. The nature of the ratio analysis is differ depending on the purpose of the analyst. So, the examine the WC management or WC policy of manufacturing companies, ratio concerted with WC has been extensively used in this study.

The WC has been studied by analyzing the following ratios.

i. Ratio of Cash to Current assets (CCA) : The ratio studies what percentage of CAs is in the form of Cash. It is defined as,

$$CCA = \frac{\text{Cash and bank balance}}{\text{Current Assets}} \times 100$$

The higher the ratio, the more liquid the current assets group. A large ratio may be taken as a sign of poor cash management.

ii. Ratio of Receivable to Current assets (RCA) : This ratio shows what percentage of CAs is in the form of receivable. It is stated as,

$$RCA = \frac{\text{Re ceivable}}{\text{Current assets}} \times 100$$

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

iii. Ratio of Inventory to current assets (ICA) : This ratio shows that what percentage of CA is in the form of inventories. It is defined as,

$$\text{ICA} = \frac{\text{Inventories}}{\text{Current assets}} \times 100$$

The increase in the ratio is an indication of liberal inventory policy followed by the companies.

iv. *Ratio of current assets to total assets (CATA)* : This ratio indicates what percentage of the companies total assets are current. It is specified as.

$$\text{CATA} = \frac{\text{Current assets}}{\text{Total assets}} \times 100$$

As this ratio increase, both the firm's profitability and risk world decrease.

v. *Current Assets Turnover Ratio (CATR)* : The ratio indicters the number of times the average current assets are turned over during the year. It shows the efficiency of utilizing CAs. The ratio shows the requirement of WC for one rupee of sales.

$$\text{CATR} = \frac{\text{Sales of the year}}{\text{Current assets}}$$

An increase in the ratio shows improvement in CAs utilization.

vi. *Net working capital turnover ratio (NWTR)* : The ratio indicate the number of times the average net WC is turned over during the year.

$$\text{NWTR} = \frac{\text{Sales of the year}}{\text{Net working capital}}$$

vii. *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. For many type of business 2:1 is considered to be an adequate and better ratio.

viii. Profit (loss) Margin ratio (NPM): It establishes a relationship between net profit and sales.

$$\text{NPM} = \frac{\text{NPAT}}{\text{Sales of the year}}$$

A higher ratio is an indication of the higher overall efficiency of the business firm and better utilization of total resources, and vice versa.

ix. Return on total assets (ROA) : It measure the return on investment on total assets. A more general ratio used in the analysis of profitability is the ROA ratio.

$$\text{ROA} = \frac{\text{NPAT}}{\text{Total assets}}$$

x. Return on working Capital (ROW) : In measure the return on investment on total working capital.

$$\text{ROW} = \frac{\text{NPAT}}{\text{Working Capital}}$$

xi. Total assets Turnover ratio (TATR)

The ratio indicate the number of times average total assets is turned over during the year.

$$\text{TATR} = \frac{\text{Sales of the year}}{\text{Total assets}}$$

Cash Conversion Cycle (CCC)

Cash conversion cycle refers to the length of time required to convert raw materials into finished goods and than to sell these goods. It is the length of time from the payment for the purchase of raw materials to the collection of accounts receivable generated by the sale of the final product. In another world it measure the length of time the firm has funds tied up in working capital.

The different between the operating cycle and the payable deferral period is the cash conversion cycle, where operation cycle measures the total number of days from purchase to when cash is received.

Cash Conversion cycle = Operation Cycle - Payable deferral period

or in simply

$$CCC = \boxed{\begin{array}{c} \text{Inventory} \\ \text{Conversion Period} \\ \text{(ICP)} \end{array}} + \boxed{\begin{array}{c} \text{Receivable} \\ \text{Conversion Period} \\ \text{(RCP)} \end{array}} - \boxed{\begin{array}{c} \text{Payable deferral} \\ \text{Period} \\ \text{(PCP)} \end{array}}$$

Cash cycle shows how much of time does cash generally collected by the firm. The Cycle Consists of the following periods.

* **Inventory Conversion Period (ICP)**

It is length of time required to convert raw materials into finished goods and than to sell these goods.

$$ICP = \frac{\text{No. of days in a year}}{\text{Inventory turnover}}$$

$$\text{Where, Inventory turnover} = \frac{\text{Sales of the year}}{\text{Inventory}}$$

* **Receivable Conversion Period (RCP)**

It is the length of time required to convert the firm's receivable into cash, that is, to collect cash following a sales. It is also called the days sales outstanding (DSO)

$$RCP = \frac{\text{Receivable}}{\text{Sales per day}}$$

* **Payable Conversion Period (PCP)**

It is the length of time between the purchase of raw materials and labor and the payment of cash for them. It also called payable conversion period (PCP)

$$PCP = \frac{\text{Payables}}{\text{Cost of goods sold} / 360} = \frac{\text{A / C payable}}{\text{Credit purchase} / 360}$$

The firm's goal should be to shorten its CCC as much as possible without hurting operations. By reducing ICP and RCP and lengthening the PCP, CCC

can be shortened. This would improve profit, because the shorter the CCC the smaller the need for external financing and thus the lower the cost of such financing.

Du-Pont System of Financial Analysis

The Du-Pont system of financial statement analysis is developed by the financial experts of the Du-Pont company by putting together the effects of profitability, investment and the equity ratios. According to Du-Pont system change in any variable either in assets or in total cost items have a direct impact on return on equity. This tool is used to showing the relationship between return on equity (ROE), Assets turnover and profit margin.

Du-Pont equation defines, ROE as a product of return on assets (ROI) and equity multiplier and ROI as a product of Profit margin and total assets turnover.

Return on equity (ROE) = Return on Assets x Equity Multiplier

$$= \frac{\text{Net income}}{\text{Total assets}} \times \frac{\text{Total assets}}{\text{Equity}}$$

Return on assets (ROI) = Profit margin x Total assets turnover

$$\frac{\text{Net income}}{\text{Total assets}} = \frac{\text{Net income}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Total assets}}$$

3.4.1.2 Statistical Tools

Statistical methods are the mathematical techniques used to facilitate the analysis and interpretation of numerical data secured from groups of individuals or groups of observation from a single individual. Statistical methods study only a group of individuals but not a single unit. An introduction of the statistical tools which have been used in this study are given below.

Karl Pearson's Correlation Coefficient Method

Karl's Pearson's method is most widely used method of measuring the relationship between two variables. The relation between two variables say 'x' and

'y' for a given set of 'n' observation as defined by Pearson's correlation coefficient is measured by 'r'

$$r = \frac{\text{Cov}(x, y)}{\sigma_x \sigma_y}$$

Where, $\text{Cov}(x, y)$ = Covariance between variable x and y is given by

$$\frac{\sum(X - \bar{X})(Y - \bar{Y})}{n}$$

$$\text{or } r(x, y) = \frac{\sum xy}{n \sigma_x \sigma_y}$$

$$\text{Where } x = (X - \bar{X})$$

$$y = (Y - \bar{Y})$$

σ_x = Standard deviation of x series and equal to

$$\sqrt{\frac{\sum x^2}{n}} = \sqrt{\frac{\sum(X - \bar{X})^2}{n}}$$

σ_y = Standard deviation of y series is given by.

$$\sqrt{\frac{\sum y^2}{n}} = \sqrt{\frac{\sum(Y - \bar{Y})^2}{n}}$$

\bar{X} = mean of variable x

\bar{Y} = mean of variable y

n = number of pairs of x and y observation.

Here the value of coefficient can not be more than +1 and less than -1 i.e. its value lies between the range of +1 and -1. If the value of coefficient is near +1 there is positive correlation and if the value is near -1 there is negative correlation between two variables. But if the value is zero there is no correlation exists between variables.

The degree of reliability of computed correlation can be judged with the help of its probable error,

$$\text{Probable Error (P.E.)} = 0.6745 \times \frac{1-r^2}{\sqrt{n}}$$

Where

r = correlation coefficient.

n = Number of pairs of observation

$\frac{1-r^2}{\sqrt{n}}$ Standard error of correlation coefficient (S.E).

P.E. = 0.6745 x S.E.

If $r < P.E.$ then the correlation coefficient is insignificant.

If $r > 6P.E.$ that correlation coefficient is significant

Where $6P.E.$ = 6 times of probable error.

The upper and lower limits within which the correlation coefficient of the population is expected to lie are $(r+P.E.)$ and $(r-P.E.)$ respectively.

3.4.2 Qualitative Method

Quantitative method does not pick up all hidden information so, qualitative method is also used in this study. Thus whenever quantitative method is insufficient, opinions survey method is used to make study more qualitative. Personal interview is taken with the key person of selected companies. A list of questions has to be asked to the selected persons of the sample manufacturing companies. On the basis of their replies analysis can be made.

3.5 Definition of Key Terms

The annual reports published by various manufacturing companies has its own format for publishing the financial data. It is, therefore, better to define some key terms so as to avoid misunderstanding.

Sales : Sales means trading sales only and it does not include miscellaneous sales.

Fixed assets : The fixed assets of the selected manufacturing companies consists of ordinary fixed assets like land and building, plant and machinery, furniture and fixtures, vehicles and office equipment etc. In addition to these assets investment and under construction works have also been included under fixed assets

Investment : Investment includes shares of other companies and development bonds

Total Assets : It is the total of assets side of B/S i.e. sum of CA and fixed assets.

Current Assets : Current assets in the companies compares usual items like cash in hand and at bank, accounts receivable, and inventories. But in addition, balance sheet of some of the companies shows other miscellaneous current assets In this study, CAs include the sum total of cash, receivable, inventories and miscellaneous CAs. In short CAs includes those assets which can be converted into cash within a year.

Current liabilities : These liabilities include account payable short term bank loans and reserve and provision created for specific purpose. But general reserve and reserve for future contingencies are not included in CLs though they are sometimes shown under the heading of CLs by some of the companies in other word all the payment that has to be made by the company within an accounting period include in CLs.

Equity : Equity consists of the amount of equity capital, reserves and surpluses /deficiencies.

Long term funds : These include equity plus long-term loans from financial institutions.

Receivables : It includes trade and other debtors.

Cash and bank balance : It include the cash in hand and cash at bank.

Inventories : It includes stock of raw materials, semi-finished goods and finished goods as well as other operating goods and spares.

Payable: It include the amount of sundry creditors, which the companies have to pay with in a year.

Chapter IV

Presentation and Analysis of Data

4.1 Introduction

The data, after collection, has to be processed and analyzed in accordance with the outline laid down for the purpose of the time of developing the research plan. So, this chapter is concerned with presentation, analysis and interpretation of collected data. WC management is exciting and challenging study with special reference to manufacturing companies. The WC management of manufacturing companies regarding their growth and objectives have been already discussed in first chapter and available literature on WC management is reviewed in chapter second. The research methodology considering the methods of research applied in this study has been given details in third chapter. Chapter four is the main body of this study which consists of presentation and analysis of empirical data.

In order to analyze (Study) the WC management practice of manufacturing companies, the necessary information and data are collected through audited financial statement, annual reports and direct contact process. The major variables of this study are CAs, CLs, Net profit, sales, total assets, total cost, (i.e. production and administrative cost) etc. which are very sensitive and pertinent for the study. Only collecting and presenting the variables (data) are not sufficient for the study purpose. So, for this, various financial and statistical tools are to be applied to examine the WC management of Nepalese manufacturing companies. For the purpose of the study, the researcher goes through systematic process i.e. first the researcher has to dealt about the WC policy of manufacturing companies with the help of analyzing the position of variables of WC, then financial ratios, cash conversion cycle and Du-Pont analysis. Besides this, study has to apply statistical tools (i.e. correlation coefficient and linear regression analysis) to establish and forecast the relationship of various variables of WC.

4.2 Working Capital Policy

In this section an attempt has been made to analyze (examine) the WC policy (i.e. aggressive, conservative and moderate) followed by selected Nepalese manufacturing companies, with the help of position of CAs, CLs. Cash convention cycle, expenses and revenue (EBIT) position, risk and return situation and turnover position. For this, the researcher is going to analyze based on various variable of WC and ratio of sample companies taking six years data. The researcher makes analysis of this section by dividing two aspect i.e. individual (single) company wise analysis for different period and different company wise analysis in the same period and different period. The analysis process are organized and described systematic manner as follows.

4.2.1 Analysis based on Variables of Working Capital

First the variables of WC have been examined to analyze the WC policy which is followed by the manufacturing companies. For this the variables of WC have to be examined and described separately. Lack of the calculated (Standard) industrial average and other economic indicators with respect to WC management, here, company wise average, yearly average, and overall average are taken as standard for analyzing process.

4.2.1.1 Level of Current Assets and Current Liabilities

A company or firm finance its CAs and CLs Conservatively or aggressively. An aggressive management policy leads to lower level of CAs and higher level of CLs and the conservative policy has just the opposite effects. In this section of the study, the researcher has tried to analyze the level or position of CAs and CLs and with the help of this to find out the WC policy which the company has followed. This section (Part) has also been broken down into single company wise analysis for each period and different company wise analysis in the same and different period. The position of CAs and CLs of selected manufacturing companies are given in following table.

Table :4.1**(i) Level of Total Current Assets***(Rs in Million)*

Year Company	2003	2004	2005	2006	2007	2008	Total	Average
BN	353.65	369.41	393.84	506.43	544.18	447.83	2615.34	435.89
NLO	86.52	104.79	97.37	93.49	-	115.11	497.28	82.88
NBG	115.87	162.40	211.77	193.54	154.20	83.63	921.41	153.57
RJM	42.57	60.26	59.97	80.51	76.41	80.13	399.85	66.64
JSM	255.85	284.61	285.61	240.08	264.23	278.56	1608.94	268.16
AVU	184.92	186.28	231.03	248.63	243.54	434.64	1529.04	254.84
ULNL	352.72	451.88	567.58	399.14	589.88	724.24	3085.44	514.24
BPP	216.83	210.16	217.12	248.31	2867.70	-	3760.12	626.69
RSM	104.58	259.14	174.45	195.44	-	197.33	930.94	155.16
Total	1713.51	2088.93	2238.74	2205.57	4740.14	2361.47	15348.36	2558.06
Average	190.39	232.10	248.75	245.06	526.68	262.39		284.23

*Source: Annex 1***ii. Level of Total Current Liabilities.***(Rs. In Millions)*

Year Company	2003	2004	2005	2006	2007	2008	Total	Average
BN	198.46	177.53	268.08	319.14	309.55	174.02	1446.78	241.13
NLO	41.30	46.46	38.01	43.74	-	76.09	245.6	40.93
NBG	164.44	255.09	348.54	346.43	354.74	332.14	1801.38	300.23
RJM	11.97	33.59	38.05	58.04	44.74	59.08	245.47	40.91
JSM	443.70	483.14	490.68	545.34	487.89	237.91	2688.66	448.11
AVU	274.70	335.71	276.26	306.66	306.48	505.11	2004.92	334.15
ULNL	267.72	263.93	354.32	147.31	349.02	543.71	1926.01	321.00
BPP	521.99	622.09	417.64	121.57	533.89	-	2217.18	369.53
RSM	221.60	376.01	280.55	293.83	-	393.42	1565.41	260.90
Total	2145.88	2593.55	2512.13	2182.06	2386.31	2321.48	14141.41	2356.90
Average	238.43	288.17	279.13	242.45	265.15	257.94		261.88

Source: Annex 2

i. Single Company in Different Period

Table 4.1(i) shows that there is wide variation of the CAs level within individual companies. The table shows that CAs varies from Rs. 353.65m to Rs. 544.18m for BN, Rs. 86.52m to Rs. 115.11m for NLO, Rs. 83.63m to Rs. 211.77m for NBG, Rs 42.57m to Rs. 80.51m for RJM, Rs. 240.08m to Rs. 285.61m. for JSM, Rs. 184.92m to Rs. 434.64m for AVU, Rs. 352.72m to Rs. 724.24m for ULNL, Rs. 210.16m to Rs. 2867.70m for BPP and Rs. 104.58m to Rs. 259.14m for RSM. It shows that manufacturing companies are not able to maintain consistency in holding of CAs. The average level of CAs of BN is Rs. 435.89m. It shows that BN has adopted aggressive assets management policy at year 2003 to 2005 but shifted towards conservative policy from year 2006 to 2008. But an average BN follows conservative approach of assets management because its individual average of CAs is higher than Industry (overall) average of CAs. Similarly, ULNL and BPP have higher level of CAs than overall average, so, these companies also have followed conservative assets management approach. But other six selected manufacturing companies (namely, NLO, NBG, JSM, RJM, AVU and RSM) have followed the aggressive approach of CAs management because of using lower level of CAs than overall average.

Similarly, there is wide variation in the level of CLs for the individual manufacturing company. Table 4.1 (ii) presents that the highest level of CLs is Rs. 622.09m of BPP in year 2004 and the lowest level is Rs. 11.97m of RJM is 2003. The level of CLs during the study period is increasing trend, which shows that most of the selected companies are prone towards the aggressive CLs policy. Among nine selected manufacturing companies only three (BN, NLO, and RJM) have adopted conservation approach of CLs because they have lower average CLs level than overall industry average of CLs and other remaining six companies have followed aggressive CLs approach because of higher level of individual average of CLs than overall industry average of CLs.

ii. Different Companies in Same Period

The industry yearly average of CAs in 2003 to 2008 are Rs. 190.39m, Rs. 232.10m, Rs. 248.75m, Rs. 245.06m, Rs. 526.68 and Rs. 262.39 million respectively, which is shown in above table. CAs level of BN and ULNL for 2003 to 2008 are higher than industry yearly average of respective year, so it indicates that BN and ULNL have followed conservative assets management policy. But CAs level of NLO, NBG and RJM have lower than yearly average of respective year. From F/Y 2003 to 2008. So, they have followed aggressive approach of CAs the level of CAs of JSM for 2003 to 2005 and 2008 are above the average but the year 2006 and 2007 is below the average. Thus the beginning three year JSM has followed conservative approach but after 2005 company has been following the aggressive approach of CAs. Similarly AVU has followed aggressive approach for year 2003 to 2005 and year 2007 but conservative CAs management for year 2006 and 2008. BPP has adopted aggressive approach for year 2004 and 2005 and conservative approach for remaining years during the study period. RSM has followed conservative CAs management for year 2004 and adopted aggressive approach for remaining years. In conclusion, Nepalese manufacturing companies have followed aggressive CAs management policy in the year 2003 and 2004 because the yearly industry average is lower than overall industry average. But in other remaining three years, companies have adopted towards conservative approach because their yearly CAs level is higher than overall average level of CAs.

Similarly, according to the analysis of the level of CLs It is found that most of the selected manufacturing companies have followed the conservative CLs management approach because their CLs is lower than average. There is wide variability in the size of CLs between selected manufacturing companies. Such variability seems to be inconsistent WC policy of selected manufacturing companies. BN, NLO, NBG, RJM and RSM have followed the conservative approach of CLs management for year 2003 and other have followed aggressive approach because their CLs level is higher than yearly average level of CLs (i.e.

Rs. 238.43m) at year 2003. Similarly NLO, RJM, ULNL and BPP have adopted conservative CLs approach for year 2006 because their CLs is lower than yearly average in respective year. The CLs level of BN for 2007, AVU, for 2005 and 2007 and RSM for 2005 is just equal to their respective yearly industry average, and for 2008 BN, NLO, RJM and JSM have lower than yearly average. So, they have followed moderate approach of CLs for given year. In short, Nepalese manufacturing companies have followed aggressive CLs manufacturing policy for year 2004, 2005, 2007 and 2008 because their yearly average is lower than industry overall average and have adopted conservative approach for year 2003 and 2006.

iii. Different companies in Different Period

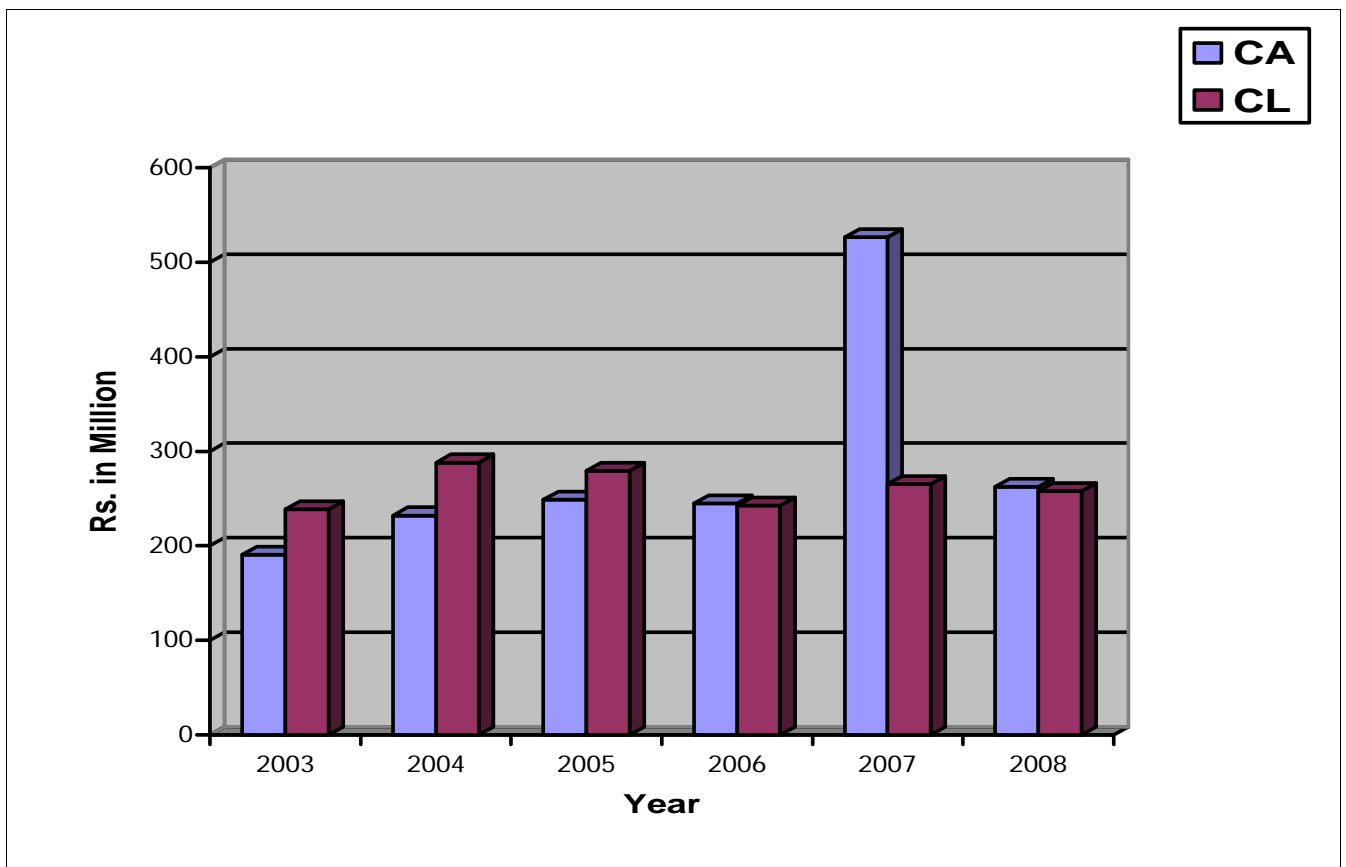
Form the year 2003 to 2006 and 2008 the yearly average is less than overall industry average which indicates aggressive approach of CAs management but in year 2007 yearly average is higher than overall average (i.e. Rs. 284.23m) So, selected manufacturing companies are prone towards conservative approach of CAs management. Similarly, the company wise average of CAs level shows that out of nine companies, six (NLO, NBG, RJM, JSM, AVU and RSM), have lower than overall average, So, they have followed aggressive policy of CLs, where as remaining three companies (BN, ULNL and BBP) have followed conservative approach because their company wise average of CAs is higher than overall average CAs.

The overall average of CLs is Rs. 261.88m. During the study period the yearly average for 2003, 2006 and 2008 is less than overall average which shows companies have followed conservative approach of CLs but for year 2004, 2005 and 2007 the yearly average of CLs are higher than overall average. So, companies have adopted aggressive approach of CLs. Similarly, by analyzing company-wise only there companies BN, NLO, RJM and RSM have lower company average than overall average. So, it shows that they have followed conservative CLs approach and remaining five companies have followed aggressive approach. Here, the researcher found that the level of CLs are

increasing trend and it prone towards the aggressive CLs approach (management).

The yearly industry average level of CAs and CLs presented by graphic method are as follows.

Figure: 4.1
Graphic Presentation of Level of CAs and CLs



4.2.1.2 Level of Net Profit

The profitability amount (Position) of the Selected manufacturing companies is widely varied. Most of the companies profit is negative and is in fluctuating trend, during the study period. Higher the level of net profit, lower the level of WC and it indicate aggressive approach of WC. The position of net profit of selected mfg companies is shown in table 4.2.

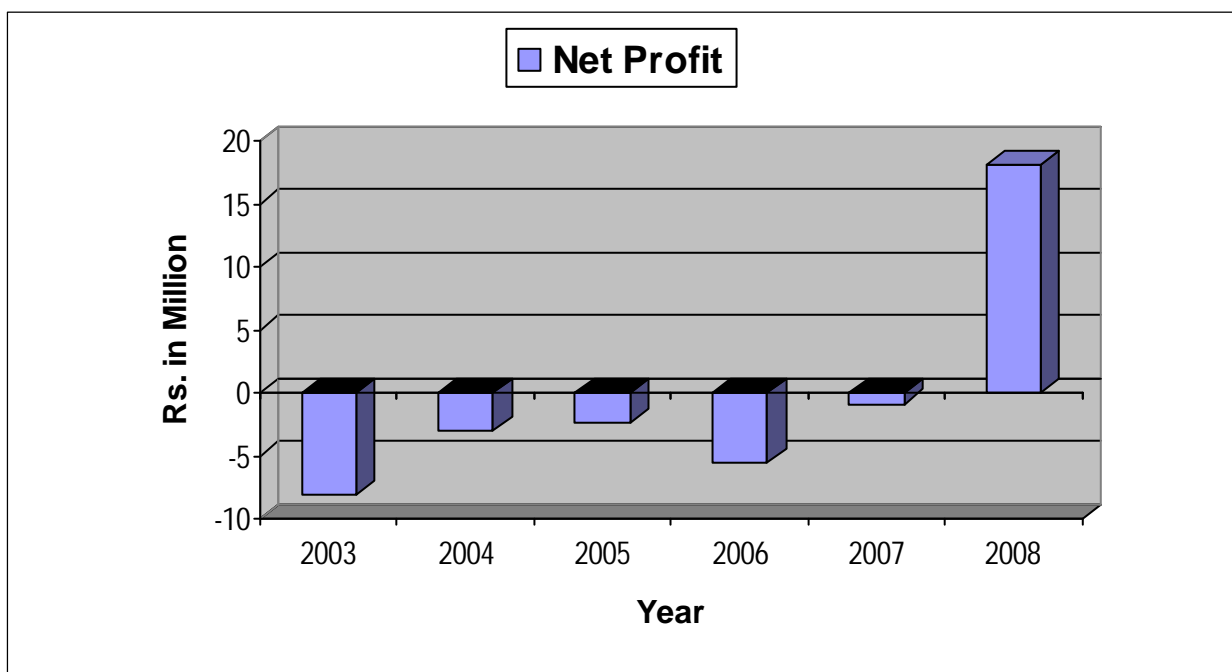
Table: 4.2
Position of Net Profit of Selected Nepalese Manufacturing Companies
(Rs in Million)

Year Company	2003	2004	2005	2006	2007	2008	Total	Average
BN	62.18	55.91	35.89	48.61	19.37	37.80	259.76	43.29
NLO	9.66	5.08	-2.21	6.22	-	0.31	19.06	3.18
NBG	-21.15	-46.46	-45.03	-13.39	-42.23	-41.51	-209.77	-34.96
RJM	-3.18	0.60	0.94	5.34	4.74	7.17	15.61	2.60
JSM	-36.33	16.16	-29.91	-50.22	-5.29	8.81	-96.78	-16.13
AVU	1.05	-54.08	1.39	14.07	0.30	1.15	-36.12	-6.02
ULNL	119.03	120.59	68.04	42.61	93.17	140.78	584.22	97.37
BPP	-172.34	-110.05	-77.29	-110.24	-77.85	-	-547.77	-91.30
RSM	-32.37	-15.37	27.11	6.80	-	8.67	-5.16	-0.86
Total	-73.45	-27.62	-21.07	-50.2	-7.79	163.18	-16.95	-2.82
Average	-8.16	-3.07	-2.34	-5.58	-0.87	18.13		-0.31

Source: Annex 3

The table shows that most of the companies' both yearly and company average profit is negative. Most of the company profit is in decreasing trend. Only BN and ULNL have earned reasonable profit. RJM and NLO have also positive average profit and AVU has also earned positive net profit except the year 2004 but its average profit is negative. Except these, all other selected companies are suffering from huge loss. The highest profit earned during the study period is Rs 140.79 m in 2008 by ULNL and the lowest profit (i.e. loss) during the study period is (Rs.172.34m) of BPP in 2003. In short out of nine companies only four (i.e. BN, NLO, RJM and ULNL) have positive average net profit during the study period. The overall average profit is negative i.e. Rs-(0.31m) which shows that the overall profitability of selected companies is not satisfactory. Here, the yearly average level of net profit is also negative except the year 2008. Which also shows that Nepalese manufacturing companies bearing huge loss or suffering from loss in every year. The yearly average of Nepalese manufacturing companies during the study period is given in fig 4.2

Figure: 4.2
Graphic Presentation of Net Profit



4.2.1.3 Cash conversion cycle

Cash conversion cycle refers to the length of time required to convert raw material into finished goods and then to sales these goods or it is the length of time from the payment for the purchase of raw materials to the collection of account receivable. More aggressive management, shortens the CCC. Aggressive assets management, by lowering the average level of both receivable and inventory, increase turnover and shortens conversion period and by employing more account payable, aggressive liability management shortens the cash conversion cycle. Larger payable lead to shorter payable turnover. This leads a longer payable deferral period (PDP) and shorter CCC. Similarly, an aggressive assets policy shortens the firm's operating cycle, which leads to a shorter CCC.

The overall CCC is 92 days of Nepalese manufacturing companies, which is not so much favorable or satisfactory. The CCC is not so good during the study period. It is found that the CCC of BN is 124 days, NLO is 271 days, NBG is 121 days, RJM is 44 days, JSM is 59 days, AVU is 100 days, ULNL is 1 day

BPP is 64 days and RJM is 46 days during the study period from 2003 to 2008. By examining the CCC of Nepalese manufacturing companies almost of the companies have to follow conservative WC policy because their CCC is larger i.e. more than two months. The yearly average CCC is also more than two months except year 2008. So, it also shows that during the study period (except year 2008) they follow conservative WC policy. In conclusion the industry average of CCC 92 days proves that Nepalese manufacturing companies follow conservative WC policy because it is longer i.e. more than two months. (*for detail see annex 12*)

4.2.2 Analysis Based on Ratio

Liquidity, risk return and turnover are essential elements that must be considered in establishing a WC policy. For this, the researcher begins by analyzing first the current ratio and then net WC turnover ratio (NWTR) and return on net WC (ROW).

4.2.2.1 Analysis of Liquidity Position

The liquidity position measured net WC. It indicates the rupees of CAs available for each rupee of CLs obligations. It is a very crucial problem in maintain the appropriate liquidity in any enterprise. The major objective of adopting appropriate WC policy is to maintain appropriate and optimum liquidity in order to enable the firm to meet current or short term obligations, when they became due for payment. For analyzing the liquidity position, firm's current ratio is taken as major factors. CR of selected manufacturing companies is given below.

Table: 4.3
Current Ratio of selected manufacturing companies in Nepal.

Year Company	2003	2004	2005	2006	2007	2008	Average
BN	1.78	2.08	1.47	1.59	1.76	2.57	1.88
NLO	2.09	2.26	2.56	2.14	-	1.51	2.11
NBG	0.70	0.64	0.61	0.56	0.43	0.25	0.53
RJM	3.56	1.79	1.58	1.39	1.71	1.36	1.90
JSM	0.58	0.59	0.58	0.44	0.54	1.17	0.65
AVU	0.67	0.55	0.84	0.81	0.79	0.86	0.75
ULNL	1.32	1.71	1.60	2.71	1.69	1.33	1.73
BPP	0.42	0.34	0.52	2.04	5.37	-	1.74
RSM	0.47	0.69	0.62	0.67	-	0.50	0.59
Average	1.29	1.18	1.15	1.37	1.37	1.06	1.32

Source: Table 4.1 and 4.2

Higher the CR, better the liquidity position. For any type of business 2:1 is considered to be an adequate (standard) and better ratio. The higher the liquidity position, the lesser the needs for additional WC since it will be better for them (firm's) to have the best use of existing liquidity position. If manufacturing companies have lower liquidity position (i.e CR) than standard, they must raise the amount of WC, to save themselves from liquidity crises. Out of nine manufacturing Companies four of them (BN, NLO, RJM and ULNL) have maintained reasonable liquidity position because their CR is nearly standard ratio 2:1. The average CR of BN is 1.88, NLO is 2.11, RJM is 1.90 and ULNL is 1.73 times one and these are also greater than overall average CR 1.32. Out of nine selected manufacturing companies remaining five have lower CR than overall average, so they have failed to maintain desirable liquidity position and there is serious liquidity problem of them. Table 4.3 shows that the CR is widely varied within and among selected manufacturing companies. The highest CR is 3.56 times one of RJM in 2003 and the lowest is 0.25 times 1 of NBG in 2008. The CR of NLO is stable (not volatile) during the study period. Most of the selected manufacturing companies have volatile nature of CR which shows that they can't follow the specific WC policy Lower CR indicates

that the use of lower level of CAs and higher level of CLs. So it can be concluded that most of the manufacturing companies follow aggressive policy of WC. By analyzing average CR only NLO has higher CR than standard i.e. 2.25 times 1. Similarly, BN, RJM and NL also have adequate (reasonable) CR (i.e. near of standard) which means that these four companies follow conservative WC policy because they have used more CAs than CLs. If there is low CR, company should increase the WC and vice versa.

4.2.2. 2 Analysis of Net Working Capital Turnover

The NWTR indicates the number of times the average net WC is turned over during the year. It shows the requirement of WC for one rupee of sales and efficiency of utilizing WC. The WC needs for manufacturing companies also depends upon the turnover rate i.e. the time lag between current assets converted into cash. The components of WC viz, inventories and receivables etc. are need to convert into cash and that converting period should be short. Any organization with higher turnover of WC (CAs), needs lesser WC compared to those firm having lower turnover. The speed or rate of turnover determines the need of WC in the firm. So we can say that if the firm uses lower level of WC the turnover is high and this firm has to follow (adopt) aggressive WC approach. The calculated NWTR of selected manufacturing companies is given below.

Table :4.4
Net WC Turnover Ratio of Selected Manufacturing Companies in Nepal

		(in times)					
Year Company	2003	2004	2005	2006	2007	2008	Average
BN	2.38	1.94	3.30	2.86	2.60	2.31	2.56
NLO	2.37	1.84	1.22	2.73	-	2.17	2.07
NBG	-3.85	-1.51	-1.80	-2.76	1.13	-0.45	-1.54
RJM	5.28	10.12	13.46	18.80	11.58	18.17	12.90
JSM	-2.66	-3.27	-3.28	-3.24	-2.12	17.69	0.52
AVU	-3.57	-1.92	-8.03	-11.17	-8.13	-9.14	-6.99
ULNL	17.69	9.20	7.23	4.91	5.71	8.45	8.86
BPP	-1.48	-1.19	-3.26	4.56	0.30	-	-0.21
RSM	-3.30	-3.91	-6.17	-5.33	-	-3.12	-4.37
Average							1.53

Source : Annex 4 and Table 4.14

The table shows that out of nine manufacturing companies four have negative average net WC turnover ratio namely NBG (-1.54 times), AVU (-6.99 times), BPP (-0.21 times) and RSM (-4.37 times). Negative turnover of Net WC indicates that their net WC is negative and these manufacturing companies are suffering from excess CLs over CAs. So there are growing need to make effective utilization of existing CAs to increase their turnover. Other five companies (BN, NLO, RJM, JSM and ULNL) have positive turnover, so, these companies enjoy positive net WC. Adequate turnover itself is sufficient to generate additional WC. So, these four companies need not search for additional WC.

4.2.2.3 Return on Net Working Capital

Return on NWC is one of the determinants of WC needs of manufacturing Companies. Higher the RWC means lesser the level of WC that means if there is low level of WC used by firm they enjoy higher return i.e. they follow aggressive approach of WC. If there is higher level of NWC then ROW is low that means the firm adopts conservative approach of WC. Firms profitability greatly affect their WC needs because net profit is also a major source of WC.

The return on net WC of selected manufacturing companies in Nepal is given below.

Table 4.5
Return on net WC of Selected Nepalese Manufacturing Companies
(in Percentage)

Year Company	2003	2004	2005	2006	2007	2008	Average
BN	40.07	29.14	28.54	25.95	8.26	13.81	24.29
NLO	21.36	8.71	-3.72	12.50	-	0.79	7.93
NBG	43.55*	50.12*	32.92*	8.76*	21.06*	16.70*	28.85*
RJM	-10.39	2.25	4.29	23.77	14.97	34.06	11.49
JSM	19.34*	-8.14	14.59*	16.45	2.37*	21.67	11.05*
AVU	-1.17	36.19*	-3.07	-24.25	-0.48	-1.63	0.93*
ULNL	140.04	64.16	31.90	16.92	38.68	77.98	61.61
BPP	56.48*	26.72*	38.54*	-86.98	-3.34	-	6.28*
RSM	27.66*	13.15*	-25.55	-6.91	-	-4.42	0.79*
Average							17.03*

Source: Table 4.2 and Table 4.14

*[Note: * Obtained by dividing negative NPAT by negative NWC]*

The above table shows that out of nine manufacturing companies five are operating at loss while only four companies could achieve (reap) some profit. Most of the companies could earn negative return and their profit is fluctuating during the study period 2003 to 2008. The average ROW is 24.29% of BN, 7.29% of NLO, (28.85%) of NBG, 11.49% of RJM, (11.05%) of JSM, (0.93%) of AVU, 61.61% of ULNL, (6.28%) of BPP and, (0.79%) of RSM. Among these the highest average ROW is 61.61% (ULNL) and the lowest is negative (28.85%) of NBG. Net profit is a major source of WC, so out of nine companies, BN, NLO, RJM and ULNL do not need additional WC because they meet their WC need by utilizing net profit while, other five companies need additional WC and they need to minimize losses in course of time by effective utilization of WC (i.e. CAs). The overall average is also negative i.e. (17.03%), which shows that the overall RWC of Nepalese manufacturing companies is not satisfactory. ROW is widely varied among companies which shows that there is no specific WC policy followed by Nepalese companies. By comparing average

net ROW with overall average almost of the company have higher return than overall average which means they use lower level of WC and they adopt the aggressive policy of WC.

From the above analysis, (the level of CAs and CLs, level of net profit, cash conversion cycle, net working capital turnover, return on net WC and liquidity position) here, the researcher has concluded about the policy of WC followed by selected Nepalese manufacturing companies. Administrative negligence in daily operation, ineffective inventory and credit management system, higher cost of factory operation, lack of proper financial plan are found to be major cause of inefficiency (downfall) of the companies. From the above analysis of the variables of WC, the summary of WC policy followed by selected Nepalese manufacturing companies are presented as follows.

Table: 4.6
WC Approaches Followed by Selected Nepalese Manufacturing Companies

Variables Companies	CAs	CLs	CCC	ROW	NWTR	Net profit	CATR	Average
BN	C	C	C	A	C	A	C	C
NLO	A	C	C	A	C	A	C	C
NBG	A	A	C	C	C	C	C	C
RJM	A	C	A	A	A	A	A	A
JSM	A/M	A	A	C	C	C	A/M	C
AVU	A	A	C	C	C	C	C	C
ULNL	C	A	A	A	A	A	A	A
BPP	C	A	A	A	C	C	C	C
RSM	A	M	A	A	C	A/M	A	A

(Note A-aggressive, C-conservative, M-moderate, A/M- prone toward moderate)

Cash flow, liquidity, risk and required return are essential elements that most be considered in establishing a WC policy. The effect changes in the firm's policies have on its assets composition and hence its cash conversion cycle expenses level and risk and required return have been examined. Other things being equal, the lower the CLs, the more conservative the firm's liability management policy. The higher the level of CLs the more aggressive the policy.

This is exactly the opposite of an aggressive versus a conservative assets policy. Other things being equal, an aggressive management policy leads lower CAs, a shorter cash conversion cycle, lower expenses and high risk high return. Conservative management policies have just opposite effects. Here, due to the lack of standard for comparison (analysis) the researcher applied overall industry average as standard level for analyzing the WC policies, followed by selected manufacturing companies.

Current Assets and Current Liabilities

Aggressive assets management generally means lower level of CAs and vice-versa. Here the industry average CAs levels is Rs. 284.23 m and here in this study it is supposed that the companies which CAs level is lower than overall average have followed aggressive policy. Here NLO, NBG, RJM, AVU and RSM have followed aggressive policy. Though JSM has followed aggressive approach, they are prone towards moderate WC policy. Other remaining companies (i.e. BN, BPP and ULNL) have adopted conservative policy.

The overall average level of CLs of Nepalese manufacturing companies is Rs 261.88m. The level of CLs shows that out of nine companies only three (BN, NLO and RJM) have adopted conservative approach other six companies CLs level is higher than overall average so they are adopted aggressive approach. Here the CLs level of RSM is near to overall average. So it shows that RSM has prone towards moderate WC policy. In average the level of CLs is higher than level of CAs of selected Nepalese manufacturing companies.

Cash Conversion Cycle

More aggressive management shortens the cash conversion cycle or by employing more account payable and accruals, aggressive liability management shortens the cash conversion cycle. The aggressive policy shortens the firm's operating cycle and longer the payable deferral period which leads the short cash conversion cycle. Conservative management approach have just the opposites effects. The cash conversion cycle of Nepalese management sectors is 92days, which is more than three months and it seems to be longer. Out of nine

selected manufacturing companies, BN, NLO, NBG and AVU have adopted conservative policy and remaining three (RJM, JSM, ULNL, BPP and RSM) have lower level of CCC so it can be clearly said that they are adopted aggressive WC policy.

Expenses and Revenue Level

Aggressive management approach will have the effect of the reducing expenses and increasing revenue. By keeping lower level of inventory, receivable and account payable leads to lower level of cost of management of these components. This leads to higher EBIT as compared with the result of a conservative policy. Here the profitability of Nepalese management companies is very low level (i.e. negative), due to higher level of costs as compared to their sales level.

Turnover Position

The WC needs for manufacturing companies also depends upon the turnover rate. Any organization with higher turnover of WC and CAs, need lesser WC, compared to those firm having lower turnover. If the firm uses lower level of WC, the turnover is high and this firm has to follow aggressive WC approach. The overall net WC turnover is negative and almost of the selected companies net WC turnover ratio is negative. Only RJM and NL have adopted aggressive WC policy. Other remaining companies have followed conservative WC policy according to their net WC turnover position.

The major cause of negative return of Nepalese manufacturing companies is adopting the un appropriate WC policy. According to previous analysis most of the Nepalese manufacturing companies have followed conservative approach of WC. From previous analysis it is concluded that Nepalese manufacturing companies have high level of CAs and their CCC is long. Most of selected manufacturing companies operate with higher expenses and their earning is low. Similarly many of them have not followed the rule high risk high return. They earn low level of return by taking (bearing) higher level of risk. The net WC turnover ratio is very low of Nepalese companies. Most of the companies have

high level of inventory and receivables and they remains in long term. They can't be able to effective utilized and proper management of these components of WC, So, the turnover is very low. It also seems that some of the companies used aggressive approach and some of them are prone toward moderate approach but the analysis proves that in average Nepalese manufacturing companies have adopted conservative WC policy.
(The detail suggestion will be stated in next chapter).

4.3 Composition of Working Capital

To operate any business organization two kind of assets are necessary or in other words, any business firm invest their capital (fund) in fixed assets and current assets. Fixed assets is long term nature but for day to day operation business firm needed to invest their same portion of capital fund in current assets. Cash ,inventory, receivable and other marketable securities are the main components of CAs. Here composition of WC means the variables of CAs. Any organization need to determine the size of WC as accurately as possible. Neither under investment nor over investment in WC is to be preferred. A firm, therefore, should pay proper attention to determine the size of WC. The composition of CAs (i.e. WC) of selected manufacturing companies are analyze below.

4.3.1 Investment in Current Assets

To run day to day operation smoothly every manufacturing company has to maintain appropriate level of CAs. Here level of CAs means gross working capital level. The gross WC is the size of investment in each type of CAs i.e. cash, receivables and inventory. Success and failure of any business firm depends upon proper management of available resource and their best utilization. So each of the components of CAs should be managed efficiently and effectively.

A high level of CAs does not indicate the higher level of liquidity. Among the components of CAs except cash, receivable and inventories have to wait for conversion into cash that means there is time lag between convert these two

CAs into cash. So they are less liquid than cash. Cash is hundred percent liquid assets and it has zero conversion period. High ratio of cash to CAs indicate more liquidity position of CAs but it is also an indication of poor management of cash because to remain (retain) idle of cash reserve involves an opportunity cost of holding cash. Similarly higher ratio of inventories indicates ineffective management of inventory and involves holding cost and higher ratio of receivables indicates the liberal credit policy of company. For analyzing the position of CAs and its components its composition should be seriously examine separately i.e. position of cash, receivables and inventories to its total CAs level.

Table: 4.7

i. Company Average Ratio of Cash, Receivable and Inventory to Current Assets *(In Percentage)*

Company	Ratio of cash to CAs	Ratio of Receivable to CAs	Ratio of inventory to CAs
BN	4.11	20.27	37.88
NLO	1.53	57.92	25.73
NBG	1.79	25.73	49.40
RJM	1.58	29.90	67.56
JSM	1.50	12.26	58.40
AVU	6.24	14.67	77.87
ULNL	25.39	9.94	35.49
BPP	7.15	20.34	49.51
RSM	24.23	18.56	58.22
overall Average	8.17	23.29	51.12

Grouping of Cash to CAs

Group	Ratio	No of Company
A	Lower than 8.17%	7
B	Higher than 8.17%	2

Grouping of Receivable to CAs

Group	Ratio	No. of Company
A	Lower than 29.29%	6
B	Higher than 29.29%	3

Grouping of Inventory to CAs

Group	Ratio	No. of Company
A	Lower than 51.12%	5
B	Higher than 51.12%	4

ii. Yearly Average Ratio of Cash, Receivable and Inventory to CAs

(In Percentage)

Year	Ratio of Cash to CAs	Ratio of Receivable to CAs	Ratio of inventory to CAs
2003	16.59	29.46	45.67
2004	6.20	27.37	45.09
2005	3.25	21.12	52.56
2006	6.18	22.90	48.35
2007	8.55	13.94	70.83
2008	8.59	23.43	45.14
Overall Average	8.17	23.29	51.12

Grouping of Cash to CAs

Group	Ratio	No. of Year
A	Lower than 8.17%	3
B	Higher than 8.17%	3

Grouping of Receivable to CAs

Group	Ratio	No. of Year
A	Lower than 23.29%	3
B	Higher than 23.29%	3

Grouping of Inventory to CAs

Group	Ratio	No. of Year
A	Lower than 51.12%	4
B	Higher than 51.12%	2

Source : Annex 5,6, and 7.

4.3.1.1 Ratio of Cash and Bank Balance to CAs (CCA)

The ratio states, what percentage of CAs is in the form of cash. By examine, the ratio of cash and bank balance to CAs the researcher has found that there is wide variation within and among manufacturing companies. It varies from 12.95% to 0.86% of BN, 2.91% to 0.61% for NLO, 3.78% to 0.90% for NBG, 4.80% to 0.26% for RJM, 3.87% to 0.33% for JSM, 16.57% to 0.90% for AVU, 54.06% to 1.10% for ULNL, 11.02% to 0.1/% for BPP and 10.86% to 1.68% for RSM during the study period. The higher ratio indicates the higher investment in cash which means the higher level of idle fund remains in the company that increases the opportunity cost and decreases the profitability of the company. On the other hand, lower level of cash balance means loosing the opportunities and unable to meet current obligations on time, which moves the firm towards bankruptcy. Here, this ratio analyzing by two ways i.e. the manufacturing company wise average of cash to CAs and yearly average of cash to CAs.

i. Company Average ratio of Cash to CAs

The above table 4.7 (i) shows the company average of cash to CAs of selected manufacturing company. The overall company average of cash to CAs is 8.17% which means Nepalese manufacturing companies maintain their cash balance by 8.17% of their total CAs level. The lowest holding of average cash balance to

its CAs level is Just 1.50% of JSM, and NBG, RJM and NLO have also lower level of cash balance i.e. 1.79%, 1.58% and 1.53% respectively to their CAs level. ULNL has the highest level of cash balance ratio i.e. 25.39% of its CAs. The ratio of cash to CAs is widely varied among the selected manufacturing company. Out of nine manufacturing companies only two (ULNL and RSM) has the greater ratio than overall average ratio. Other eight selected companies have lower ratio than the overall average.

ii. Yearly Average Ratio of Cash to CAs

The above table 4.7 (ii) shows that the yearly average ratio of cash to CAs. The overall average ratio is 8.17% during the study period 2003 to 2008. The yearly average is fluctuating during the study period. The highest yearly average ratio is 16.59%. in 2003 and the lowest is 3.25% in 2005. Out of 5 only three fiscal years' Nepalese manufacturing companies hold higher cash to CAs balance than overall yearly balance (ratio). The yearly average ratio is 16.59% in 2003, 6.20% in 2004, 3.25% in 2005, 6.18% in 2006, 8.55% in 2007 and 8.59% in 2008.

4.3.1.2 Ratio of Receivable to CAs (RCA)

This ratio shows what parentage of CAs is in the form of receivables. An increase in the ratio shows that the management of receivables has an important bearing on the performance of the company. Higher receivable to CAs ratio indicates the liberal credit policy of the company. The RCA is widely varied within and among the selected manufacturing companies during the study period. It varies from 27.73% to 15.59% for BN, 72.67% to 47.60% for NLO, 39.99% to 14.21% for NBG, 45.29% to 15.94% for RJM, 15.42% to 8.79% for JSM, 26.24% to 7.90% for AVU, 16.45% to 5.67% for ULNL, 27.39% to 2.30% for BPP and 22.38% to 15.25% for RSM.

i. Company Average Ratio of Receivable to CAs

The overall average of receivable of CAs is 23.29% that means the portion of receivables in total CA of manufacturing companies is 23.29%. The ratio of

receivables to CAs shows that the ratio is highest for NLO (57.92%) and the lowest ratio of RCA is 9.94% of ULNL. The ratio is widely varied among the selected manufacturing companies. Out of nine companies six companies (BN, JSM, AVU, ULNL, BPP and RSM) have the ratio lower than overall average ratio and other three company have greater ratio than overall average. The variability of RCA indicates that the companies have inconsistent credit polity.

ii. Yearly Average of Receivable to CAs

The above table shows that the overall yearly average of RCA is 23.29% during the study period. There is widely fluctuation in the ratio of RCA. The yearly average ratio during the study period is in decreasing trend, this indicates the efficiency in management of receivable is improving trend. Fiscal year 2003 and 2004 have the higher ratio than overall average and in year 2005, 2006, 2007 and 2008 the ratio is lower than overall average. Table 4.7 (ii) shows, that the yearly average is 29.46%, 27.37%, 21.12%, 22.90%, 13.94% and 23.43% for year 2003 to 2008 respectively.

4.3.1.3 Ratio of Inventory to CAs (ICA)

This ratio shows what percentage of CAs is in the form of inventories. The increase in the ratio is an indication of liberal inventory policy, followed by the companies. Higher percentage of inventory to CAs means higher level of inventory holdings by the companies. Higher percentage of inventory holding, causes higher holding cost of inventory, lower than profitability and lower inventories turnover. It is the sign of poor inventory management. The inventory to CAs ratio is varied within selected manufacturing companies. The highest ratio is 252.24% (AVU) for year 2007 and the lowest ratio is 5.98% (RSM) for year 2003. The brief explain by focusing company wise and year wise overage is describe below.

i. Company Average ratio of Inventory to CAs

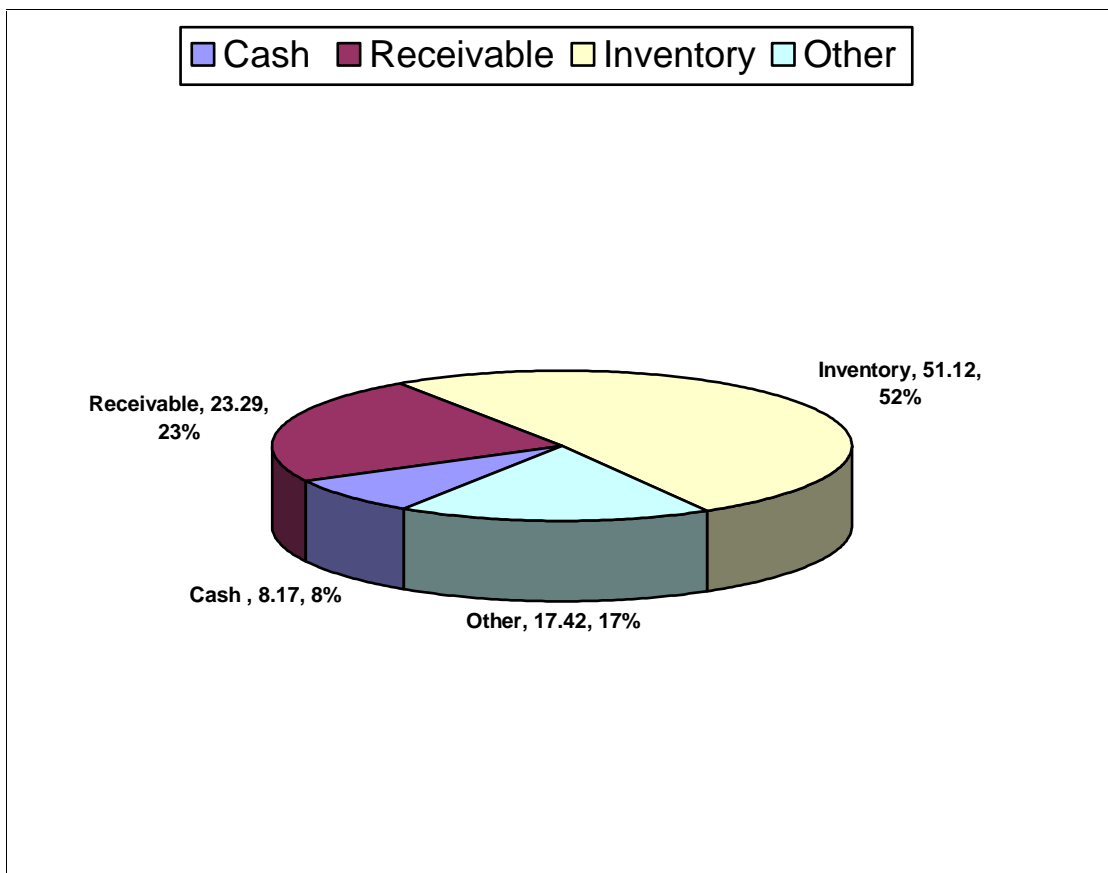
Table 4.7 (i) shows that the volume of inventories and its ratio to CAs has widely varied and in fluctuating trend during the study period. The company

wise overall average is 51.12% BN, NLO, NBG, ULNL and BPP have the lower average ratio than overall average and other remaining four companies have higher average ratio than overall average. The ratio is 37.88% of BN, 25.73% of NLO, 49.40% of NBG, 67.56% of RJM, 58.40% of JSM, 77.87% of AVU, 35.49% of ULNL, 49.51% of BPP and 58.22% of RSM.

ii. Yearly Average Ratio of Inventory to CAs

The yearly average ratio of inventory to CAs is 45.67% for 2003, 45.09% for year 2004, 52.56% for year 2005, 48.35% for year 2006, 70.83% for 2007 and 45.14% for year 2008. It seems the yearly average ratio of inventory to CAs is varied during the study period. The overall average is 51.12%. From year 2003 to 2008, F/Y 2005 and 2007 have higher ratio than average and remaining years average yearly ratio are lower than overall average.

Figure: 4.3
Composition of Current assets



4.3.2 Ratio of Current Assets to Total Assets (CATA)

This ratio indicates what percentage of the companies total assets are current. Higher the level of CAs indicates good liquidity position of the company but at the same time it reversely affect on the profitability of the company. As the CATA increase, both firm's profitability and risk would decrease. The requirement of CAs depends upon the nature of business. Here CAs means the assets to fulfill the need of daily business requirement and they are converted into cash within a year. Total assets means the sum total of fixed assets and CAs used by firm. The table given below represent the percentage of CAs to total assets.

Table:4.8
Ratio of CAs to Total Assets of Selected Nepalese
Manufacturing Companies

		(in Percentage)					
Year Company	2003	2004	2005	2006	2007	2008	Average
BN	43.51	43.84	41.38	48.88	52.41	57.86	47.98
NLO	85.49	83.13	83.09	83.59	-	86.08	84.28
NBG	82.00	87.55	90.53	88.61	79.79	70.57	83.18
RJM	16.53	20.98	20.51	25.81	25.81	26.09	22.62
JSM	30.46	32.52	33.23	30.44	34.21	36.92	32.96
AVU	71.11	68.51	73.87	71.14	70.81	80.08	72.59
ULNL	64.74	71.76	74.64	69.86	80.14	84.22	74.23
BPP	16.19	15.89	17.39	20.63	96.94	-	33.41
RSM	11.54	22.79	16.61	18.51	-	19.01	17.69
Average	46.84	49.66	50.14	50.83	48.90	49.01	52.10

Source : Table 4.1 (i) and annex 8.

The above table shows that the percentage of CAs to total assets is widely varied within the selected manufacturing companies. The highest ratio is 90.53% (NBG) in 2005 and the lowest ratio is 11.54% (RSM) in 2003. To make easy for analyzing the ratio is classified into company wise average and yearly average. The table below represents the ratio of CAs to TA focusing company wise and yearly average.

Table :4.9**(i) Company average ratio of CAs to Total Assets**

Company	Ratio (%)
BN	47.98
NLO	84.28
NBG	83.18
RJM	22.62
JSM	32.96
AVU	72.59
NL	74.23
BPP	33.41
RSM	17.69
Overall average	52.10

(ii) Yearly Average Ratio of CAs to Total Assets.

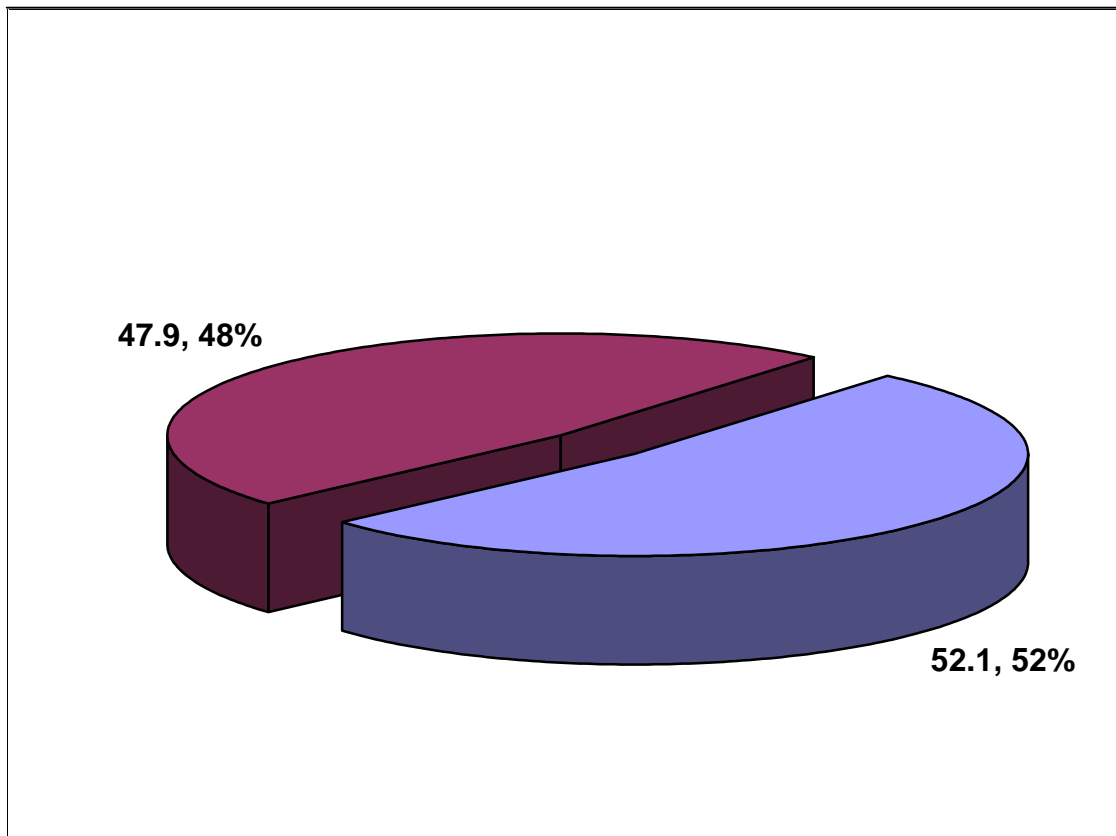
Year	Ratio
2003	46.84
2004	49.66
2005	50.14
2006	50.83
2007	48.90
2008	49.01
Average	52.10

The above table 4.9 (i) show the company wise average of CAs to total assets of the selected manufacturing companies. The overall average is 52.10% which shows that average 52.10% of the companies total assets are current. Out of nine companies four companies have higher ratio than overall average i.e. NLO have 84.28%, NBG have 83.18%, AVU have 72.59% and ULNL have 74.23% ratio of CAs to TAs. Other five companies have lower average ratio than overall average. The ratio is widely varied among the selected manufacturing companies. The highest ratio is 84.28% (NLO) and the lowest ratio is 17.69% of RSM.

Similarly table (ii) shows the yearly average ratio of CAs to total assets. During the study period the yearly average is in fluctuating trend, that is 46.84%, 49.66%, 50.14%, 50.83%, 48.90% and 49.01% for year 2003 to 2008 respectively. All the companies have lower ratio than overall average ratio.

Figure: 4.4

Composition of Total Assets of Nepalese Manufacturing Companies



4.4 Analysis of Turnover Position

The relationship between sales and assets are indicated by turnover ratios. These ratios reflect how effectively the company is managing its resources. Thus, these ratio measure the degree of effectiveness in use of resources or funds by a firm. In other words, turnover ratios are used to measure the actively within a firm. The behaviour of assets utilization (i.e. WC utilization) and improvement can be analyzed with the help of turnover ratio. Though, there is no any standard ratio of ideal management, generally a greater turnover is regarded as efficient utilization of the asset. Here, for the purpose of analyzing

assets utilization of selected companies, the researcher has to use only three type of turnover ratio, these are current assets turnover ratio, total asset turnover ratio and net WC turnover ratio. Out of these, the NWC turnover ratio has already been described in section 4.2.2.2, so here other two turnover ratio of the selected manufacturing companies are described.

4.4.1 Current Assets Turnover Ratio (CATR)

The ratio indicates the number of times the average current assets are turned over during the year. It shows the efficiency of utilizing CAs. The ratio shows the requirement of WC for one rupee of sales. It is a relationship between sales and CAs. An increase in the ratio shows improvement in CAs utilization. Higher the turnover of CAs is always desirable as it indicates the maximum utilization of CAs during the year. A low CAs turnover may reflect an inadequacy of net WC, as a result of low turnover of inventory or receivable. The CAs turnover ratio of selected manufacturing companies has been presented as follow.

Table :4.10
CAs Turnover Ratio of Selected Manufacturing Companies in Nepal

(in times)

Year Company	2003	2004	2005	2006	2007	2008	Average
BN	1.04	1.01	1.05	1.06	1.12	1.41	1.12
NLO	1.24	1.02	0.74	1.45	-	0.74	0.87
NBG	1.61	0.86	1.16	2.18	-1.47	1.34	0.95
RJM	3.80	4.48	4.92	5.25	4.80	4.77	4.67
JSM	1.95	2.28	2.36	4.12	1.79	2.58	2.51
AVU	1.73	1.54	1.57	2.61	2.10	1.48	1.84
ULNL	4.26	3.83	2.72	3.10	2.33	2.11	3.06
BPP	2.08	2.33	3.01	2.33	0.24	-	1.67
RSM	3.69	1.76	3.75	2.68	-	3.10	2.50
Average	2.38	2.12	2.37	2.75	1.21	1.95	2.13

Source: Table 4.1 and annex 4

The table shows that the overall average of CATR is 2.13 times for the study period. The CATR is widely fluctuating among and within the manufacturing companies during the period 2003 to 2008. The highest ratio is 5.25 times of RJM in 2006 and the lowest ratio is 0.74 times of NLO in year 2005 and 2008. The vertical average column shows the company wise average and horizontal average row shows the yearly average. The average is widely varied among companies. Four manufacturing companies such as, BN, NLO, NBG, AVU and RSM have lower turnover ratio than overall average. Four companies namely RJM, JSM, ULNL and BPP have higher turnover ratio than overall average.

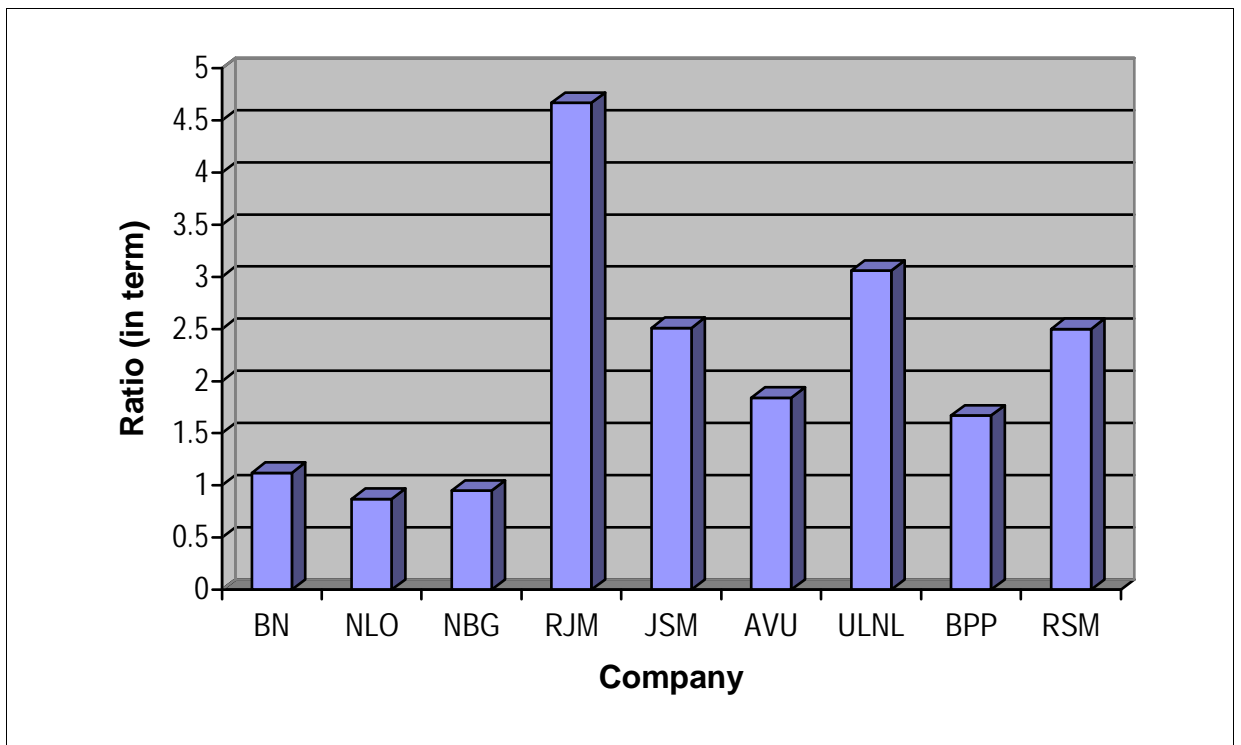
Similarly the yearly average is also varied during the study period. The yearly average for year 2003, 2005 and 2006 are above than overall average and for 2004, 2007 and 2008 it is below than overall average.

The Graphic presentation of CATR is given below.

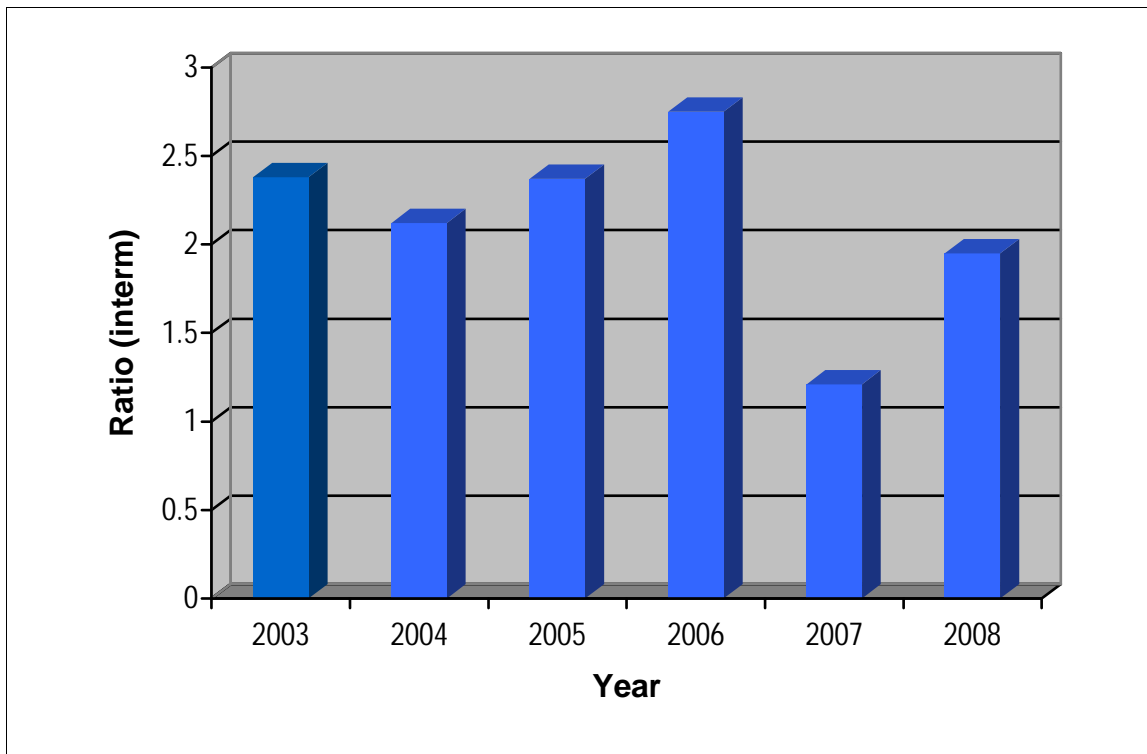
Figure :4.5

Graphic Presentation of CATR

i. Company Average of CATR



ii. Yearly Average of CATR



4.4.2 Total Assets Turnover Ratio

The ratio indicates the number of times average total assets are turned over during the year. Higher the ratio means better utilization of total asset and vice versa. It is the relationship between sales and total assets. The total assets turnover ratio is designed to gauge whether all the asset owned by a company are being used or if some are lying dormant. The TATR of selected Nepalese manufacturing companies are given below.

Table : 4.11**TATR of Selected Nepalese Manufacturing Companies (In Times)**

Year Company	2003	2004	2005	2006	2007	2008	Average
BN	0.45	0.44	0.44	0.52	0.59	0.82	0.54
NLO	1.06	0.85	0.62	1.22	-	0.63	0.88
NBG	1.32	0.75	1.06	1.93	1.17	0.94	1.20
RJM	0.63	0.94	1.01	1.35	1.21	1.25	1.07
JSM	0.59	0.74	0.78	0.82	0.94	0.95	0.80
AVU	1.23	1.05	1.16	1.85	1.49	1.19	1.33
ULNL	2.76	2.74	2.03	2.16	1.69	1.77	2.19
BPP	0.34	0.37	0.52	0.48	0.24	-	0.39
RSM	0.43	0.4	0.62	0.50	-	0.59	0.51
Average	0.98	0.92	0.92	1.20	1.05	1.02	0.99

Source : Annex 4 and 8.

From the above calculation of TATR, it is found that TATR of Nepalese manufacturing companies is widely fluctuating among and within companies. It is varied from 0.44 to 0.82 times (BN), 0.62 to 1.22 times (NLO), 0.75 to 1.93 times (NBG), 0.63 to 1.35 times (RJM), 0.59 to 0.95 times (JSM), 1.05 to 1.85 times (AVU), 1.69 to 2.76 times (ULNL), 0.34 to 0.52 times (BPP) and 0.40 to 0.62 times (RSM). TATR of ULNL is seems to be better and remain constant.

The table 4.11 also shows the company wise and yearly average of TATR. The overall average of TATR is 0.99. According to company wise average four companies (NBG, RJM, AVU, and ULNL) have higher ratio than overall average, which indicate that these companies. Use their total assets effectively or the better utilization of assets. Other five companies (BN, NLO, JSM, BPP and RSM) have lower company average than overall average. Similarly above table shows that the yearly average ratio of manufacturing companies is 0.98 times for 2003, 0.92 times for 2004, 0.92 times for 2005, 1.20 times for 2006, 1.05 for 2007 and 1.02 times for year 2008. The ratio of year 2003 and 2004 are

lower than overall average and other four years average ratio are higher than overall average. The yearly average turnover ratio seems to be an increasing trend, which indicates that Nepalese companies have been improved their total assets utilization (ratio) year by year.

4.5 Analysis of Profitability Position

The profitability position of a firm can be measured by its profitability ratio. The relation of the return of the firm to either its sales or its assets is known as profitability ratio. It shows the overall efficiency of the business concern. Profitability is an excellent indicator of a firm's financial health. Profitability ratio are useful both for historical comparison with the firm's own ratios in order to discern trends within the firm and for cross-sectional comparisons with the firm's competitors in order to find strengths or weaknesses. For our analysis profitability can be measured with the help of the ratio, such as, profit margin ratio, return on total assets and return on WC and the analysis of net profit position of the selected manufacturing companies. Out of these, the analysis of net profit position and return on net WC are already discussed in sections 4.2.1.2 and 4.2.2.3 respectively. So here remaining two profitability ratio are analysis, which is given below.

4.5.1 Net Profit (Loss) Margin Ratio

It established the relationship between net profit and sales. Higher the ratio is an indication on of the higher overall efficiency of the business company and better utilization of total resources. Poor financial planning and low efficiency is the indication of lower ratio. If the ratio is too low the firm seems to have poor management and the management of firm tried to improve, which means the firm should either raise its sales price per unit, cut its expenses or both. This ratio also indicates the cost/price effectiveness of the operation. The calculated net profit margin ratio of selected manufacturing companies is given below.

Table 4.12
Ratio of Net Profit to Sales of Selected Nepalese Manufacturing Companies
(In Percentage)

Year Company	2003	2004	2005	2006	2007	2008	Average
BN	16.87	14.80	8.66	9.08	3.18	5.98	9.76
NLO	9.00	4.74	-3.06	4.57	-	0.37	3.12
NBG	-11.30	-33.18	-18.24	-3.17	-18.64	-37.08	-20.27
RJM	-1.97	0.22	0.32	1.26	1.29	1.88	0.50
JSM	-7.27	2.49	-4.44	-7.77	-1.12	1.23	-2.81
AVU	0.33	-18.87	0.38	2.17	0.06	0.18	-2.63
ULNL	7.92	6.98	4.42	3.45	6.77	9.23	6.46
BPP	-38.28	-22.51	-11.81	-19.07	-11.10	-	-20.55
RSM	-8.38	-3.37	4.14	1.31	-	1.42	-0.98
Average	-3.68	-5.41	-2.18	-0.91	-2.79	-2.10	-3.04

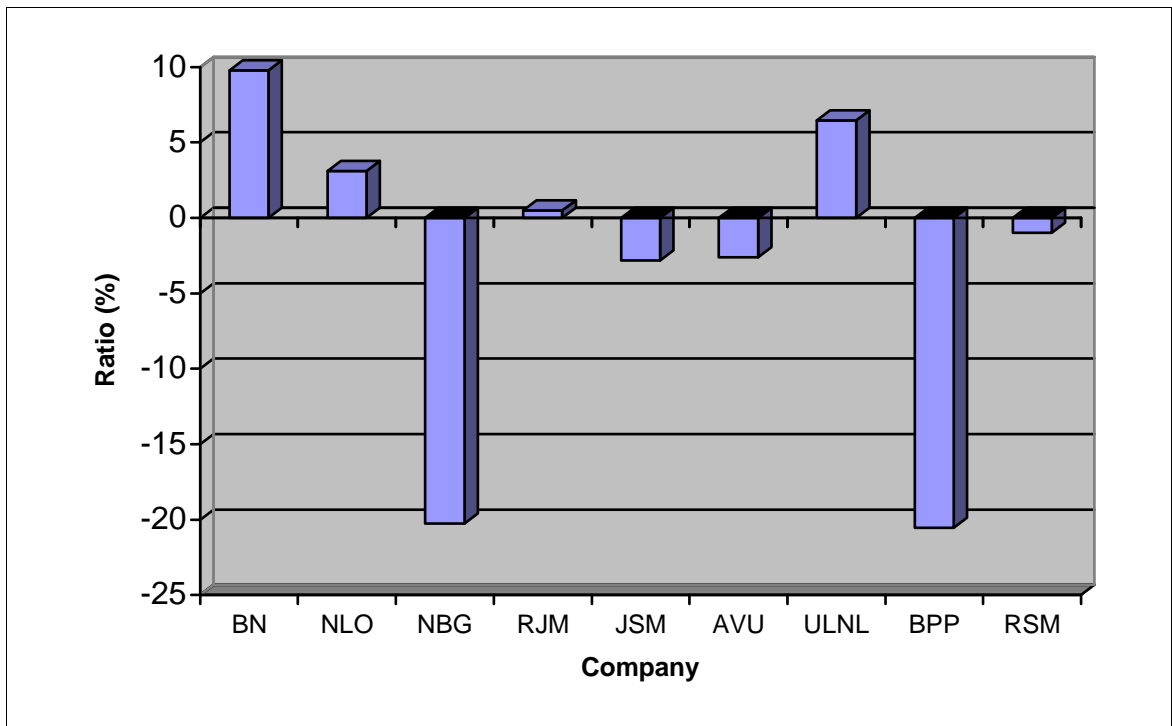
Source : annex 4 and Table 4.2

The above table shows the ratio of net profit to sales. The ratio is varied during the study period. Almost of the ratio is found to be negative, Which indicate the company is in loss position. Out of nine companies only four (namely BN, NLO, RJM and ULNL) have earned positive profit. The table shows the company wise and yearly average ratio of net profit to sales of selected manufacturing companies. The vertical average column shows the company wise average ratio. On the average, the selected manufacturing companies are incurring 3.04% losses in terms of their sales. Thus it indicates that there is a loss of Rs 0.0304 per rupee sales of selected manufacturing companies. Out of nine companies NBG, JSM, AVU, BPP and RSM are continuously losses during the study period. But the losses of RSM is less than overall losses of the companies. The highest profit ratio is 9.76% by BN and the highest loss is 20.55% by BPP. Similarly, the horizontal row of average shows the yearly average ratio of net profit to sales. The year wise average profitability of selected companies show that they are in losses of all companies. The highest percentage of yearly loss is 5.41% in year 2004 and lowest percentage loss is

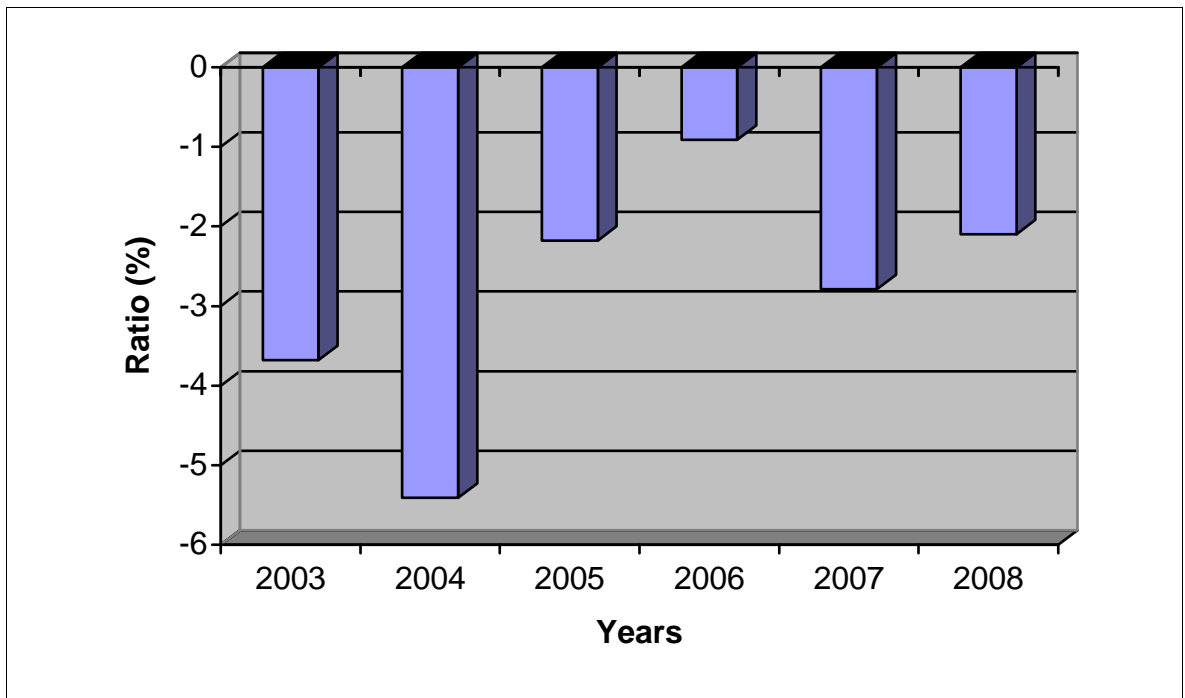
0.91 percent in year 2006. Though there is negative ratio the profit of year 2005, 2006, 2007 and 2008 have higher profit than average and rest two year's (2003 and 2004 have the lower profit margin than overall average. The Graphic presentation of net profit to sales ratio is presented below, which shows than the profit margin is in fluctuating trend.

Figure: 4.6
Graphic Presentation of Ratio of Net Profit to Sales of Selected Manufacturing Companies

i. Company Average of NPM



ii. Yearly Average of NPM



The profit of the manufacturing companies is not satisfactory and the companies which are in loss are not so much except BPP and NBG. If they tried to improve their management and control their costs, they will success to earn positive profit in coming year. The table shows that RJM, JSM, AVU and RSM are in loss but not so much. By few effects to effective management they will be able to earn positive profit because these losses seem to be caused by higher cost of producing, poor WC management and defective sales policy i.e. credit policy.

4.5.2 Return on Total assets (ROA)

It measures the return on investment or total assets. A more general ratio used in the analysis of profitability is the ROA ratio or one of the more useful profitability ratio is the ROA, which is useful in measuring the profitability of the total firm. The lowest ratio indicates that the firm have too many assets, high debt level, low earning and some combination of these problems. It helps to estimate the assets utilization rate of the companies. The return of total assets has been presented below in table 4.13.

Table: 4.13**Net profit to Total Assets Position of Selected Manufacturing Companies***(in Percentage)*

Year Company	2003	2004	2005	2006	2007	2008	Average
BN	7.65	6.64	3.77	4.69	1.87	4.88	4.92
NLO	9.55	4.03	-1.89	5.56	-	0.23	3.50
NBG	-14.97	-25.05	-19.25	-6.13	-21.85	-35.03	-20.38
RJM	-1.23	0.21	0.32	1.71	1.56	2.33	0.82
JSM	-4.33	1.85	-3.48	-6.37	-0.68	1.17	-1.97
AVU	0.40	-19.89	0.44	4.03	0.09	0.21	-2.45
ULNL	21.85	19.15	8.95	7.46	12.66	16.37	14.41
BPP	-12.86	-8.32	-6.19	-19.16	-2.63	-	-9.83
RSM	-3.57	-1.35	2.58	0.64	-	0.84	-0.17
Average	0.28	-2.53	-1.64	-0.84	-1.28	-1.12	-1.24

Source : Table 4.2 and annex, 8.

The above table shows the ratio of net profit to total asset (ROA) This ratio is widely varied with in and among the selected manufacturing companies. Most of the year of the companies are in the position of loss. This ratio is varied from positive 7.65% to 1.87% (BN), from positive 9.55% to negative 1.89% (NLO), from negative 6.13% to negative 35.03% (NBG), from positive 2.33% to negative 1.23% (RJM), from positive 1.85% to negative 6.37% (JSM), from positive 4.03% to negative 19.89% (AVU), from positive 21.85% to positive 7.46% (NL), from negative 6.19% to negative 19.16% (BPP) and form positive 2.58% to negative 3.57% (RSM) during the study period. The ratio is in decreasing trend because of decreasing in net profit and increasing in investment in assets of company due to downfall economic condition of the country.

The vertical average shows the companies average net profit to total assets ratio. The overall average ratio is negative 1.24 percentage. The table shows BN (4.92%), NLO (3.50%) RJM (0.82%) and ULNL (14.41%) have positive ratio of net profit to total asset i.e. return on assets and other five companies have

negative ROA. Though positive ROA of RSM is not satisfactory and negative ROA of RSM is also not too much. They are operating near to zero level profit ratio. The highest ratio is 14.41% of ULNL which show the highest return. Similarly, the horizontal average represents the yearly average from 2003 to 2008. Here, the year-wise average ROA is positive 0.28% in 2003 but negative in year 2004 to 2008, which is 2.53, 1.64, 0.84, 1.28 and 1.12 respectively. Even though there is only a positive return on assets ratio in 2003 over the study period, the average ROA of year 2006 and 2008 is also higher than overall average. The maximum return on assets is 0.28% in year 2003 and minimum is negative 2.53% in 2004. (The detail suggestion will be mentioned in chapter five.)

4.6 Analysis of Net Working Capital Position

The brief discussion about WC is already done in chapter two. Here only the position of NWC of selected manufacturing companies is to analyze. The net WC of a firm is a difference between their total CAs and total CLs of a year. The net WC indicates a cushion or margin of safety to the creditors. It also measures the level of CAs and CLs because liquidity position is closely related with the net WC. Higher the net WC indicates the higher level of CAs and lower level of CLs and vice versa. Higher level of NWC is supposed to better but too much NWC indicates the vast difference between CAs and CLs which is not appropriate or optimal liquidity management. So, however, it is a very crucial problem to maintain the appropriate liquidity in any companies as it indicates risk return trade off with higher or lower liquidity level. The positive NWC indicates the higher level of CAs than CLs and negative NWC indicates the higher level of CLs than CAs and the negative NWC shows the parts of the fixed assets also inventing form the short term funds. The net WC position of selected manufacturing is given below.

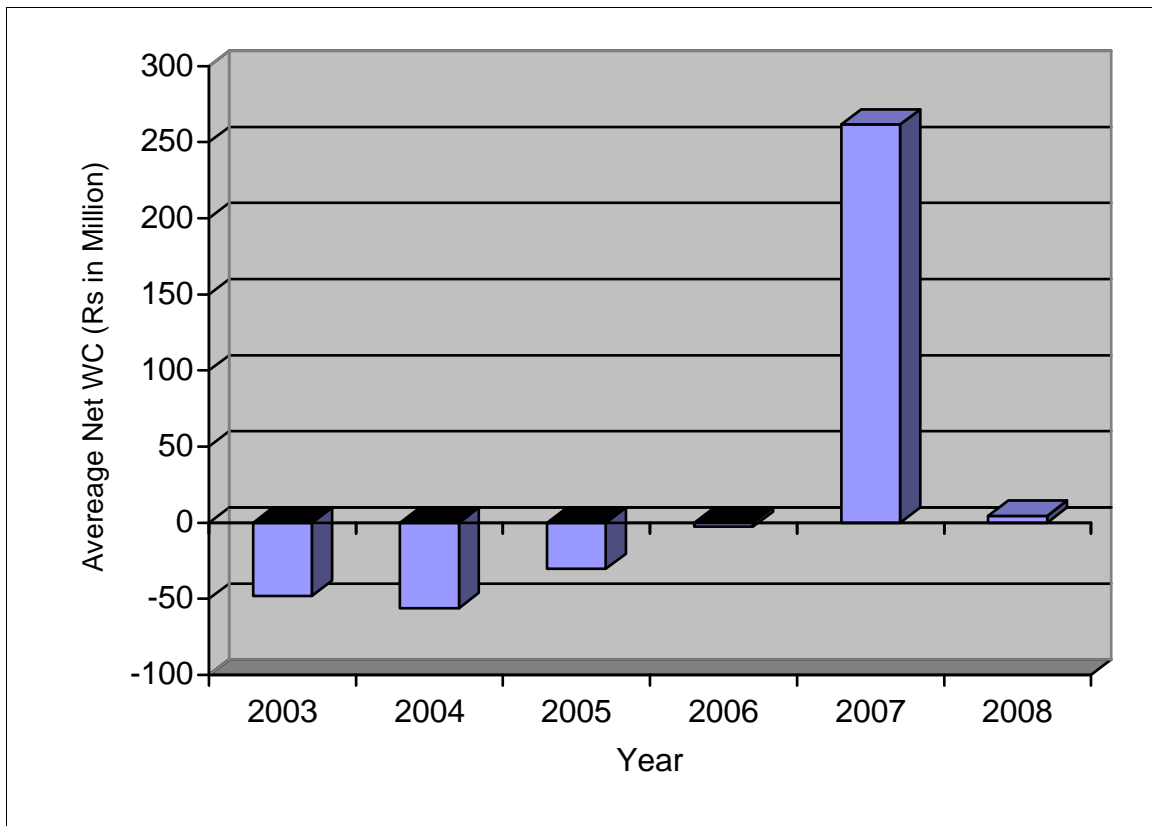
Table: 4.14
Position/level of NWC of Selected Nepalese Manufacturing Companies
(Rs in Million)

Year Company	2003	2004	2005	2006	2007	2008	Total	Average
BN	155.19	191.88	125.76	187.29	234.63	273.81	1168.56	194.76
NLO	45.22	58.33	59.36	49.75	-	39.02	251.68	50.34
NBG	-48.57	-92.69	-136.77	-152.89	-200.54	-248.51	-879.97	-146.66
RJM	30.60	26.67	21.92	22.47	31.67	21.05	154.38	25.73
JSM	-187.85	-198.53	-205.07	-305.26	-223.66	40.65	-1079.72	-179.95
AVU	-89.78	-149.43	-45.23	-58.03	-62.94	-70.47	-475.88	-79.31
ULNL	85.00	187.95	213.26	251.83	240.86	180.53	1159.43	193.24
BPP	-305.16	-411.93	-200.52	126.74	2333.81	-	1542.94	308.59
RSM	-117.02	-116.87	-106.10	-98.39	-	-196.09	-634.47	-126.89
Total	-432.37	-504.62	-273.39	23.51	2353.83	39.99	1206.95	239.85
Average	-48.04	-56.07	-30.38	2.61	261.54	4.44		26.65

Source :Table 4.1

The above table shows the level of net WC of selected manufacturing companies. It is widely varied within and among the companies. In most of the year company have positive WC position. The highest level of WC is Rs. 273.81 million of BN in 2008 and the lowest level of WC is negative Rs. 411.93 millions of BPP in 2004. The overall average net WC is Rs. 26.65 million. Out of nine four companies have negative WC. Only five have positive level of WC. The company average column of the table shows that the highest amount of NWC is Rs. 308.59 million of BPP and the lowest level of NWC is Rs. (179.95) m of JSM. The table shows that the yearly average of NWC is in fluctuating trend during the study period. The lowest yearly average was Rs. (56.07m) in 2004 and the highest level of NWC was Rs.261.54 millions in 2007. Expect the year 2006, 2007 and 2008 the average NWC is negative. Huge positive amount of NWC of some financial weak companies leads to positive overall average of NWC. The trend of NWC during the study period is given by graphic method.

Figure: 4.7
Graphic Presentation of NWC



4.7 Cash Conversion Cycle (CCC)

Cash conversion cycle refers to the length of time required to convert raw materials into finished goods and then to sell these goods. It is the length of time from the payment for the purchase of raw material to the collection of account receivable generated by the sales of the final product. In other words it measure the length of time that the firm's funds tied up in WC. CCC is one of the helpful ways to look all the cash flow for the firm. Once the purchase of the raw materials is made, the inventory conversion period determines the average number of days it takes to produce and sells the product. The average collection period determines the average number of days it takes to collect credit sales. Here, the CCC means the difference between operating cycle and payable deferral period, where operating cycle measures the total number of days from purchase to when cash is received. Because the raw materials typically are not paid for immediately, we must also determine how long the firm defers its

payment. The firm's goal should be to shorten its CCC as much as possible without hurting operations. This would improve profit, because the shorter the CCC, the smaller the need for external financing and thus the lower the cost of such financing.

To analyze the CCC first of all inventory conversion period, receivable conversion period and payable deferral period must be calculated. Then after it is easy to calculate CCC because CCC means the sum of ICP an RCP minus PDP. Here, because of the lack of necessary information, data and standard industry average, researcher has used company overall average as the standard for comparisons or analysis.

4.7.1 Inventory Conversion Period (ICP)

It is the length of time that is required to convert raw materials into finished goods and then to sell these goods. The period indicates the efficiency of the firm in selling its product. ICP is calculated by dividing number of days in a year by inventory turnover, where inventory turnover means how rapidly the inventory is turning into receivable (Cash) through sales and it is calculated by dividing sales of the year by inventory level. The ICP shows how rapidly the inventory is turning into receivable through sales. Higher the ICP indicates that it takes long time to convert the inventory into receivable. It also indicates that the companies have poor inventory management system. Lower ICP is the indication of good inventory management because it minimizes the carrying cost associated with inventory keeping as well as the possibility of loss due to damage, stolen, obsolesces and so, on. Higher level of inventory tie-up of funds, reduce profit and increase cost. So optimum balance level should be maintained. The calculated ICP of selected manufacturing companies is give below.

Table : 4.15
Inventory Conversion Period of Selected Nepalese
Manufacturing Companies

(in Days)

Year Company	2003	2004	2005	2006	2007	2008	Average
BN	133.31	117.12	123.81	124.56	133.88	105.35	123.01
NLO	83.23	78.00	144.08	51.07	-	134.31	98.14
NBG	114.65	171.54	206.89	105.82	-120.51	64.05	90.41
RJM	84.75	42.36	47.05	40.96	53.44	51.37	53.32
JSM	-	96.17	99.40	49.67	107.78	77.36	86.08
AVU	-	67.59	60.42	37.77	432.19	132.23	146.04
ULNL	41.23	27.58	68.63	42.06	33.01	43.49	42.66
BPP	98.17	93.65	72.62	97.43	93.76	-	91.12
RSM	5.83	157.56	69.06	95.00	-	75.67	80.63
Average	80.17	94.62	99.11	71.59	104.79	85.48	90.16

Source: Annex 9.

The above table shows the ICP of selected Nepalese manufacturing companies during the study period 2003 to 2008. The ICP is widely varied within and among the companies. The ICP table shows that ICP is the highest for AVU (432 days) in 2007 and the lowest for RSM (6days) in year 2003. The trend of ICP is fluctuating during the study period. It seems that among nine companies ULNL and RJM has satisfactory inventory management system than other, because their ICP is lower than two months.

From the above table, the overall average of ICP is 90 days which represents the ICP of Nepalese manufacturing companies. The vertical average column shows the company average of ICP. It is higher for AVU (146.04 days) followed by BN (123.01 days), NLO (98.14 days), BPP (91.12 days), NBG (90.41 days), JSM (86.08 days), RSM (80.63 days), RJM (53.32 days) and ULNL (42.66 days) respectively. Out of nine companies only three (JSM, RSM, RJM and ULNL) have lower ICP than overall average and other five companies have higher average ICP than overall industry average. Similarly the horizontal

average shows the yearly average of ICP. The year wise average ICP shows that It is slightly varied around the overall average and it is in fluctuating trend during the study period.

4.7.2 Receivable Conversion Period (RCP)

RCP is the length of time required to convert the firm's receivable into cash, that is to collect cash following a sales. It is also called the days sales outstanding (DSO). It is also an important financial tool for measurement of cash conversion cycle. Generally the longer collection period indicates the inefficient management or liberal credit policy. Creation of receivable is important to increase in sales but too much receivable amount is harmful for companies. Receivables amount is generally more in manufacturing companies as compared to non manufacturing companies. Receivable collection period is calculated by dividing the receivable amount by sales per day. The RCP of selected manufacturing companies is given below.

Table : 4.16
RCP of Selected Nepalese Manufacturing Companies

(in Days)

Year Company	2003	2004	2005	2006	2007	2008	Average
BN	53.73	67.58	69.81	77.43	51.95	70.72	65.20
NLO	162.61	222.69	242.00	180.08	-	232.86	208.05
NBG	89.21	100.66	43.99	25.36	-59.09	98.49	49.77
RJM	34.19	36.40	22.91	19.70	11.96	16.69	23.64
JSM	-	23.96	23.57	10.03	17.64	14.54	17.95
AVU	-	61.33	31.68	10.91	23.59	28.14	31.13
ULNL	8.10	10.27	7.51	9.36	25.41	15.29	12.66
BPP	47.35	38.16	27.95	36.98	33.82	-	36.85
RSM	21.14	35.92	15.23	20.46	-	26.00	23.75
Average	59.48	66.33	53.85	43.37	15.04	62.84	52.11

Source : annex 10.

The above table shows the RCP of selected manufacturing companies during the period from 2003 to 2008. It is varied among and within manufacturing companies. Nepalese manufacturing sectors have followed their own (different) credit policy, so, they have different RCP and varied among them. The highest RCP is 242 days in 2005 of NLO and the lowest is 7.51 in 2005 of ULNL. The overall average RCP of Nepalese manufacturing companies is 52 days. The company average of selected manufacturing companies is also shown in above table. Out of nine only BN and NLO have higher RCP than overall. RCP of AVU is 52 days equal to industry average. NLO has too much high level of RCP. It is approximate 209 days. Other seven companies have lower level of RCP than overall average. The company average is 65 days of BN, 209 days of NLO, 50 days of NBG, 24 days of RJM, 18 days of JSM, 31 days, of AVU, 13 days of ULNL, 37 days of BPP and 24 days of RSM, which shows that the lowest RCP is 13 days of ULNL and followed by JSM 18 days. The table also shows the yearly average of RCP from 2003 to 2008. The trend of RCP is fluctuating but around the overall average during the study period. It is 59 days,

66 days, 54 days, 43 days, 15 days and 63 days for year 2003 to 2008 respectively. The highest period or RCP is 66 days in 2004.

The RCP measures the quality of debtors since it indicates the speed of their collection. The shorter the collection period, the better the quality of debtors, lower the carrying or collecting expenses. The long RCP implies a very liberal and inefficient credit policy and its poor performance of credit management. Delay the collection of receivable higher the chances of bad debts, but in other hand the low collection period is also unfavorable which reduces the value of sales because it indicates a very tight (restrictive) credit and collection policy. By the fear of bad debts the company chooses only to those customers for credit transaction whose financial condition are good (sound) and whose goodwill is high in market. In such kind of credit policy, a company gets success in avoiding (reduce) the bad debts but their sales will also decrease and overall profit is also decreased. So, the firm should relax its credit policy to increase the sales level and improve profitability by proper management of receivable. For above analysis of Nepalese manufacturing companies BN and NLO have longer RCP which is the sign of poor receivable management or credit policy. The overall industry average 52 days (approx. two month) is very reasonable (favorable) RCP for Nepalese manufacturing companies.

4.7.3 Payable Deferral Period (PDP)

It is the length of time between the purchase of raw materials and labour and the payment of cash for them. It is also called payable conversion period. (PCP). By lengthening the PCP, CCC can be shortened. It indicates the speed of credit payable. A high /long PCP is favorable for the company but too much long period hampers the credit worthiness of the company. Lower PDP indicates the firm's credit payment capacity and it increases credit worthiness of the company. The PDP will increase due to the delay in payment of the obligation. Any organization should try to maintain optimal payable policy because wrong decision of payment system reduces the profitability and leads to bankruptcy.

The PDP is calculated by dividing payable by daily credit purchase but here the lack of actual information of credit purchase or other payable, cost of goods sold is used in place of credit purchase. So, here for this study, PDP is calculated by dividing actual payable by cost of goods sold and multiplied by number of days in a year. The table shows the PDP of selected Nepalese manufacturing companies during the study period.

Table :4.17
PDP of Selected Nepalese Manufacturing Companies

(in days)

Year Company	2003	2004	2005	2006	2007	2008	Average
BN	67.15	33.73	66.52	72.4	27.1	117.73	64.10
NLO	0	0	0	120.12	-	56.13	35.25
NBG	17.11	6.7	24.37	16.86	25.4	24.56	19.17
RJM	19.24	41.18	46.78	47.32	38.28	6.49	33.22
JSM	9.85	2.08	1.91	5.01	4.32	140.15	27.22
AVU	-	17.75	23.37	20.94	21.35	302.90	77.26
ULNL	-	36.04	31.26	33.36	104.08	124.71	65.89
BPP	55.85	47.63	40.08	48.93	126.62	-	63.82
RSM	14.98	94.83	19.77	27.01	-	137.69	58.86
Average	26.31	31.10	28.23	43.55	49.59	113.80	49.42

Source : annex 11.

The above table shows the PDP of selected manufacturing companies for the study period 2003 to 2008. The overall average of the PDP is 49 days. The PDP is varied among and within individual companies. The longer period of PDP is 303 days of AVU in 2008 and the shorter Period is 2 days of JSM in 2005. There is no any payable amount of NLO in year 2003 to 2005, so, PDP is equal to zero . The table shows that the PDP of selected companies is varied and fluctuating trend. The yearly average PDP shows that the highest PDP is 114 days in 2008 and the lowest is 26 days in 2003. In year 2007 and 2008 the PDP is higher than overall average and other four years PDP are lower than overall but the fluctuating trend is not so much. Similarly, the company average of PDP

is also examined from the table. The highest PDP is 77 days of AVU and the lowest PDP is 19 days of NBG. The overall industries PDP is 49 days. Out of nine selected manufacturing companies. BN, AVU, ULNL, BPP and RSM have higher PDP than overall industry average and other have lower than overall average. Any firm might have an average 30 days to pay for its payable. Higher PDP indicates that the firms takes large time to pay its obligation. Here, overall PDP 49 days which is more than approximate one month. So, the PDP of Nepalese manufacturing companies seems to be not too much satisfactory.

4.7.4 Analysis of Cash Conversion Cycle

CCC Shows that how much time does it takes to convert the inventory into finished goods, receivable into cash, and to repay its obligations generated by the purchase of materials. The detail discussion about CCC has already been done in section 4.7. So, here the researcher is going to analyze the CCC of Nepalese manufacturing companies. The calculated CCC of selected manufacturing companies is given below.

Table : 4.18

**Cash Conversion Cycle/ Period of selected Manufacturing Companies of Nepal
(in days)**

Year	2003	2004	2005	2006	2007	2008	Average
BN	119.89	150.97	127.11	129.59	158.73	58.34	124.11
NLO	245.84	300.69	386.08	111.03	-	311.04	270.94
NBG	186.76	265.50	226.51	114.32	-205.00	137.97	121.01
RJM	99.69	37.58	23.18	13.34	27.11	61.57	43.75
JSM	-9.85	118.05	121.06	54.69	121.11	-48.26	59.47
AVU	-	111.16	68.74	27.74	434.43	-142.53	99.91
ULNL	49.33	1.81	44.88	18.06	-45.66	-65.93	0.41
BPP	89.66	84.18	60.49	85.48	0.97	-	64.15
RSM	11.99	98.65	64.52	88.45	-	-36.01	45.52
Average	99.16	129.84	124.73	71.41	70.24	34.52	92.14

Source: Annex 12

The above table shows the CCC of selected manufacturing companies. The overall CCC is 92 days which represents the CCC of Nepalese manufacturing companies. The CCC is long but satisfactory for manufacturing sectors. It is more than three months. Long CCC affects the Firms liquidity position. The CCC of Nepalese companies seems to be widely varied. The highest CCC is 271 days of NLO and the lowest CCC is 1 day of ULNL. Out of nine selected manufacturing companies BN, NLO, NBG and AVU have higher CCC than industry average and other five companies RJM, JSM, ULNL, BPP and RSM have lower (Shorter) CCC than overall average CCC.

To summarize the above analysis, the CCC of selected manufacturing companies is widely varied within and among the (individual) companies. Some companies have lower CCC due to maximum delay in paying debt and quick collection of receivable. Longer CCC are harmful (worse) for the company. Longer CCC means, even the strong liquidity position of the firm, firm could not pay its obligation in time and need to take addition loan to operate daily transaction. The table shows negative CCC of ULNL in 2007 and 2008, AVU in 2008, JSM in 2008 and NBG in 2007 which is not good for the companies. It off-set the credit worthiness of the firm because negative CCC means day in payment of obligation. The short CCC is favorable for company, So, the CCC must be reduce if possible. It can be shortened by reducing ICP by processing and selling goods more quickly by reducing RCP by speeding up collection and by lengthening PDP by slowing down the firm's own payment. The RCP and PDP of Nepalese manufacturing companies is better but ICP is little long i.e. 90 days. Because of the longer ICP, CCC of Nepalese companies. is long i.e. 92 days. To reduce the CCC, Nepalese manufacturing companies must reduce their ICP by processing and selling goods more quickly. (Further suggestion will be stated in chapter five).

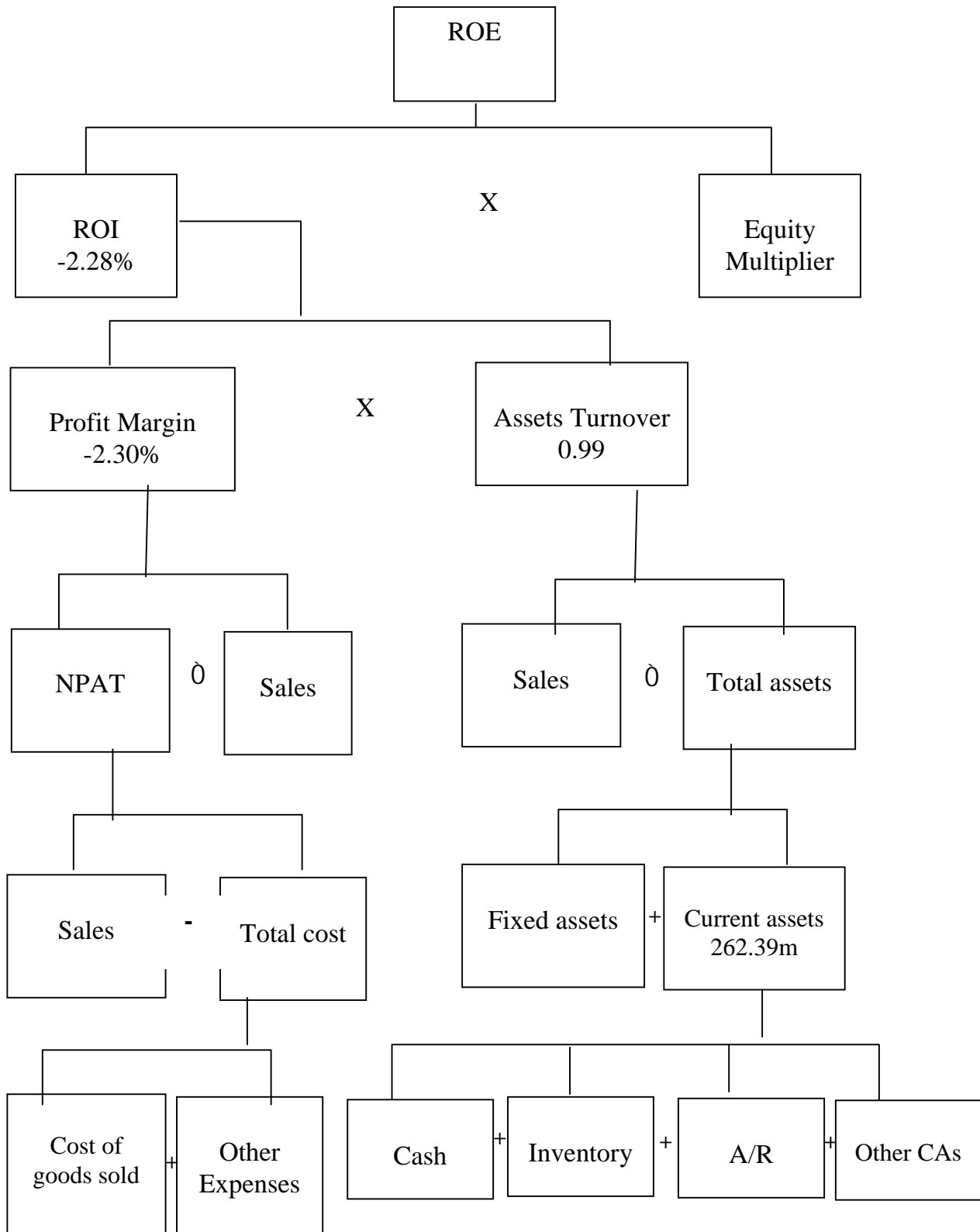
4.8 Analysis of Du-Pont System

The Du-Pont system of financial statement analysis is developed by the financial experts of the Du-Pont company by putting together the effects of profitability, investment and the liquidity ratios. The Du-Pont system reveals the manner in which activity ratios and profit margins on sales interact to determine the profitability of assets. According to Du-Pont system change in any variable either in assets or in total cost items have a direct impact on return on equity. Profit and return on investment depends upon control of costs and investment. If cost are high profit margin on sales fall. If investment is not control or high, turnover of assets also declines. So this tool used to show the relationship between return on equity (ROE), assets turnover and profit margin.

The Du-pont chart given below, which defined, ROE is a product of return on assets (ROI) and equity multiplier and total assets turnover. The right side of the chart shows the turnover ratios and left side of the Du-pont chart shows the profit margin on sales.

Chart :4.1

Analysis of Du-Pont System of Nepalese Manufacturing Companies



The chart shows, the turnover position of Nepalese manufacturing companies is 0.99 times, which is calculated by average sales divided by total assets. The profit margin of sales is negative 2.30% . Multiplied together turnover and profit margin has produced return on investment which is equal to negative 2.28%. The negative return in investment shows the very poor financial performance of Nepalese manufacturing companies. The profit margin and overall profitability of Nepalese manufacturing industry seems negative. Out of nine, five companies (NBG, JSM, AVU, BPP and RSM) have negative profit, which leads to overall negative Profitability of companies. Main focus of these study is on WC management, so the researcher are considering the effect of the level of CAs. In this study the researcher wants to see the effects of increase in level of CA, to overall profitability, by keeping other things constant. To analyze the effect on CAs to profitability first the growth rate of CAs of Nepalese manufacturing sectors has to be calculated.

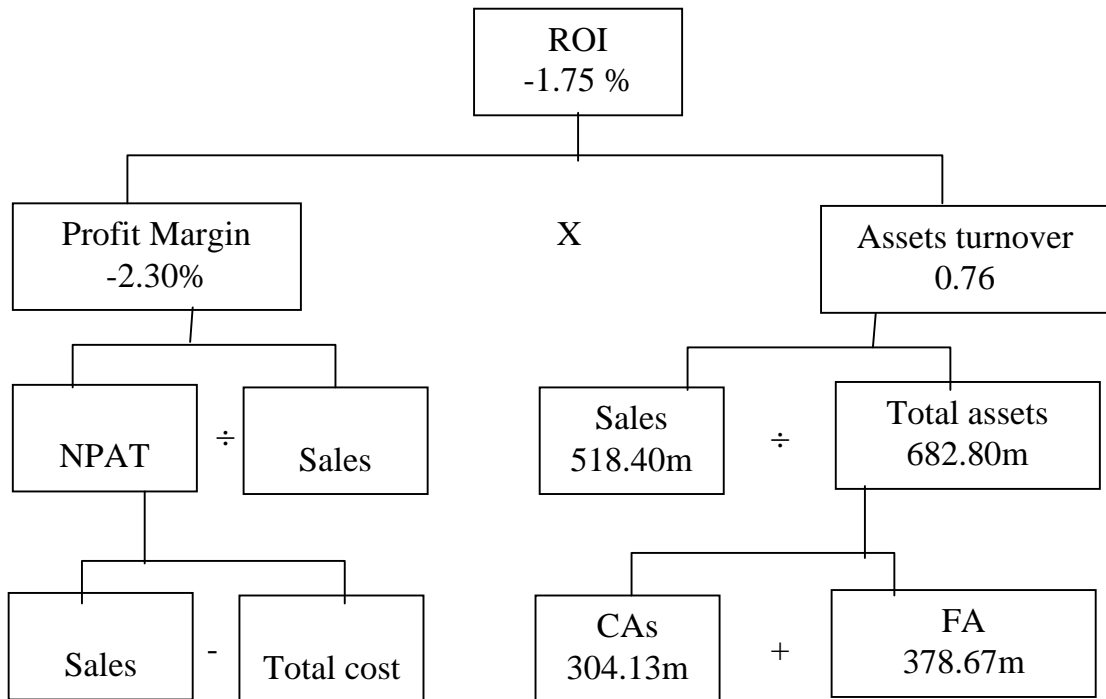
Here, the average CAs level in 2003 = Rs.190.39m.

The average CAs level in 2008 = Rs.262.39m

$$\text{growth rate} = \left(\frac{262.39}{190.39} \right)^{1/5} - 1 = 6.63\% \text{ or } 7\% \quad (\text{approximate})$$

Now, the level of CAs after increase equal to $284.23 \times 7\% = \text{Rs. } 304.13 \text{ million}$

Chart 4.2



(Du-pont chart after increase in the level of CAs by 7%).

The above chart shows the position of ROI after increase in CAs level. According to Du-pont system, if there is increases in level of assets, the turnover will decrease which means ROI also decrease but if the profit is negative additional increase in CAs increase the profit. Here the level of CAs has increased by 7%. This increase leads to the negative effect on ROI, which is reduced to negative 1.75% from negative 2.28% because profit is negative. Here when the CAs is increase by 7% the profit (loss) is reduced by 0.53% so, Nepalese manufacturing companies can reduce losses by using higher level of CAs.

Above analysis of Du- Pont system (i.e. after change in assets level) shows that change in any variables of cost, assets and sales items have direct impact on ROI.

4.9 Analysis of the Relationship of WC Variables

The use of financial tools has already given in previous section for analysis of various variables which determines the WC management. But to make the analysis more meaningful certain statistical tools have been used to see how far the relationship between variables provided meaningful implication or not. Statistical methods are the mathematical techniques used to facilitate the analysis and interpretation of numerical data secured from group of individual or group of observation from a single individual. So, to analyze the relationship of WC variables, statistical tools have been used because statistical tools helps to define relationship between various variables and it help to predict unknown variables with the help of known variables. Here, the researcher has used correlation coefficient method and probable error (as statistical tools) to show the relationship between the following.

(i) Relationship between CAs and CLs

To show the relation between CAs and CLs Karl's Pearson's correlation coefficient (r) is determined. For this it is assumed that CAs and CLs are interrelated variable. The calculation of correlation between CAs and CLs based on yearly average are shown in annex 13.

By analyzing the correlation between CAs and CLs the researcher wants to determine whether there is relationship between them or not. i.e. if the level of CAs change there will change in CLs or not. The value of correlation (r) equal to 0.155 shows that there is positive correlation between CAs and CLs, which means increase in CAs brings increase in CLs and Vice versa. The degree of reliability of computed correlation can be judged with the help of its probable error. Here the probable error is 0.269. So, the value of r is smaller than P.E. ($r < P.E.$) . The relationship between CAs and CLs is not significant.

(For detail calculation of above value see annex 13)

(ii) Relationship between Receivable and Sales

The correlation coefficient between receivable and sales is negative 0.27, which shows that there is negative correlation between sales and receivables. Increase in sales will decrease in level of receivable and vice-versa. To test the statistical significance of the calculated value of correlation, probable error method is used. The value of probable error is 0.082 Since $r < .PE$. So, the relationship between Receivable and Sales is not significant.

(for detail calculation of above value, see annex 14).

(iii) Relationship between Sales and Inventory

The value of correlation between sales and inventory is -0.255 which shows that there is negative correlation between inventory and sales. Increasing sales will leads to decrease in inventory level or vice-versa. The value of P.E. is 0.257, which is higher than the value of 'r' [i.e. $r < .PE$, = $-0.255 < 0.257$] shows that calculated value of 'r' is not significant which means, however, the variables are correlated, it is not sure that if sales/inventory increases the level of inventory/sales also will increase or vice-versa.

(for Detail Calculation of above value, see annex 15)

(iv) Relationship between Net WC and Sales

To show the relationship between NWC and sales, Pearson's correlation coefficient (r) method is used. The correlation value is -0.469 means there is high degree of negative correlation between sales and WC, which shows that increase in NWC/sales level brings decrease in sales /NWC or vice-versa. The degree of reliability of computed correlation can be judged with the help of its probable error. Here the value of probable error is 0.215. The value of r is smaller than P.E. So, the relationship between NWC and Sales is not significant

(for detail calculation see, annex 16)

(v) Relationship between Net profit and NWC

The calculated correlation coefficient value (r) of net profit and NWC based on yearly average is 0.092, which shows there is positive relationship between these two variables. Since $r < P.E.$ (i.e. $0.092 < 0.273$), the value of ' r ' is not significant. Though there is positive relationship between NWC and profit, it is not sure that if the volume of NWC increase, then net profit will also increase or not. Increase in the level of NWC may also cause to reduce in level of NPAT, because the relationship is significant.

(See annex 17 for detail calculation)

(vi) Relationship between CAs and Sales

The relationship between the inventory and receivable to sales has already analyzed which shows the negative relationship. But they are only the component of CAs, So, now here, the study tries to analyze the relationship between sales and total CAs level. For this purpose, first the correlation coefficient should be analyzed which helps to find out their relation whether positive or negative. The Pearson's coefficient of correlation value (r) equal to -0.472, shows that there is negative correlation between sales and CAs. To test the significance of this value of ' r ' probable error method is use. The value of r is smaller than P.E. ($r < P.E. = -0.472 < 0.214$) . So, the relationship between CAs and Sales is not significant.

(See annex 18 for detail Calculation)

4.10 Issue and Gaps (Problems)

Various issue and gaps are found in the process of analyzing the data which are being faced by Nepalese manufacturing companies during the study period. The major problems related to area of WC management faced by Nepalese manufacturing companies are described in next paragraph.

Management is the backbone of the company. The success and failure of any organization depends upon the management system and managerial capacity or

skill of the managers. Physical resources are not anything without human resources. Although the new technology can be employed, this facilities or technology will be valueless, if the manpower and management system are not skillful. So experienced and skillful managers can be appointed to run organization efficiently. Most of Nepalese manufacturing companies have ineffective manpower system. After the change of government and board of director the managers as well as other personnals are also changed and they appoint their own persons, though they have lack of basic skill and knowledge. So the inappropriate manpower system (i.e. lack of manpower planning) is one of the leading causes of failure of Nepalese manufacturing companies. Due to the lack of experienced financial managers and appropriate financial plan, the financial aspect of Nepalese manufacturing companies is very weak and poor. The assets management system of companies is also inefficient. To run day to day business activities smoothly adequate level of CAs (i.e. gross WC) should be maintained but it has been observed that there is no concrete CAs management and specific WC policy. So Nepalese manufacturing companies have to face shortage of WC. Due to the lack of target for CAs holding in the long run and lack of source of financing most of companies' financial situation is very poor.

In most of the Nepalese manufacturing companies decision are taken randomly and adohic basis in the aspect of WC management because of lack of skillful manpower and proper financial planning. In any organization WC management is very difficult to manage as compared to fixed capital because it fluctuates according to change in business transaction. Nepalese manufacturing companies have not followed specific WC policy and lack of proper financing planning to determine needs of funds and its allocations. There is mismatch between level of CAs and CLs, so the WC level is widely varied among and within companies and leads to poor liquidity position. Negligence in daily operation, ineffective management of inventory, receivable and payable, negative turnover on net WC and fluctuating trend of net working capital show that the management of Nepalese manufacturing companies fail to give same regards and attention to WC as they have given to fixed capital.

High level of cost is one of the major causes of the Nepalese manufacturing companies have incurring continuously loss. Level of cost of goods sold and other expenses of factory operation are very high. Old technology, high level of use of labour instead of employ machine i.e. labour oriented technology, lack of production experience and skill, over staffing, unsystematic purchase and inventory management, misuse of facilities by higher level personnel and more expenses on unproductive sectors are the major causes for high level of expenses or cost of Nepalese manufacturing companies.

Due to the lack of knowledge of capital structure, the source of financing is not properly selected by Nepalese manufacturing companies. They have not planned how much funds to be raised from which source. The capital market is not well developed in Nepal. So, it is difficult to procure the needed funds in time, that's why, they use long term loan (fund) as daily operation when they needed and vice-versa. The funds of reserve are also used in daily operation. And on the other hand due to lack of quick circulation of CAs they are not able to reinvest CAs. The borrowed capital has not invested in income generating assets by Nepalese manufacturing companies, so that they could not increase the sales level and the companies are not able to pay its short term obligation in time. It is also found that Nepalese manufacturing companies borrow higher level of funds as they need and misuse these funds in unproductive sectors because of lack of proper planning of finance or capital structure. This leads them into bankruptcy position.

The operating cycle of Nepalese manufacturing companies is very long due to long ICP as well as RCP. Some manufacturing companies have negative cash conversion cycle due to maximum payable deferral period i.e. delay in paying its obligation. The major cause of long CCC of Nepalese manufacturing companies is that they try to pay its obligation in time as soon possible but they fail to collect its debtors in time. The RCP of Nepalese manufacturing companies show that they follow very liberal credit policy. Long ICP shows that the inventory management system and its turnover position is very poor.

On the basis of the above analysis the finding, gaps or problems of WC management and suggestive recommendation with special reference to WC management of Nepalese manufacturing companies are presented in next chapter.

4.11 Major Findings

Based on the previous analysis, the following major finding are observed:

1. Most of the selected manufacturing companies have followed a conservative working capital policy. From previous analysis it is concluded that Nepalese manufacturing companies have high level of CAs and their cash conversion cycle is long. Most of the selected manufacturing companies operate with higher level of expenses and their earning is low. Most of them have lower level of return by taking higher level of risk. It means that risk return trade off is not matched in Nepalese manufacturing companies. The net working capital turnover ratio is very low in Nepalese manufacturing companies. Though some manufacturing companies (namely RJM and ULNL) have followed aggressive approach. In average majority of the selected Nepalese manufacturing companies (i.e. BN, NBG, JSM, AVU and BPP) have followed conservative approach of working capital.
2. To find out the existing position of working capital management and their financial conditions of Nepalese manufacturing companies various key ratios are calculated in previous chapter.

The ratio of cash to CAs states the percentage of current assets is in the form of cash. It is widely varied among and within companies during the study period 2003 to 2008. The level of ratio indicates the holding of cash. ULNL has the highest level of cash balance ratio i.e. 25.39 % of its CAs and minimum holding ratio is 1.50 % of JSM. The ratio of receivable to CAs is also widely varied among and within individual

companies during the study period. The analysis shows that NLO has the highest ratio of receivable to CAs and JSM has lowest ratio. Similarly, the average ratio of inventory to CAs is 51.12 % of Nepalese manufacturing companies. The highest ratio for AVU and the lowest ratio for NLO. According to this the portion of inventory is higher as compared to cash and receivable in composition of current assets and than followed by receivable and cash respectively.

3. 52.10 percentages of Nepalese manufacturing companies' total assets are current. The percentages ratio of CAs to total assets shows that this ratio is more than fifty percentage. The ratio is varied from 17.69 % (RSM) to 84.28 % of NLO. But yearly average ratios of CAs to total assets are fluctuating trends during the study period. Nepalese manufacturing companies have lower level of net working capital. The overall average level of net working capital of Nepalese manufacturing companies is Rs. 26.65millions. BPP has higher level of net WC and JSM has high negative net WC.
4. Liquidity position of Nepalese manufacturing companies is not so good. The company average ratio is widely varied among manufacturing companies but yearly average lies around overall average. The assets utilization position of Nepalese manufacturing companies is also measured with help of turnover ratio. Higher turnover is always desirable. Here, industry average of CAs turnover is 2.13 times and total turnover is only 0.99 times. So, the CAs utilization rate is better (satisfactory) than total assets utilization rate of Nepalese manufacturing companies.
5. The overall average percentage of net profit margin is negative 2.3%. It means that Nepalese manufacturing companies are suffering from loss or they are in loss position. The negative profit margin 2.3% indicates that there is loss of Rs.0.023 per rupees of sales. The analysis of return on total assets and return on net WC also shows that the Nepalese manufacturing sectors are incurring losses. Out of nine selected

companies five have been incurring losses whereas four have earned profit.

6. The inventory conversion period of Nepalese manufacturing companies is 90 days i.e. overall average value. The ICP is widely varied among the companies. The highest ICP is 146 days for AVU and the lowest is 43 days for ULNL. Out of nine, four (RJM, JSM, ULNL and RSM) have lower ICP than overall average and other five have higher ICP than industry. The overall average receivable conversion period of Nepalese manufacturing companies is 52 days. Out of nine selected companies BN (65days), NLO (208 days) have higher RCP than industry RCP. Receivable conversion period of manufacturing companies is varied among them. NLO has high level of RCP (208days) and the lowest level of RCP is 13 days of ULNL. The payable deferral period of Nepalese manufacturing companies is only 49 days during the study period. The PDP is varied from 77 days of AVU to 19 days of NBG. Out of nine BN, AVU, ULNL, BPP and RSM have higher PDP than overall industry PDP.
7. The cash conversion cycle (CCC) of Nepalese manufacturing companies is 92 days which seems to be longer and not satisfactory. The CCC is widely varied among the companies because of their own management system. The highest CCC is 271 days of NLO and the lowest is 1day of ULNL.
8. Du-Pont system of financing analysis focuses (point out) that change in any variable either in assets or in total cost items have direct impact on return on investment. The product of these two ratio shows that ROI of Nepalese manufacturing companies is equal to negative 2.28%. Other things (variables) remaining constant, the increase in level of assets i.e. CAs, level of total cost and level of sales affects the existing level of ROI. After increase in CAs of Nepalese manufacturing companies by 7% leads negative effects on ROI i.e. ROI is decreased from negative 2.28%

to negative 1.75% or after increase CAs by 7% losses reduce by 0.53%. Only sales level can brought the positive impact on return on investment.

9. The correlation coefficient between CAs and CLs (0.155), receivable and sales (-0.27), inventory and sales (-0.255), net working capital and sales (-0.469), net profit and sales (0.092) and current assets and sales (-0.472) are highly correlated to each other, that means there is negative relationship between these variables. This relation (i.e. correlation value 'r') is statistically not significant because the value of 'r' is lower than probable error.

Chapter V

Summary, Conclusion and Recommendation

5.1 Summary

Industrialization is considered essential for economic development of the country. As a developing country like Nepal, industrialization is the major instrument of progress, modernization and social development. The industrialization of Nepal started only after second world war. Only few industrial sectors (industries) were established at that time but at present there are various industrial sectors, which are operating in Nepal. Manufacturing industry is one of the main income and employment generating sectors of Nepal but the role of Nepalese manufacturing companies in the national economy is not satisfactory. Though, the HMG of Nepal has been emphasizing the development of industries in private sectors through various financial and so many other facilities, the trend of industrial development is very slow because of various problems related to financial side and political situation.

The main purpose of this study is to present and analyze the WC management and its practice in Nepalese manufacturing companies. For day to day operation, appropriate amount and quality of working capital is necessary for manufacturing sectors. Lack of WC and its misuse disturb in daily operation. Working capital management which is concerned with short term financial decision appears to have been relatively neglected in the literature of finance. It is compared as life blood of manufacturing companies which are concerned only with the management of the CAs and CLs of the business. Study on WC management of Nepalese manufacturing companies is an exciting and challenging work because it is a controlling nerve of manufacturing companies. Hence the success and failure of any company depends on working capital management. Manufacturing companies should not have the excess WC because it is the sign of poor management and it affects the profitability as well as wealth maximization. Similarly, due to lack of WC, there is problem in day to day operation. The inefficient management of working capital leads to loss of

profit in the short run but it ultimately leads to the downfall of the companies in the long run.

The accelerating pace of the development of industries in the manufacturing sectors of Nepal has created many managerial problems, one of which is management of WC. Due to the lack of basic knowledge of working capital management most of the manufacturing companies are suffering from great loss. It is well accepted fact that, Nepal has abundant human and natural resources to exploit but at the same time it has inadequate financial resources so, in a country like Nepal it is essential that WC utilization be improved.

The objectives of this study is to appraise the WC management of Nepalese manufacturing companies with respect to cash, credit (receivable), and inventory and to find out their relation with sales and to analyze the liquidity composition of WC, assets utilization and profitability position of selected companies. To accomplish these objectives, this study is concentrated only with the various aspects and components of working capital management of Nepalese manufacturing companies. For this the study covers the period of five years from fiscal year 2003 to 2008 A.D. and includes the data of nine manufacturing companies as sample. The necessary data and information are collected from secondary collection process. The descriptive and analytical method of research design is applied here to complete the research work. The secondary data has been analyzed by using financial and statistical tools. As financial methods ratio, du-pont system and cash conversion cycle, and correlation and regression as statistical methods are used as major tools for analysis.

The level and position of working capital and its components are widely varied and fluctuating trends within and among the selected companies which shows that they do not take WC management seriously. It is found that there is lack of proper co-operation among the various department within manufacturing companies which leads them to high level of cost and reducing the sales level. The turnover and the position of various ratios relating to working capital are not so good and cash conversion cycle is also long because of lack of proper

financial plan. So management should forecast its financial requirement and its allocation field by developing financial plan with the help of up to date data information (system).

5.2 Conclusion

At last, it can be concluded that the management of WC cannot be neglected by mfg companies. It plays the vital role in the daily operation of any firm, thus managers should understand the importance of WC for mfg sectors. It is necessary to understand about the factors affecting the WC needs, which help them to have proper management of WC. Almost of the mfg companies (mfg sectors) of Nepal are suffering from losses. Proper management plan and lack of forecasting capacity, negligence of administrative work, ineffective management system and lack of appropriate financial plan and suitable WC policy are main causes of failure of the Nepalese mfg companies. The investment in CA's and proportion of its components is not so much satisfactory.

The management of Nepalese mfg companies not seriously examine the WC aspect and its management. To examine the WC policy followed by companies, it clearly shows that most of them are following conservative WC approach. The theory of high risk and high return is not applied here. They earned low level of return by taking high level of risk. The liquidity, profitability and turnover position are also unsatisfactory.

Nepalese manufacturing sectors have long CCC i.e. 92 days. The Du-Pont system analysis also shows that the turnover is very low and the profit margin on sales is negative which leads negative ROI. The statistical analysis (correlation coefficient) between the variable of WC of selected mfg companies are negative as well as the coefficient result are not statistically significant between the variables. Due to lack of forecasting ability and capacity and proper financial planning companies are facing various financing problem. Due to the lack of proper WC and CA policy they are suffering from liquidity problem.

Nepalese mfg companies should follow or adopt corrective mechanism to change their existence management system by considering following factors or process such as, to identify the needed fund by developing proper financial plan, developing proper management information system to update every information system which plays vital role in company's decision making level, using or develop control and appraisal system and monitoring the performance, using appropriate financing needs (i.e. combination of short or long term funds) as well as combination of investment in CA and others, preparing effective sales plan and minimizing factory operating and general expenses and so on. By applying the above suggestive recommendation Nepalese manufacturing companies may solve their problems and improve their financial performance as well as WC management in future.

5.3 Recommendation

Recommendations are made on the basis of this study, that is described in following.

1. The level of WC is widely varied and the trend is fluctuating, with in companies which show that the manufacturing companies don't take WC management seriously. There is necessary to formulation of appropriate WC policy because lack of target WC level holding in long run and absence of source of financing, the financial situation or condition of companies is going to be downfall. The companies should adopt such kind of CAs policy that the holding of CAs neither be excessive nor inadequate. So, the components of CAs (cash, receivable and inventory) must be managed effectively.

The main objectives of holding cash are transaction motives, precautionary motives and speculative motives. There should be effective management of cash. But cash management of most of Nepalese manufacturing companies is not so good. They have cash level higher or lower then requirement. If it is more then requirement it increase the overall cost so, it should be invested in short term marketable securities and if there is lack (shortage) of cash the company

may losses its opportunity so, company should try to collect cash from short term source and other which have lower cost of financing.

The level of investment in inventory is higher than other components of CAs. So, for success of companies, there is vital role of effective management of inventory. For the smooth production and sales inventory is very essential. The highly varied amount of inventory shows that there is no any specific inventory management system (policy) of Nepalese manufacturing companies. The effective management of WC depends upon proper management of inventory because it takes larger portion of CAs. For this, companies should adopt appropriate inventory mgmt system and effective sales plan, which helps to reduce the inventory management cost by reducing the problem of overstocking. The management must minimize the inventory management cost by reducing wastage, scarp and loss from stolen by adopting suitable inventory system and develop timely inspection system such as economic order quantity (EOQ) system and ABC inventory system. Manufacturing companies must determine their re-order level (minimum stock level) to protect them from shortage.

2. Nepalese manufacturing companies have not followed the rule of financing policy. It is found that they haven't prepared financial plan and they raise and allocate of funds from which source they got and where they think better to use as adohic basis. They should prepare WC plan and adopt appropriate WC policy. High level of financing cost increases the companies' overall cost which reduces the profitability of company. So, it is better to Nepalese manufacturing companies to determine their financing source from where they got fund and it also needs to consider cost factors.
3. Sales directly affect to the need of CAs or WC. The level of WC will increase if sales level increase. So, to forecast the level of WC or CAs, level of sales will be forecasted. To survive in competitive market condition, effective sales management will be required and for it market

and production situation should also be analyze. The risk is the opportunity for company to make profit, thus the management should not consider (take) it as dangerous. Nepalese manufacturing companies adopt conservative WC policy so, they incurring loss continuously though they bear high risk. Companies should develop portfolio investment policy to reduce risk. Management should develop risk return trade-off policy and try to match between risk and return.

4. Nepalese manufacturing companies are suffering from high cost. Because of high level cost most of the manufacturing companies have incurred continuous losses. Management should give attention towards reducing expenses. Management should try to find out the major cause of high level expenses, such as unnecessary expenses, misuse of facilities, overstaffing, purchasing process, use of old technology and high level of overhead expenses. To solve this problem company should develop the cost control mechanism and provide training to the staff of production department and adjust or use new technology in the field of production to sales level. Nepalese manufacturing companies' operate under capacity which increases their cost so to reduce cost company should utilize their full capacity because mass production automatically reduces per unit cost.
5. In above analysis, it is clearly shown that turnover position of Nepalese manufacturing companies is very low. Total assets and current assets turnover is very low and net working capital turnover is negative so, the assets utilization rate of Nepalese manufacturing companies is very poor. Manufacturing companies with higher turnover of assets need lesser working capital as compared to lower turnover so, Nepalese manufacturing companies should speed their current assets circulating round because speed of operating cycle leads to lesser need of working capital. So, to increase the turnover position companies should increase their sales level and adopt appropriate current assets policy with respect to cash, inventory and receivable.

6. The cash conversion cycle of Nepalese mfg companies is high. The long ICP leads to long operating cycle. It is necessary to Nepalese mfg sectors to reduce their CCC. It can be shortened by reducing ICP by processing and selling goods more quickly, by reducing RCP by speeding up collection and by lengthening PDP by slowing down the company's own payment. But it should be understand that the credit worthiness of the company is to be improved by paying its obligation in time because delay in the payment hampers the credit worthiness. By better utilization and efficient management of inventory and receivable the operating cycle is reduce and it helps to improve overall CCC of Nepalese mfg companies.

7. Skilled and efficient manpower is the basic need for success of manufacturing companies. Nepalese manufacturing companies should increase the efficiency of higher and lower level of employee. So, skill development and management development program should be held. To increase the efficiency of financial manager, account officer, inventory controller (store keeper) sales officer, production manager and other, companies must give frequent training for them. Skilled manpower is one of the ways of reducing operating and other expenses and increases the performance of company. Companies should use new technology to increase performance and reduce cost. Nepalese companies should appoint their manpower on the basis of working capacity and their requirement but not from political background. There should be right man in right place. It is better to establish separate human resource department and to prepare human resource planning.

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ANNEX NO 1

CURRENT ASSETS*(Rs in Million)*

Year Company	2003	2004	2005	2006	2007	2008	Total	Average
BN	353.65	369.41	393.84	506.43	544.18	447.83	2615.34	435.89
NLO	86.52	104.79	97.37	93.49	-	115.11	497.28	82.88
NBG	115.87	162.40	211.77	193.54	154.20	83.63	921.41	153.57
RJM	42.57	60.26	59.97	80.51	76.41	80.13	399.85	66.64
JSM	255.85	284.61	285.61	240.08	264.23	278.56	1608.94	268.16
AVU	184.92	186.28	231.03	248.63	243.54	434.64	1529.04	254.84
ULNL	352.72	451.88	567.58	399.14	589.88	724.24	3085.44	514.24
BPP	216.83	210.16	217.12	248.31	2867.7 0	-	3760.12	626.69
RSM	104.58	259.14	174.45	195.44	-	197.33	930.94	155.16
Total	1713.5 1	2088.9 3	2238.7 4	2205.5 7	4740.1 4	2361.4 7	15348.3 6	2558.06
Average	190.39	232.10	248.75	245.06	526.68	262.39		284.23

ANNEX NO 2

CURRENT LIABILITIES*(Rs. In Millions)*

Year Company	2003	2004	2005	2006	2007	2008	Total	Average
BN	198.46	177.53	268.08	319.14	309.55	174.02	1446.78	241.13
NLO	41.30	46.46	38.01	43.74	-	76.09	245.6	40.93
NBG	164.44	255.09	348.54	346.43	354.74	332.14	1801.38	300.23
RJM	11.97	33.59	38.05	58.04	44.74	59.08	245.47	40.91
JSM	443.70	483.14	490.68	545.34	487.89	237.91	2688.66	448.11
AVU	274.70	335.71	276.26	306.66	306.48	505.11	2004.92	334.15
ULNL	267.72	263.93	354.32	147.31	349.02	543.71	1926.01	321.00
BPP	521.99	622.09	417.64	121.57	533.89	-	2217.18	369.53
RSM	221.60	376.01	280.55	293.83	-	393.42	1565.41	260.90
Total	2145.88	2593.55	2512.13	2182.06	2386.31	2321.48	14141.41	2356.90
Average	238.43	288.17	279.13	242.45	265.15	257.94		261.88

ANNEX NO 3

Net Profit*(Rs. In Millions)*

Company \ Year	2003	2004	2005	2006	2007	2008	Total	Average
BN	62.18	55.91	35.89	48.61	19.37	37.80	259.76	43.29
NLO	9.66	5.08	-2.21	6.22	-	0.31	19.06	3.18
NBG	-21.15	-46.46	-45.03	-13.39	-42.23	-41.51	-209.77	-34.96
RJM	-3.18	0.60	0.94	5.34	4.74	7.17	15.61	2.60
JSM	-36.33	16.16	-29.91	-50.22	-5.29	8.81	-96.78	-16.13
AVU	1.05	-54.08	1.39	14.07	0.30	1.15	-36.12	-6.02
ULNL	119.03	120.59	68.04	42.61	93.17	140.78	584.22	97.37
BPP	-172.34	-110.05	-77.29	-110.24	-77.85	-	-547.77	-91.30
RSM	-32.37	-15.37	27.11	6.80	-	8.67	-5.16	-0.86
Total	-73.45	-27.62	-21.07	-50.2	-7.79	163.18	-16.95	-2.82
Average	-8.16	-3.07	-2.34	-5.58	-0.87	18.13		-0.31

ANNEX NO 4

Sales*(Rs. in Millions)*

Company \ Year	2003	2004	2005	2006	2007	2008	Average
BN	369.35	372.25	415.01	535.65	610.04	632.11	489.07
NLO	107.17	107.33	72.42	135.82	-	84.71	84.57
NBG	186.99	139.96	246.19	421.98	-226.61	111.95	146.74
RJM	161.57	269.90	295.04	422.44	366.74	382.38	316.34
JSM	499.68	649.19	672.63	989.04	474.16	718.95	667.28
AVU	320.51	286.91	363.20	648.20	511.70	644.39	462.48
ULNL	1503.65	1729.14	1541.87	1236.49	1375.31	1524.9	1485.23
BPP	451.64	490.20	653.70	577.93	701.49	-	574.99
RSM	386.17	456.96	654.64	524.42	-	611.38	438.93
Average	3986.73	4501.83	4914.68	5491.96	3812.83	4710.77	518.40

ANNEX NO 5

Cash to CAs

*(in**Percentage)*

Company	Year	2003	2004	2005	2006	2007	2008	Average
BN		0.86	12.95	1.00	5.82	0.98	3.07	4.11
NLO		2.91	0.86	1.86	1.41	-	0.61	1.53
NBG		2.06	3.78	1.31	0.90	1.34	1.38	1.79
RJM		1.12	0.26	0.96	4.80	1.06	1.27	1.58
JSM		0.38	0.34	0.33	3.87	0.79	3.28	1.50
AVU			4.55	7.45	16.57	1.71	0.90	6.24
ULNL		5.80	21.93	1.10	15.62	53.81	54.06	25.39
BPP		11.02	8.53	11.03	5.00	0.18	-	7.15
RSM		10.86	2.59	4.20	1.63	-	4.12	4.68
Average		4.37	6.20	3.25	6.18	8.55	8.59	6.00

ANNEX NO 6

Receivable to CAs

*(in**Percentage)*

Company	Year	2003	2004	2005	2006	2007	2008	Average
BN		15.59	18.92	20.43	22.75	16.18	27.73	20.27
NLO		55.95	63.36	50.00	72.67	-	47.60	57.92
NBG		39.99	24.10	14.21	15.36	24.12	36.62	25.73
RJM		36.04	45.29	31.30	28.72	15.94	22.12	29.90
JSM		-	15.18	15.42	11.48	8.79	10.42	12.26
AVU		-	26.24	13.84	7.90	13.77	11.59	14.67
ULNL		9.59	10.91	5.67	8.06	16.45	8.94	9.94
BPP		27.39	24.72	23.37	23.91	2.30	-	20.34
RSM		21.69	17.59	15.88	15.25	-	22.38	18.56
Average		29.46	27.37	21.12	22.90	13.94	23.43	23.29

ANNEX NO 7

Inventory to CAs

Company \ Year	2003	2004	2005	2006	2007	2008	Average
BN	38.68	32.78	36.24	36.60	41.69	41.31	37.88
NLO	28.64	22.19	29.77	20.61	-	27.46	25.73
NBG	51.40	41.07	66.81	64.09	49.20	23.82	49.40
RJM	89.35	52.70	64.30	59.69	71.24	68.09	67.56
JSM	-	60.93	65.02	56.84	53.73	55.46	58.40
AVU	-	28.92	26.39	27.35	252.24	54.46	77.87
ULNL	48.82	29.31	51.79	36.19	21.38	25.44	35.49
BPP	56.80	60.68	60.74	62.99	6.37	-	49.51
RSM	5.98	77.18	71.99	70.81	-	65.12	58.22
Average	45.67	45.09	52.56	48.35	70.83	45.14	51.12

*(in**Percentage)*

ANNEX NO 8

Total Assets

Company \ Year	2003	2004	2005	2006	2007	2008	Average
BN	820.78	846.02	943.20	1030.1 0	1033.9 7	770.87	907.49
NLO	101.10	126.27	116.81	111.33	-	134.46	117.99
NBG	141.66	186.61	232.25	218.64	193.68	119.10	117.43
RJM	256.46	287.13	292.12	312.92	303.09	305.90	292.94
JSM	846.92	877.28	862.35	1206.1 5	504.43	756.79	842.32
AVU	260.58	273.25	313.10	350.38	343.42	541.50	347.04
ULNL	544.80	631.07	759.54	572.45	813.79	861.53	697.20
BPP	1328.3 5	1324.8 6	1257.1 2	1204.0 2	2922.8 8	-	1607.45
RSM	898.07	1142.4 0	1055.8 7	1048.8 4	-	1036.2 4	1036.28
Average	577.64	632.77	648.04	672.76	818.27	565.80	662.90

ANNEX NO 9

Inventory Conversion Period (ICP)

Company \ Year	2003	2004	2005	2006	2007	2008	Average
BN	133.31	117.12	123.81	124.56	133.88	105.35	123.01
NLO	83.23	78.00	144.08	51.07	-	134.31	98.14
NBG	114.65	171.54	206.89	105.82	-	64.05	90.41
RJM	84.75	42.36	47.05	40.96	53.44	51.37	53.32
JSM	-	96.17	99.40	49.67	107.78	77.36	86.08
AVU	-	67.59	60.42	37.77	432.19	132.23	146.04
ULNL	41.23	27.58	68.63	42.06	33.01	43.49	42.66
BPP	98.17	93.65	72.62	97.43	93.76	-	91.12
RSM	5.83	157.56	69.06	95.00	-	75.67	80.63
Average	80.17	94.62	99.11	71.59	104.79	85.48	90.16

(in Days)

ANNEX NO 10

Receivable Conversion Period (RCP)

Company \ Year	2003	2004	2005	2006	2007	2008	Average
BN	53.73	67.58	69.81	77.43	51.95	70.72	65.20
NLO	162.61	222.69	242.00	180.08	-	232.86	208.05
NBG	89.21	100.66	43.99	25.36	-59.09	98.49	49.77
RJM	34.19	36.40	22.91	19.70	11.96	16.69	23.64
JSM	-	23.96	23.57	10.03	17.64	14.54	17.95
AVU	-	61.33	31.68	10.91	23.59	28.14	31.13
ULNL	8.10	10.27	7.51	9.36	25.41	15.29	12.66
BPP	47.35	38.16	27.95	36.98	33.82	-	36.85
RSM	21.14	35.92	15.23	20.46	-	26.00	23.75
Average	59.48	66.33	53.85	43.37	15.04	62.84	52.11

(in Days)

ANNEX NO 11

Payable Deferral Period (PDP)

Company \ Year	2003	2004	2005	2006	2007	2008	Average
BN	67.15	33.73	66.52	72.4	27.1	117.73	64.10
NLO	0	0	0	120.12	-	56.13	35.25
NBG	17.11	6.7	24.37	16.86	25.4	24.56	19.17
RJM	19.24	41.18	46.78	47.32	38.28	6.49	33.22
JSM	9.85	2.08	1.91	5.01	4.32	140.15	27.22
AVU	-	17.75	23.37	20.94	21.35	302.90	77.26
ULNL	-	36.04	31.26	33.36	104.08	124.71	65.89
BPP	55.85	47.63	40.08	48.93	126.62	-	63.82
RSM	14.98	94.83	19.77	27.01	-	137.69	58.86
Average	26.31	31.10	28.23	43.55	49.59	113.80	49.42

(in Days)

ANNEX NO 12

Cash Conversion Cycle (CCC)

Company \ Year	2003	2004	2005	2006	2007	2008	Average
BN	119.89	150.97	127.11	129.59	158.73	58.34	124.11
NLO	245.84	300.69	386.08	111.03	-	311.04	270.94
NBG	186.76	265.50	226.51	114.32	-	137.97	121.01
RJM	99.69	37.58	23.18	13.34	27.11	61.57	43.75
JSM	-9.85	118.05	121.06	54.69	121.11	-48.26	59.47
AVU	-	111.16	68.74	27.74	434.43	-	99.91
ULNL	49.33	1.81	44.88	18.06	-45.66	-65.93	0.41
BPP	89.66	84.18	60.49	85.48	0.97	-	64.15
RSM	11.99	98.65	64.52	88.45	-	-36.01	45.52
Average	99.16	129.84	124.73	71.41	70.24	34.52	92.14

(in Days)

ANNEX NO 13

Table 1
Calculation of Standard Deviation, Correlation Co-efficient and P.E between the CAs and CL

Year	Current Assets(X)	Current Liabilities (Y)	(X - \bar{X}) x	(Y - \bar{Y}) y	X ²	Y ²	xy
2003	190.39	238.43	-93.84	-23.45	8805.95	549.90	2200.55
2004	232.10	288.17	-52.13	26.29	2717.54	691.16	1370.50
2005	248.75	279.13	-35.48	17.25	1258.83	297.56	612.03
2006	245.06	242.45	-39.17	-19.43	1534.29	377.52	761.07
2007	526.68	265.15	242.45	3.27	58782.00	10.69	792.81
2008	262.39	257.94	-21.84	-3.94	476.99	15.52	86.05
	$\bar{X} = 284.23$	$\bar{Y} = 261.88$			73575.59	1942.37	1857.95

Karl Person's formula to find out correlation of co-efficient:

Now,

$$t_x = \sqrt{\frac{\Sigma(X - \bar{X})^2}{n}} = \sqrt{\frac{73575.59}{6}} = 110.74$$

$$t_y = \sqrt{\frac{\Sigma(Y - \bar{Y})^2}{n}} = \sqrt{\frac{1942.37}{6}} = 17.99$$

$$\begin{aligned} \text{Correlation coefficient, } r(xy) &= \frac{\Sigma xy}{\sqrt{\Sigma x^2 \cdot \Sigma y^2}} \\ &= \frac{1857.95}{\sqrt{73575.59 \times 1942.37}} \\ &= 0.155 \end{aligned}$$

Now,

$$P.E = \frac{0.6745(1-r^2)}{\sqrt{n}}$$

$$P.E = \frac{0.6745(1-0.155^2)}{\sqrt{6}}$$

$$P.E = 0.269$$

ANNEX 14

Table 2
Calculation of Standard Deviation, Correlation Co-efficient and P.E between the Receivable and Sales

Year	Receivable (X)	Sales (Y)	(X - \bar{X}) x	(Y - \bar{Y}) y	X ²	Y ²	xy
2003	40.16	3986.73	-6.62	583.07	43.82	339970.62	3859.92
2004	49.07	4501.83	2.29	-67.97	5.24	4619.92	155.65
2005	40.52	4914.68	-6.26	344.88	39.19	118942.21	2158.95
2006	44.95	5491.96	-1.83	922.16	3.35	850379.07	1687.55
2007	54.00	3812.83	7.22	756.97	52.13	573003.58	5465.32
2008	51.96	4710.77	5.18	140.97	26.83	19872.54	730.22
	$\bar{X}=46.78$	$\bar{Y}=4569.80$			170.57	1906787.95	4877.33

Now,

$$t_x = \sqrt{\frac{\Sigma(X - \bar{X})^2}{n}} = \sqrt{\frac{170.57}{6}} = 5.33$$

$$t_y = \sqrt{\frac{\Sigma(Y - \bar{Y})^2}{n}} = \sqrt{\frac{1906787.95}{6}} = 563.74$$

$$\text{Correlation coefficient, } r(xy) = \frac{\Sigma xy}{\sqrt{\Sigma x^2 \cdot \Sigma y^2}}$$

$$= \frac{-4877.33}{\sqrt{170.57 \times 1906787.95}}$$

$$= -0.27$$

Now,

$$P.E = \frac{0.6745(1-r^2)}{\sqrt{n}} \quad P.E = \frac{0.6745[1-(-0.27)^2]}{\sqrt{6}} \quad P.E = 0.082$$

ANNEX 15

Table 3
Calculation of Standard Deviation, Correlation Co-efficient and P.E between the Inventory and

Year	Inventory (X)	Sales (Y)	(X - \bar{X}) x	(Y - \bar{Y}) y	X ²	Y ²	xy
2003	80.11	3986.73	-42.22	583.07	1782.53	339970.6 2	24617.2 2
2004	103.34	4501.83	-18.99	-67.97	360.62	4619.92	1290.75
2005	127.76	4914.68	5.43	344.88	29.48	118942.2 1	1872.70
2006	113.38	5491.96	-8.95	922.16	80.10	850379.0 7	-8253.33
2007	185.03	3812.83	62.70	756.97	3931.29	573003.5 8	47462.0 2
2008	124.37	4710.77	2.04	140.97	4.16	19872.54	287.58
	\bar{X} = 122.3 3	\bar{Y} = 4569.9 0			6188.19	1906787. 95	27647.1 1

Sales

Now,

$$t_x = \sqrt{\frac{\Sigma(X - \bar{X})^2}{n}} = \sqrt{\frac{6188.19}{6}} = 39.13$$

$$t_y = \sqrt{\frac{\Sigma(Y - \bar{Y})^2}{n}} = \sqrt{\frac{1906787.95}{6}} = 563.74$$

$$\begin{aligned} \text{Correlation coefficient, } r(xy) &= \frac{\sum xy}{\sqrt{\sum x^2 \cdot \sum y^2}} \\ &= \frac{-27647.11}{\sqrt{6188.19 \times 1906787.9}} \\ &= -0.255 \end{aligned}$$

Now,

$$P.E = \frac{0.6745(1-r^2)}{\sqrt{n}} \quad P.E = \frac{0.6745[1-(-0.255)^2]}{\sqrt{6}} \quad P.E = 0.257$$

ANNEX 16

Table 4
Calculation of Standard Deviation, Correlation Co-efficient and P.E between the Net WC and Sales

Year	Net WC (X)	Sales (Y)	(X - \bar{X}) x	(Y - \bar{Y}) y	X ²	Y ²	xy
2003	-48.04	3986.73	-70.39	583.07	4954.75	339970.6 2	41042.3 0
2004	-56.07	4501.83	-78.42	-67.97	6149.70	4619.92	5330.21
2005	-30.38	4914.68	-52.73	344.88	2780.45	118942.2 1	18185.5 2
2006	2.61	5491.96	-19.74	922.16	389.67	850379.0 7	18203.4 4
2007	261.54	3812.83	239.19	756.97	57211.86	573003.5 8	181059. 65
2008	4.44	4710.77	-17.91	140.97	320.77	19872.54	-2524.77
	$\bar{X} = 22.35$	$\bar{Y} = 4569.9$ 0			71807.19	1906787. 95	173600. 88

Now,

$$t_x = \sqrt{\frac{\sum(X - \bar{X})^2}{n}} = \sqrt{\frac{71807.19}{6}} = 109.398$$

$$\dagger_y = \sqrt{\frac{\Sigma(Y - \bar{Y})^2}{n}} = \sqrt{\frac{1906787.95}{6}} = 563.74$$

$$\begin{aligned} \text{Correlation coefficient, } r(xy) &= \frac{\Sigma xy}{\sqrt{\Sigma x^2 \cdot \Sigma y^2}} \\ &= \frac{-173600.88}{\sqrt{71807.19 \times 1906787.95}} \\ &= -0.469 \end{aligned}$$

Now,

$$P.E = \frac{0.6745(1-r^2)}{\sqrt{n}} \quad P.E = \frac{0.6745[1-(-0.469)^2]}{\sqrt{6}} \quad P.E = 0.215$$

ANNEX 17

Table 5
Calculation of Standard Deviation, Correlation Co-efficient and P.E between the Net Profit and Net WC

Year	Net Profit (X)	Net WC (Y)	(X - \bar{X}) x	(Y - \bar{Y}) y	X ²	Y ²	xy
2003	-8.16	-48.04	-7.84	-70.39	61.47	4954.75	551.86
2004	-3.07	-56.07	-2.75	-78.42	7.56	6149.70	215.66
2005	-2.34	-30.38	-2.02	-52.73	4.08	2780.45	106.51
2006	-5.58	2.61	-5.26	-19.74	27.67	389.67	103.83
2007	-0.87	261.54	-0.55	239.19	0.30	57211.86	-131.55
2008	18.13	4.44	18.45	-17.91	340.40	320.77	-330.44
	$\bar{X} = -0.32$	$\bar{Y} = 22.35$			441.48	71807.19	515.87

Now,

$$\dagger_x = \sqrt{\frac{\Sigma(X - \bar{X})^2}{n}} = \sqrt{\frac{441.48}{6}} = 8.578$$

$$t_y = \sqrt{\frac{\Sigma(Y - \bar{Y})^2}{n}} = \sqrt{\frac{71807.19}{6}} = 109.398$$

$$\begin{aligned} \text{Correlation coefficient, } r(xy) &= \frac{\Sigma xy}{\sqrt{\Sigma x^2 \cdot \Sigma y^2}} \\ &= \frac{515.87}{\sqrt{441.48 \times 71807.19}} \\ &= 0.092 \end{aligned}$$

Now,

$$P.E = \frac{0.6745(1-r^2)}{\sqrt{n}} \quad P.E = \frac{0.6745[1-(0.092)^2]}{\sqrt{6}} \quad P.E = 0.273$$

ANNEX 18

Table 6
Calculation of Standard Deviation, Correlation Co-efficient and P.E between the Current Assets and Sales

Year	Current Asset (X)	Sales (Y)	(X - \bar{X}) x	(Y - \bar{Y}) y	X ²	Y ²	xy
2003	190.39	3986.73	-93.84	583.07	8805.95	339970.6 2	54715.2 9
2004	232.10	4501.83	-52.13	-67.97	2717.54	4619.92	3543.28
2005	248.75	4914.68	-35.48	344.88	1258.83	118942.2 1	12236.3 4
2006	245.06	5491.96	-39.17	922.16	1534.29	850379.0 7	36121.0 1
2007	526.68	3812.83	242.45	756.97	58782.00	573003.5 8	183527. 38
2008	262.39	4710.77	-21.84	140.97	476.99	19872.54	-3078.78
	$\bar{X} = 284.2$ 3	$\bar{Y} = 4569.8$ 0			73575.59	1906787. 95	176704. 95

Now,

$$t_x = \sqrt{\frac{\Sigma(X - \bar{X})^2}{n}} = \sqrt{\frac{73575.59}{6}} = 35.533$$

$$t_y = \sqrt{\frac{\Sigma(Y - \bar{Y})^2}{n}} = \sqrt{\frac{1906787.95}{6}} = 563.74$$

$$\begin{aligned} \text{Correlation coefficient, } r(xy) &= \frac{\Sigma xy}{\sqrt{\Sigma x^2 \cdot \Sigma y^2}} \\ &= \frac{-176704.95}{\sqrt{73575.59 \times 1906787.95}} \\ &= -0.472 \end{aligned}$$

Now,

$$P.E = \frac{0.6745(1-r^2)}{\sqrt{n}} \quad P.E = \frac{0.6745[1-(-0.472)^2]}{\sqrt{6}} \quad P.E = 0.214$$