

**WORKING CAPITAL MANAGEMENT OF  
BOTTLERS NEPAL (TEARI) LTD.  
BHARATPUR, CHITWAN**

**Submitted by:**

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Master's in Business Studies (MBS)**

**Ratnanagar, Chitwan**

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# **RECOMMENDATION**

This is to certify that the thesis

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**Working Capital Management of  
Bottlers Nepal (Terai) Ltd.  
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has been prepared as approved by this department in the prescribed format of faculty of management. This thesis is forwarded for evaluation.

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We have conducted the Viva-Voce examination of the  
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and found the thesis to be the original work of the student and written  
according to the prescribed format. We recommended the thesis to be  
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## DECLARATION

I hereby declare that the work done in this thesis entitled **Working Capital Management of Bottlers Nepal (Terai) Ltd. Bharatpur, Chitwan**, submitted to Shaheed Smriti Multiple Campus, Faculty of Management, Tribhuvan University is my original work. It is done in the form of partial fulfillments of the requirement of the degree of Master of Business studies (M.B.S.) under the supervision and guidance of Mr. Dipak Chandra Ghimire, Lecturer of Shaheed Smriti Multiple Campus.

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## ABBREVIATIONS

ACP	-	Average Collection Period
BN(T)L	-	Bottlers Nepal (Terai) Limited.
BNL	-	Bottlers Nepal Limited.
BSFL	-	Birgunj Sugar Factory Limited.
CA	-	Current Assets
CATR	-	Current Assets Turnover Ratio
CCP	-	Cash Conversion Cycle
CL	-	Current Liabilities
COGS	-	Cost of Good Sold
CV	-	Coefficient of Variance
DDC	-	Dairy Development Corporation
FA	-	Fixed Assets
HCCL	-	Himal Cement Company Limited
NLO	-	Nepal Lube Oil Limited
NTDC	-	Nepal Tea Development Corporation
PDP	-	Payable Deferred Period
PEs	-	Public Enterprises
QA	-	Quick Assets
RCP	-	Receivable Collection Period
SD	-	Standard Deviation
TA	-	Total Assets

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the Study

Nepal is an agriculture based country, whose economy is totally dominated by the agriculture sector. About 74% of the total population of the country is based on agriculture. Low productivity of the sector is one of the reasons for Nepal to remain one of the least development countries in the world. Prospects for the economic development will be brighter only if the present structure of the economy with predominant dependence on traditional agricultural can be gradually transferred thorough the process of industrialization. Industrial development can play a high meaningful role in replacing unemployment, substituting of imports through increased production and in bringing about a change in the balance payment situation in favours of the country.

As the industrial and agriculture growth rate is still slow the pace of economic development of Nepal is slow. Mainly the causes for this slow productivity and inefficiency are improper mobilization of resources, low literacy, insufficient investment in the developing activities and difficult geographical structure of the country. To develop a country in a proper manner all the valuable and available resources should be optimally used. It needs proper study, better evaluation and healthy environment to utilize scare resources.

It is believed that in order to achieve security, stability and high standard of living, the countries must be industrialized. The most important reason for embarking on a performance of industrialization is to increase the national income.

Industrialization is a process of economic development in which growing part of the national resources are mobilized to develop technically up to date diversified consumer goods, capable of assuring a high rate of growth for economy as a whole and achieving economic and social progress.

The role of manufacturing industry in the national economy is not satisfactory because of Nepal is under critical point in its modern economic situation. The reason for emphasizing industrialization in Nepal is that industrial development would absorb rural unemployment persons to these fields of production where higher productivity is possible with reducing total agricultural burden.

Realizing the importance of industrialization in the country Nepal Government has given due emphasis on industrial sector, the economic survey report (1990/91) states that ‘the emphasis on industrialization for the creation of enough job opportunities for the people and for raising their economic levels through a considerable increase in gap appears quite relevant, at a time, when the growth of population of the country is pushing the rural economy down to the subsistence level.’

Development plans in Nepal have been emphasizing the development of industries both in public and private sector. In every plan the word industrialization has been mentioned too frequently. It is stated that the private sector hasn’t been able to come forward in industrial investment.

Despite the encourage industrialization in the private sector include financial facilities through financial institution, tax concession and so on. It is stated in various plan documents that private investors are to be encouraged to invest in industries and if they are not interested to invest in establishing any industry, government itself will initiate those industries therefore both private and public sector has been contributing

to our nation. In order to encourage industrialization in private sector, an appropriate type of clear policy and practicable programs based in reality would be required. The development planners have felt that lack of long term industrial development strategy in Nepal has take critical problem in designing and industrial program which in most cases has been a more testing of the projects in the country's development plans.

In this context, industrialization is the major instrument of progress modernization and social development of Nepal. In a country like Nepal where the economy is basically agriculture, the industrial development plays a vital role in economic development. It is because industrial development helps country in many ways. It contributes to the national income. It absorbs the growing labour forces to reduce significantly the disguised unemployment and decreases the development on imports and promotes exports. Then, on the whole manufacturing sector contributes an important ingredient of the Nepal's overall industrial development strategy.

### **1.1.1 Industrial Development in Nepal**

The growth and development of the industries can be traced to some thirteen or fourteen hundred years ago, when Nepal was ruled by Licchivi kings. At that period, especially cottage and small industries were established and operated. Nepal is rich in the skilled of making handicraft goods, wooden goods, statues and art from very beginning. After the beginning of the nineteen century some varieties of goods were used to be imported into Nepal and these kinds of imports are generally lost the effects of ancient's crafts and small industries.

As early as 1935 a development agency named 'Udyog Parisad' was constituted. Which was responsible for accelerating the development of industrial and commercial activities within the country? Immediately in

1936 The Nepal Company Act came into force. And intern various small, medium, and large scale industries were established in the private sector during the late thirties. In the same year Biratnagar Jute mill established with an authorized capital of Rs. 1.6 million and paid up capital of Rs. 0.8 million as a first joint stock enterprise in the country. So the history of public limited company began with Biratnagar Jute Mill limited. The establishment of this enterprise can be considered as a landmark in the history of the industrial development in Nepal. After the establishment of this, other industries were also established and up to 1945 some 20 joint stock companies, manufacturing hand made paper, soap, ceramic, furniture, matches, textile, cigarettes, etc were incorporated. In between 1936-1951, it is stated that altogether 65 companies were established. After the launching of the first five years plan in 1956, industrial policy was formerly announced in 1967, which has undergone a series of revision in subsequent years. During the period of the third plan (1965-1970) an industrial promotion and productivity centre, a joint project of NIDC and HMG/N was established to act an agency for providing technical assistance and appraising industrial projects suitability for the country.

In the beginning of the fourth plan (1970-1975) it was felt that the private sector could not setup all basic and feasible industries, capable of making special contribution to the industrial development of the country.

In 1981 a new industrial policy was declared and the main features of this policy were the all industries were kept open to the private sector except the defence industry. In 1992, industrial policy was declared and this policy is very liberal in respect of registration and other official procedures. After that the private sector's investment as well as foreign investment is made in almost all areas of industries.

According to the census of manufacturing establishment were made by CBS in 1996/97, the total no. of mfg. establishment is 3557 and these manufacturing establishment engages 187316 persons as employees. Out of total 3557 mfg. Establishments 97.55% were in private ownership type and the government ownership type is only 1.01%. It is clear that the portion of government ownership companies to whole mfg. establishment is very small. In order to speed up the process in industrial sector and license requirement system will be relaxed.

The government will play necessary attention to expand the activities of the private sector by developing infrastructure, providing tax rebates and other facilities in investment in large and medium scale industries. Government has already adopted one window policy to facilitate the industrial investment. Government has always encouraged private sector in the investment in manufacturing sector. Clear and simple policies providing definite facilities for a longer period of time are they primary requisites for industrial development. Stable and liberal policies will also encourage foreign investors. Adoption of such policies will significantly help to industrialization at faster rate.

### **1.1.2 Brief introduction of Bottlers Nepal (Terai) Ltd.**

Bottlers Nepal (Terai) Limited (Company) is a public limited company listed in the Nepal Stock exchange Ltd. Incorporated under the companies Act of Nepal. The registered office of the company and the principal place of business are located at Bharatpur Chitwan, Nepal.

Bottlers Nepal (Terai) Limited is a licensed bottler, Marketer and distributor of non-alcoholic beverages products of the coca-cola company. The principal activity of the company is to manufacture and sell soft drinks under the registered trademarks of the coca-cola company.



Bottlers Nepal Limited, a company incorporated in Kathmandu, Nepal is the parent company of Bottlers Nepal (Terai) Limited.

Coca-cola Sabco (Asia) Ltd, a company incorporated in Dubai, UAE which holds 98.16 percent shares of Bottlers Nepal Ltd, is the parent company. And the main company of the product coca-cola is situated in United States of America.

Bottlers Nepal (Terai) Limited has authorised capital of Rs. 12,10,00,000 and it's Issued and paid up capital is also Rs. 12,10,00,000 (ordinary shares of Rs. 100 each.)

## **1.2 Statement of Problem**

For smooth operation of mfg. industry in the short run as well as long run sound financial performance is pre-requisite factor. Most of the manufacturing industry working to achieve the goal of maximizing the wealth of its shareholders. In order to maximize wealth of shareholder, every industry should earn sufficient return from its operation. Earning a steady amount of profit require successful sells activity. The firm has to invest enough funds in current assets for the effective sells activity because sells do not convert into cash immediately.

Working capital management refers to proper management of firm currents assets and currents liabilities recognizing the interaction and inter-relation that exists between them. It is concerned with all decisions and acts that influence the determination of the appropriate level of current assets and their efficient use as well as the choice of methods of financing them. Keeping in view of liquidity, the working capital of manufacturing industry is that portion of its total capital which is put to variable operative purpose and has the characteristics of greater divisibility, liquidity and rapidity of turn over which influence the types

and terms of financing. Hence management of working capital is in itself a decision-making area within the framework of overall financial management. Many empirical studies relating to the performance of manufacturing industries have found that the managerial and operational deficiency have mounted financial irregularities and problem of liquidity emerging from inefficient cash management, defective inventory policy and account receivable management. In most Nepalese mfg. industry, the management of working capital has been misunderstood as the “management of money” and the managers are found over conscious about the working of money rather than its efficient utilization. At the same time, they never thought of the source of working capital. Thus the existing problems in the area of finance are mostly directed towards the management of working capital rather than in any other area. The followings are the research problems of this study:

- ) What is the size of investment in each type of current assets in BN(T)L?
- ) What is the variability in the size of investment in current assets?
- ) What is the motive for holding cash in Mfg. Company like BN(T)L?
- ) Does the WC affect the profitability of BN(T)L?
- ) What is the past and future trend and growth position of variables relation to the working capital?

### **1.3 Objectives of the Study**

The major objective of this study is to examine the management of working capital in Bottlers Nepal (Terai) Limited. The specific objectives of this study are as follows:

1. To analyze the current assets and current liabilities with the working capital practices of BN(T)L and their impact and relationship to each other.

2. To evaluate the liquidity, long-term solvency, assets utilization and profitability position of BN(T)L.
3. To analyze the past and future trend and growth position of variable in relation to the working capital.
4. Based on the findings, to provide the workable suggestion.

#### **1.4 Significance of the Study**

Working capital management is a significant part of business decisions and is of major concern to finance manager. A firm is required to carry adequate amount of working capital so as to carry on the productive and distributive activities smoothly. Thus, holding adequate amount of raw materials in stock ensures uninterrupted production activity. Likewise, sufficient stock of finished goods has also to be maintained in anticipation of future demand and for this purpose the firm would need funds. Goods usually sold on credit do not return cash immediately. The firm will have to arrange for funds to finance accounts receivable for the period until they are collected. Alongside this, a minimum level of cash is required for the ordinary operations of the business opportunities and for absorbing shocks of business vicissitudes. However, these assets will have to be maintained at appropriate level because both surfeit and shortage of working capital is detrimental to the financial health of the enterprise. The excess of current assets is constraint to the all out pursuit of earnings. The lesser the liquid resources held in the firm to satisfy operations requirements, the more can be invested in income-producing fixed assets. This does not imply that the firm should reduce the current assets even below the minimum required level because that would mean interrupted production and sales because of frequent stock outs and inability to sell goods on credit to restrictive credit policy and loss of credit standing in the market owing to failure on the part of the firm to

pay creditors in time. The finance manager is, therefore, in a dilemma between liquidity and profitability. The finance manager has to manage working capital in such way as to maximize profitability of the firm without impairing its liquidity. This calls for settings optimal level of working capital. Setting optimal level of working capital requires an exercise of determining that level of current assets where total cost-cost of liquidity and cost of non-liquidity is minimum. This is why management of working capital calls for careful attention of the finance manager.

Very few studies have performed on the financial performance of Bottlers Nepal limited but, i haven't found that the people studied typically on its working capital management focusing at the branch of Bottlers Nepal (Terai) limited. This study will highlighted about the application of proper working capital management in Nepal specially in Bottlers Nepal (Terai) limited.

The company can follow the suggestions of the study to make their policy and strategy in a more practical and scientific way. This study will highlight and analyze the sense that whether BN(T)L is using the sound WC or not. The study will give guidelines and recommendations for sound working capital management which will certainly increase the efficiency in performance of this company.

### **1.5 Limitation of the Study**

Every research has its own limitations. This study has following limitations:

- a. This study has been limited to the working capital management of BN(T)L.

- b. Basically the data or the financial statement provided by the company are used for analysis, hence, they are of secondary in nature.
- c. The study period is limited only to five fiscal years from 2059/60 to 2063/64 B.S.
- d. Financial and statistical tools are embodied for analyzing the working capital management of BN(T)L.
- e. Above all, there is time constraint as it is only a study to fulfil partial requirement of confining MBS degree.

### **1.6 Organization of the Study**

This study has been organized into five chapters.

The first chapter is the introductory, which deals with background of the study, statement of the problem, objectives of the study, significance of the study and limitation of the study.

The second chapter deals with the review of the literatures relating to working capital management. The available literatures are divided into three sections. The first section deals with the review of books, second section deals with the review of journals and articles and the third section deals with review of dissertations.

In the third chapter, the research methodology employed for the study has been described. It includes introduction, research design, nature of data, data processing procedure, and tools of analysis and definition of key terms.

Thereafter, the acquired data are presented and analyzed through the way of designed methodology and major findings of the study are presented in the fourth chapter.

Lastly, the summary recommendation and conclusion have been presented in the fifth chapter.

A bibliography and appendix have also been included in the last part of the study.

## **CHAPTER TWO**

### **REVIEW OF LITERATURE**

#### **2.1 Introduction**

The working capital management plays the key role in the success and failure of the organization not only in the short run but in the long run also. So working capital is a controlling never centre of business because with the proper control upon it no business organization can run smoothly. As the management of current assets and current liabilities of the business organization is necessary for day-to-day operation. Hence, the management of working capital in Nepalese manufacturing companies is concerned, a number of studies have been undertaken by different management expert and students of MBA have been describing the working capital management of various enterprises.

The purpose regarding standing this chapter here in this study is to review the available literature on working capital management in the context of the Nepalese manufacturing companies and the available information on BN(T)L. This information and literatures provide the bases and inputs to achieve the objective of this study.

#### **2.2 Conceptual Framework**

For the study made easy related review from some books on working capital management are studied.

##### **2.2.1 Concept of working capital**

The well known professor western and Brigham have given the concept of working capital as:

The term working capital originated at a time when most industries were closely related to the processing of agricultural product. At that time, processors process them and sell the finished product at the end of just before the next harvest with relatively low inventories. Bank loan with maximum maturities of one year were used to finance both the purchase and the processing costs and these loans were retired with the process from the sale of the finished products. (Weston J Fred and Brigham F, 1992:267)

Working capital management is usually described as involving the administration of the assets namely cash, marketable securities, receivable and inventories and the administration of current liabilities. It means the working capital management is concerned with the problems that arise in attempting to manage the current assets, the current liabilities and the inter-relationship that exist between them. (Van Horne, James C, 1991:219)

Working capital management is the effective life blood of any business. Hence the management of working capital plays a vital role for existing of any public enterprises successfully. It is the centre on the routine day to day administration of current assets and current liabilities. Therefore, working capital management in the public enterprises is very important mainly for four reasons. Firstly public enterprises must need to determine the adequacy of investment in current assets otherwise it would seriously erode their liquidity base. Secondly they must select the type of current assets suitable for investment so as to raise their operational efficiency. Thirdly, they are required to ascertain the turnover of current assets which determine the profitability of the concerns. Lastly, they must find out the appropriate sources of funds to finance the current assets.

Proper management of working capital must ensure adequate amount of working capital as per need of business firms. It should be in good health and efficiently circulated. To be adequate healthy and efficient circulation of working capital it is necessary that working capital should be properly determined and allocated to its various segments, effectively controlled and regularly reviewed.

"There are specially two concepts of working capital: Gross concept and net concept. The gross working capital simply called as working capital, refers to the firms investment in current assets." (Pandey I M, 1988:325)

Current assets are those assets which can be converted into cash within an accounting year and include cash, short term securities, debtors, bills receivables, inventory and prepaid expenses. The term net working capital refers to the difference between current assets and current liabilities. Current liabilities are those claims of outsiders, which are expected to be matured within an account year. It includes creditors, bills payable, Bank overdraft and outstanding expenses. Net working capital can be negative or positive. A positive net working capital will rise when current assets exceed current liabilities. A negative net working capital occurs when current liabilities are in excess of current assets.

## **2.2.2 Types of working capital**

Working capital can be classified into two parts permanent and fluctuating working capital. These two types of working capital are necessary for continuous production and sales without any interruptions.

### **2.2.2.1 Permanent Working Capital**

Permanent working capital refers to that level of current assets, which required on a continuous basis over the entire year. A manufacturing concern cannot operate regular production and sales functions in the



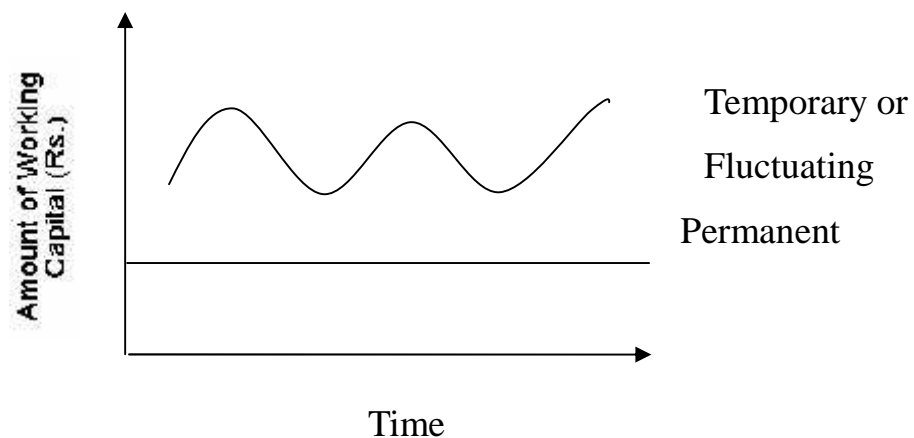
absence of this portion of working capital. Therefore, a manufacturing concern holds of certain minimum amount of working capital to ensure uninterrupted production and sales functions. This portion of working capital is direct related to the firm's expansion of operation capacity.

### 2.2.2.2 Variable Working Capital

Variable working capital represents that portion of working capital, which is required over permanent working capital. If the nature of production and sales of a firm is directly related to seasonal variation, it should stock extra raw materials, work in process, and inventory of finished goods. Therefore, this portion of working capital depends upon the nature of firm's production, relation between labour and management. If a firm has sound management of this portion of working capital, it can easily win the other competitors in the cut-throat market. The permanent and variable working capitals are shown in figure as follows:

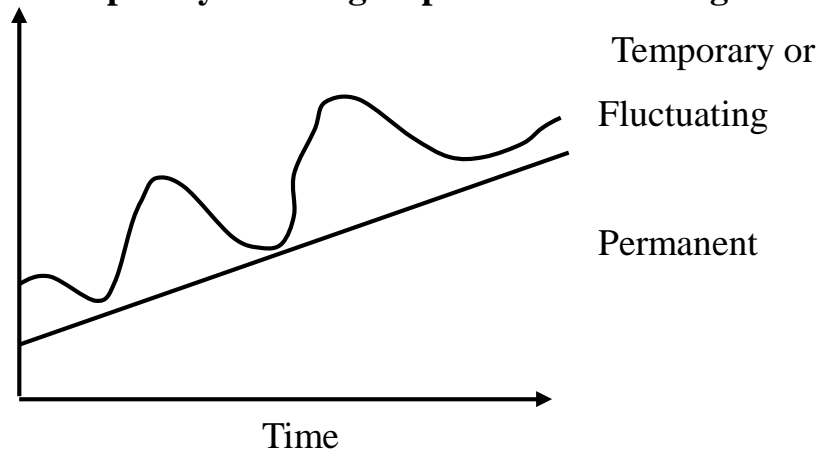
**Figure No. 2.1**

### **Permanent and Temporary Working Capital for an Established Firm**



**Figure No.2.2**

**Permanent and Temporary Working Capital for a Growing Firm**



*Source: Pandey I.M(1988), Page No.:329*

### **2.2.3 Working Capital Policy**

Working capital policy refers to the firm basic policies regarding:-

- ) Target levels of for each category of current assets
- ) How current assets will be financed.

So, first of all, in working capital management, firm has to determine how much funds should be invested in working capital in gross concept. Every firm can adopt different financing policy according to the financial manager's attitude towards the risk return trade off.

One of the most important decisions of financial manager is how much current liabilities should be used to finance current assets. Any firm has to find out the different sources of funds for working capital. Thus, working capital policies regarding to the level of each category of current assets and their financing are discussed in the insuring part of this section.

### **2.2.4 Working Capital Investment Policy**

Current assets investment policy refers to the policy regarding the total amount of current assets to be carried to support the given level of sales.

There are alternative currents assets investment policies:-

- ) Fat Cut Policy
- ) Lean and Mean Policy
- ) Moderate Policy

➤ **Fat Cut Policy**

This is known as relaxed current assets investment policy. In this policy, the firm holds relatively large amount of cash, marketable securities, inventory and receivable to support a given level of sales. This policy creates longer inventory and cash conversion cycles. It also creates the longer receivable collection period due to the liberal credit policy. Thus, this policy provides the lowest expected return on investment with lower risk.

➤ **Lean and Mean Policy**

In lean and mean policy, a firm holds the minimum amount of cash, marketable securities, inventory and receivables to support a given level of sales. It is risky policy. This policy tends to reduce the cash conversion and receivable conversion cycle. Under this, firm follows a tight credit policy and bears the risk of losing sales volume.

➤ **Moderate Policy**

In moderate policy, a firm holds the amount of current assets in between the relaxed and restrictive policies. Both risk and return are moderate in this policy.

### **2.2.5 Working Capital Financing Policy:**

It is the manner in which the permanent and temporary current assets are finance. Current assets are financed with funds raised from different sources. But cost and risk affect the financing of any assets. Thus, current assets financing policy should clearly outline the sources of financing of

current assets. There are three variants aggressive, conservative and maturity matching policies of current assets financing.

➤ **Aggressive Policy**

In aggressive policy, the firm finances a part of its permanent current assets with short-term financing and rest with long-term financing. In other words the firm finances not only temporary current assets but also a part of the permanent current assets with short-term financing. In general, interest rate increases with time i.e. the shorter the lower the interest rate. It is because lenders are risk adverse and risk generally increases with the length of lending period. Thus, under normal if the firm borrows on a short term financing rather than long term financing. On the other side if the firm finance its permanent current assets by short-term financing, then it runs the risk of renewing the borrowing again and again. This continued financing exposes the firm to certain risk. It is because, in future interest expenses will fluctuate widely, and also it may be difficult for the firm to raise the funds during the stringent credit period. In conclusion, there is higher risk, higher return and low Liquidity position under this policy.

➤ **Conservative Policy**

In conservative policy the firm uses long term financing to finance not only fixed and permanent current assets, but also part of the temporary current assets. It means the firm depends upon the long-term sources for financial needs. This policy leads to high level of current assets, with long conversion cycle, low level of current liabilities and higher interest cost. The risk and return are lower than that of aggressive policy and liquidity position is higher than that of aggressive one. The risk adverse management follows this policy.

### ➤ **Maturity Matching Policy**

In this policy the firm finances the permanent current assets with long-term financing and temporary with short-term financing. It means that the firm matches the maturity of financing source. It lies in between the aggressive and conservative policies. It leads to neither high nor low level of current assets and current liabilities.

### **2.2.6 Need for Working Capital**

We know that firms aim at maximizing the wealth of shareholders. The firm should earn sufficient return from its operation. The extent to which profit can be earned naturally depends upon the magnitude of sales among the other things. For constant operation of business, every firm need to hold the working capital components-cash, receivable, inventory etc. Therefore every firm need working capital to meet the following motives.

#### ➤ **The Transaction Motive**

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

#### ➤ **The Precautionary Motive**

Precautionary motive is the need to hold cash and inventories to guard against the risk of unpredictable change in demand and supply forces and other factors such as strike, failure of important customer, unexpected slow down in collection of account receivable, cancellation of some order for goods and some other unexpected emergency. Thus, the firm needs to working capital to meet any contingencies in future.

### ➤ **The Speculative Motive**

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

- Opportunities of profit making investment,
- An opportunity of purchase raw materials at a reduced price.
- To speculate on interest rate and
- To make purchased at favourable price etc.

Thus, the firm needs the working capital to meet the speculative motive.

### **2.2.7 Financing of Working Capital**

Every manufacturing concern or industry requires additional assets whether they are stable or growing conditions. When the growing firms wants to generate sustained normally require fixed capital as well as working capital. Additional portion of working capital is approximately dominated by the same rate as sales. But this portion of capital requirement depends upon the nature of the firm. Therefore, the most important function of financial manager is to determine the level of working capital and to decide how it is to be financed. Financing of any assets is concerned with two major factors- cost and risk. Therefore, the financial manager must determine an appropriate financial mix, or decide how current liabilities should be used to finance current assets. However, a number of financing mixed are available to the financial manager. He can resort generally three kinds of financing.

- ) Long-term financing
- ) Short-term financing
- ) Spontaneous financing

### ➤ **Long-term Financing**

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

### ➤ **Short-term Financing**

Firm must arrange short-term credit in advance. The sources of short-term financing of working capital are trade credit and bank borrowing.

#### ❖ **Trade Credit**

It refers to the credit that a customer gets from suppliers of goods in the normal course of business. The buying firms have not to pay cash immediately for the purchase is called trade credit. It is mostly an informal arrangement and is granted on an open account basis. Another form of trade credit is bills payable. It depends upon the term of trade credit.

#### ❖ **Bank Credit**

Bank credit is the primary institutional sources for working capital financing. For the purpose of bank credit, amount of working capital requirement has to be estimated by the borrowers and banks are approached with the necessary supporting data. After available of this data, bank determines the maximum credit based on the margin requirement of the security. The following type of loan provided by commercial banks.

#### ❖ **Loan Arrangement**

Under this arrangement the entire amount of loan is credited by the bank to the borrowers account, and the loan is repaid in instalments, interest is payable on actual balance outstanding.

### ❖ **Overdraft Arrangement**

Under this arrangement the borrower is allowed to overdraw on his current account with the bank up to stipulated limit. Within this limit any number of drawings are permitted. Repayments should be made in short period.

### ❖ **Commercial Papers**

It is used only by well-established high quality company. The evidence of debts is an unsecured short-term promissory note sold in the money market. It is sold either through dealers or directly to investors. Besides the above form of credit, bank provide loan against the warehouse receipt, inventory, receivables. In our context, most popular sources of short-term financing are short-term loan from commercial bank and other financial institutions. Short-term loan from public deposit is also a major source of working capital financing in our country.

### ➤ **Spontaneous Financing**

Spontaneous financing arise from the normal operation of the firms. The two major sources of such financing are trade credit (i.e. credit and bills payable) and accruals. Whether trade credit is free of cost or not actually depends upon the terms of trade credit.

Financial manager of the firm would like to finance its working capital with spontaneous sources as much as possible. In practical aspect, the real choice of current assets financing is either short-term or long-term sources. Thus, the financial manager concentrates his power in short-term versus long-term financing. Hence, the financing of working capital depends upon the working capital policy which is perfectly dominated by the management attitude towards the risk-return.



### **2.2.8 Determinants of Working Capital**

The importance of efficient working capital management is an aspect of overall financial management. Thus, a firm plans its operations with adequate working capital requirement or it should have neither too excess nor to inadequate working capital. But, there no set of rules or formulae to determine the working capital requirements of the firm. It is because of a large number of factors that influence the working capital requirement of the firm. A number of factors affect different firm in different ways. Internal policies and environment changes also affect the working capital. Generally the following factors affect the working capital requirements of the firm.

#### **➤ Nature and size of business**

The working capital requirement of a firm is basically related to size and nature of the business. If the size is bigger, then it requires more working capital while a small firm needs less working capital. Trading and financial firms require larger amount of working capital relatively to public utilities, while manufacturing concern lies between there two extremes.

#### **➤ Manufacturing Cycle**

Working capital requirements of an enterprise is also influenced by manufacturing or production cycle. It refers to the time involved to make the finished goods form the raw materials. During the process of manufacturing cycle funds is tied-up. The longer the manufacturing cycle, the larger will be working capital requirement and vice-versa.

#### **➤ Production Policy**

Working capital requirement is also determined by its production policy. If a firm produces seasonal goods, then it sells its products in certain

month of the year. In this situation, it can either confine its production only that period when goods are sold or follow a steady production policy. Though the year and produce goods at a level to meet the peak demand. The former policy does not need more working capital than the latter does.

➤ **Credit Policy**

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

➤ **Availability of Credit**

Availability of credit facility is another factor that affects the working capital requirements. If the creditors provide liberal credit terms, then the firm will need less working capital and vice-versa. In other words, the firm can get credit facility easily on favourable conditions. Thus, it required less working capital to run the firm smoothly otherwise more working capital is required to operate the firm smoothly.

➤ **Growth and Expansion**

Growth and expansion also affect the working capital requirement of a firm. However, it is difficult to precisely determine the relationship between the growth and expansion of the firm and working capital needs. But other things being the same growing firm needs more working capital than those static ones.

### ➤ **Price Level Change**

Working capital requirement is also affected by price level changes. Generally, a firm requires maintaining the higher amount of working capital if the price level rises. Because the same level of current asset needs more funds due to the increasing price. In conclusion, the implications of changing price level on working capital position will vary from firm to firm depending on the nature and other relevant consideration of the operation of the concerned firms.

### ➤ **Operating Efficiency**

Operating efficiency is also important factor, which influences the working capital requirements of the firm. It refers to the efficient utilization available resources at minimum cost. Thus, financial manager can contribute to strong working capital position through operating efficiency. If a firm has a strong operating efficiency then it needs less amount of working capital otherwise it requires large amount of working capital.

### ➤ **Profit Margin**

The level of profit margin differs from firm to firm. It depends upon the nature and quality of product, marketing management and monopoly power in the market. If the firm deals with the high quality product, sound marketing management and has enjoyed monopoly power in the market then it earns quite high profit and vice-versa. Profit is the sources of working capital, because it contributes, toward the working capital pool by generating more internal funds.

### ➤ **Level of Taxes**

Working capital requirement is influenced by the level of taxes to be paid in advance is determined by the prevailing tax regulations. But the firm's

profit is not constant, or can't be predetermined. Tax liability in a sense of short-term liquidity is payable in cash. Therefore, the provision for tax amount is one of the important aspects of working capital planning. If tax liability increases, it needs to increase the working capital and vice-versa.

### **2.3 Review of Journal and Articles**

This part is mainly focused on the review of journals articles published by different management experts in working capital management.

Shrestha M K (1983) has made a study on “working capital management in public enterprises: A case study on financial results and constraints”. In his study ten public enterprises have been taken into account for the analysis. In the study he has stated that in public enterprises working capital management is important at least for four reasons:

- ) Public enterprises must determine the adequacy of investment in current assets otherwise it would seriously erode their liquidity position.
- ) They must select the type of current assets suitable for investments so as to raise their operative efficiency.
- ) They are required to ascertain the turnover of current assets that greatly determine the profitability of public enterprises.
- ) They must find out the appropriate sources of funds used to finance current asset.

Due to these quite obvious reasons he has argued that “Mistakes made in management of working capital can lead to advertisement effects that seriously reduce the liquidity turnover and profitability position of public of public enterprises.” At the very outset he has pointed out that, “there is a growing tendency among public enterprise managers to neglect the vital part of the working capital management.” Although working capital

management is so much important yet mistakes are being committed frequently by public enterprises managers' in its management. He has found through many studies and reports that managers often lack basic knowledge of working capital and its overall impact on the operating efficiency and financial viability of public enterprises. So, he has clearly stated that deficiency of knowledge about working capital concepts has often brought a lot of liquidity crisis which could have been avoided in the presence of knowledge among public enterprise managers.

To evaluate the needs of working his study is based on the assessment or determination of the liquidity position, turnover and profitability of sample enterprises. The evaluation has brought into notice the following major facts.

- ) Public enterprises have not been in position to chalk out a suitable financial planning for determining their working capital needs.
- ) The managers of public enterprises fail to give some regards and attention to working capital as they have given to fixed capital.
- ) There exists no proper consistency between liquidity position and turnover assets. It is surprise that public enterprises with lower turnover have highest liquidity position.
- ) Public enterprises have not been in a position to show positive relationship between turnover and return on net working capital.

Keeping in view the above facts he has provided some suggestive measures for the effective operation and efficient results of selected public enterprises of Nepal. These are follows:

- ) Public enterprises must forecast need funds by observing the operating activities to support their sales efforts. Changes in the operations of the public enterprise have immediate effects on

working capital needed. For undertaking this function, public enterprises should have a separate financial forecasting department managed by person well versed in financial discipline.

- ) The managers of public enterprises should make regular checks to identify both excess and deficient current assets wherever possible. This helps a lot to avoid tax management of working capital. As for instance, ratio analysis and funds flow analysis can be employed to locate deviations and thereby take steps to improve them.
- ) Public enterprises should develop appropriate information system by preparing timely reports. However, the costs of acquiring information should be reasonable and whatever information collected must enable public enterprises to accomplish effective management of working capital.
- ) The public enterprise managers should develop a positive attitude towards risk and profits. This can be accomplished only by maintaining proper amount of working capital. They can lower risk if they are in a position to keep extra cash for overcoming the risks of liquidity deficiencies.
- ) Moreover, public enterprises can gain at all times full profits from operations by keeping an absolute minimum amount of working capital.
- ) There is an absolute need for public enterprises to finance current assets from the appropriate combination of short and long-term sources. Matching an item of working capital to single, specific sources must be carefully done.

Pradhan R S (1986) has also made a research on the management of working capital in nine selected manufacturing PEs of Nepal for the duration of ten years from 1973 to 1982 A.D. In this study he states the problem such as what type of policy is being followed by the selected enterprises, whether they are capable to pay their current debtors or not. Similarly, he stated that what sort of structure of working capital is there in selected enterprises. The improvement in working capital utilization has taken place or not and transactions demand for working capital and its various components varies proportionally or less than in proportion of changes in their volume of sales are also the issues of this study.

The major objectives of this study are as follows:

- ) To conduct risk return analysis of working capital position.
- ) To determine the structure and utilization of working
- ) To estimate transactions demand function of working capital and its various components.

The aim of this study is not to develop any theory other than just to have support to examine the underlying financing policy in the selected enterprises. For this he has gone through different studies which are made towards the development of the theory of working capital management by different research scholars. Prof. Pradhan, in his study employed ratio analysis, of the available data to reach the goal of the study. The findings and conclusions of the study are as follows:

- ) Most of the selected enterprises have been achieving a trade-off between risk and return, thereby following neither aggressive nor a conservative approach.
- ) Almost all the selected enterprises have a positive net working capital. The negative net working capital has been observed in a few

cases that are of Bricks and tile factory and Nepal Tea Development Corporation. Much of the growth in net working capital may, however, be attributed inflation as the growth in net working capital at deflated prices has been much lower.

- ) The excess of the current liabilities over quick assets shows lack of capability to pay current debts from quick assets.
- ) Most of the selected enterprises have current ratios of greater than 2 except brick and tile factory. However, current ratios have declined slowly and steadily over a period of time in the majority selected enterprises.
- ) This majority of selected enterprises have quick ratio of greater than one, however, these ratios have declined over a period of time.
- ) Though most of the enterprises have poor liquidity position, they may still be considered good if the enterprises can generate cash flows sufficient to pay their current debts.
- ) The Nepalese manufacturing public enterprises have, on an average, half of their total assets in the form of current assets.
- ) Of the different components of the currents, the share of inventories in the total assets, on an average, is the largest followed by receivables, and cash in most of the selected public enterprises.
- ) Since the inventory occupies a major share in current assets and its share has increased overtime, Nepalese public enterprises should pay more attention to management of inventories. The largest and increasing share inventories those current assets seen to have become less liquid.



- J The turn over ratio shows that there has been an improvement in utilization of current assets by the majority of manufacturing public enterprises of Nepal but this is not the case with net working capital utilization.
- J The regression result shows that the level of working capital and its components and enterprises desires to hold depend not only on sales but holding cost also.

Another article is relating to working capital is by Acharya K. (1988) which is based on the findings and conclusion of his D. Phil. Thesis in the study he has focused his study on the working capital management of Nepal Tea Development Corporation (NTDC) for eight years from 1975/76 to 1982/83 A.D. He has also made the comparison of the finding with the other five selected PEs. In the study he found that the net working capital of NTDC was negative due to increase in current liabilities. Of the current assets inventory holds the largest portion and it was accumulation in the corporation. It had inventory up to 26 month sales. The size of aggregate receivable of NTDC had also been increasing during the study period. Cash balances held by the corporation were insufficient to meet the outline work of the corporation. At the same time, the liquidity position of NTDC were very poor since current assets were less than current liabilities while comparing to another selected PEs, he found that the turnover of inventory receivables, and current assets in NTDC were below the average, thereby reflecting high investment in each of them imperceptive of the sales mostly below the break even and had incurred variable costs sometimes higher than sales price. The suggestions he made on this article are: proper planning of production and sales, new credit policy, action against the delinquent dealers, issue of

shares and debenture and obtaining loans from any individual of financing institutions.

## **2.4 Review of Related Dissertations**

Beside review of available books and research studies a number of studies have been made relating to working capital management in different PEs of Nepal. Some of the review on the same is focused in this section.

Joshi (1986) has studied the working capital management of Biratnagar Jute Mill. The study concerned with management of CAs and covers five years period (2036/37 to 2040/41). The study has embodied various financial ratios for measuring Biratnagar Jute Mills financial viability. The study is based on secondary data with opinion survey method and limited to gross concept of working capital. The study

has indicated mismanagement of inventory, lack of proper policy of cash holding and heavy dependence on short-term bank credit. He has recommended for effective working capital management of mill by planning realistic turnover target specimen, designing effective inventory management program following productive investments approach, preparing effective sales plan and exhaustive market research program using short term bank credit up to certain reasonable limit. Maintaining optimum cash balance and making proper utilization of accumulated collection debts.

Mr. Joshi has used ratio analysis to study and not used correlation coefficient to test the significance and relation in between working capital components.

Shrestha (1990) had studied the working capital management of Dairy Development Corporation (DDC) Nepal, considered the financial statement of DDC for five years period from 1985 to 1989. In this study he found that there was high level of investment in each type of current assets. Of which inventory held the highest proportion followed by cash and receivables respectively and DDC had very low level of working capital turnover and high liquidity position. He also found out that receivables and inventory were not affected by sales volume, but there was proper relation between current assets and share of inventory on it. From the study he recommended that DDC should determine certain rate of return on its investment, and sales target should be set to overcome the problem of perpetual loss. It should make regular checks to identify both excess and short current assets. The huge amount of inventory should be reduced; marketing policy should be integrated with credit policy and should give attention to manpower planning.

He used ratio analysis and test of hypothesis as major tools for this study. His study is lacking of use of correlation coefficient in order to test the relationship in between the components of working capital.

Another study made by Pradhan (1989) on working capital policy of manufacturing PEs in Nepal, has given emphasis about liquidity position.

Utilization of working capital, profitability position, sources of financing of current assets and determinates of working capital in MPEs. He suggested for aggressive sales promotion policy, indicated the need to such production and demand schedule, adoption of standard costing as well as marginal costing technique, formulation of sound working capital policy, training to financial employers to acquaint about latest development in the area of working capital management.

Another study made by Shrestha (1993) relating to “Evaluation of working capital management of Bottlers Nepal Limited (BNL)”. He focused his study on appropriateness of investment in current assets to its total assets, liquidity position. Management of working capital needs a utilization of current assets in BNL. From the study he found that the proportion of current assets to total assets was increasing year after year and the proportion of inventories was the highest followed by receivables and cash respectively. He also found that the liquidity position of BNL was very high resulting low profitability and concluded that efficiency of working capital management in BNL was poor. For those problems, he suggested that playing proper attention to increase investment in current assets with better utilization rather than increasing further investment. He also suggested this adopting suitable credit policy and providing discount to accelerate its debt collection period. He recommended setting minimum target rate of return minimize the gap of achievement.

Mr. Shrestha has used ratio analysis as a major tools this study. His study lacking of use of correlation coefficient in order to test the relationship between the components of working capital.

A next study made Giri (1996) in working capital management in Birgunj Sugar-Factory Limited (BSFL). He used ratio analysis as a tool for the purpose of analyzing working capital management in BSFL. He found that as a manufacturing PES, BSFL has followed as approach which is neither aggressive nor conservative.

The amount of current assets with respect to total assets was in fluctuating trend during the period of study from 2041/42 to 2050/51. The inventory holds the major part of current assets and indicated the various turnovers indicated that current assets were not properly utilized in the factory during the period of study. The net profit is regards to total assets

was not quite satisfactory. The large volume of idle cash balance has contributed for the lower return on working capital. He recommended the use of proper inventory model. The idle cash balance should be invested in short term securities which maximize the profit.

Mr. Giri has used only ratio analysis to study the working capital management in BSFL. He has missing the use of correlation coefficient order to test the relationship and significance in between the components working capital.

Another study related to working capital management has been adopted by Pathak (1992) on “An evaluation of working capital management of Nepal Lube Oil Limited (NLO), Nepal. He studied the five years data from the F/y 2043/44 to F/y 047/048 form the analysis of working capital management in NLO. From the analysis he found that lesser participation of fixed assets in total assets. Cash hold relatively small porting of total assets. The inventory holds the largest portion indication the unsound inventory management in NLO, inefficiency in collecting debtors during five years. Unfavourable position of current ratio was also found. The receivables were no affected by sales. The working capital and inventory were affected by sales. From these findings he recommended that the NLO should determine certain rate of return on its investment and sale target should be set to overcome the problem or perpetual loss. NLO should checks regularly to identify excess and short current assets. Inventory management policy should be adapted to minimizing the huge amount of inventory. Certain target should be set for credit policy and avoid unnecessary increase in the volume of receivable of company should make regular inspection to find out both excess and deficit current assets. It should give attention to manpower planning too.

A study made by Gadtaula (1992) on 'Working capital management of Nepal Tea Development Corporation (NTDC). "His study I based on ten years financial statements, from the year 1982/83 to 1991/93.

He has used various statistical tools like standard deviations, coefficient of variation, regression analysis, test of hypothesis, ratio analysis trend analysis, etc. to adopt this study. From the analysis of the above tools he has found that the working situation of the corporation was neither poor nor sound. The current assets percentage was greater in total assets. The level of current assets of NTDC depends upon its risk. The current assets to sales were not constant in an every year indicated unfavourable. There was alack position of the sales with accumulation of inventory. After finding these situation in NTDC has suggested for the proper inventory policy, the sales should be promoted, the ea plantation land has to be increased, applied the sound labour and personnel management policy etc.

Another study made by Sapkota (1994) on 'A study on working capital management in Himal Cement Company Limited, he took five years data from 044/045 to 048/49 for study. He used ratio analysis only for the analysis of working capital and receivables should be managed in optimum level. He suggested that the company should determine certain rate of return on its investment and sales target should be set to recoup and overcome the problem of loss. The HCCL has to maintain proper liquidity position. He has also found that the absence of proper guidelines for funds inventory control, cost control selling process, investment policy in current assets and management responsibilities and lack of proper rules and regulations of the government policy.

Mr. Sapkota has used only ratio analysis to study the working capital management in HCLL. He has missing the use of correlation coefficient in order to test the relationship and significance in between the components of working capital.

An analytical study of working capital management in public sector Brick factory has been conducted by Shrestha (1989). He has analyzed various components of working capital like cash, inventory, receivables, and current liabilities. The study is based on two government Brick Factories: Harsiddhi and Bhaktapur Brick Factory. He found that there is no proper relation in between liquidity turnover and profitability of two brick factories. There is no combination in between fixed capital and working capital. The analysis indicated that the working capital position is totally neglected. He has suggested to use financial tools to forecast the working capital. The factories have to keep the record up to data coding to standard format. The management must be serious regarding working capital management.

He has analyzed various working capital components through ratio analysis to compare in between two brick factories. He has not used correlation coefficient to verify the significance and relation in between the components of working capital.

A next study made by Giri (1986) on 'Working capital management, a case study of Balaju Textile Industries Limited.'

He observed five years data from 036/37 to 040/41 for the analysis of working capital. He used ratio analysis as a tool for this analysis. From the study he concluded that the low utilization of plant capacity and lack of efficient management of the corporation push it to bear loss and poor utilized the owner's funds. He also found that there was no efficient and productive use of working capital. From these finding he recommended

that the corporation should make regular check to identify both excess and deficit current assets. There should be need to finance current assets from the appropriate combination of short term and long term sources. It should take action fro disposing of huge inventory which tied-up working capital and involved huge carrying costs and risk of losses. The long term marketing strategies should be formulated. Lastly, it should strengthen its production capacity with the help of sound incentive schemes to workers and preferably wages incentive plan.

The above review of literature from various books, journals & articles and dissertations related to the working capital management show that the one of the major problem in Nepalese corporations behind unhealthy and unsound situation in improper management of working capital. Since the success and failure of any enterprises is heavily dependent upon the efficient management of working capital and being a manufacturing company established in Nepal, the efficiency in the management of working capital of BN(T)L should be analyzed. So this study attempts to analyze the working capital management in BN(T)L By taking 5 years data for observation and other available information with the help of methodology as described in the following chapter.



## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

The basic objective of the study as described in the introductory chapter is to examine the management of the working capital in Bottlers Nepal (Terai) Ltd. To achieve the above mentioned objective an appropriate research methodology has to be followed. Therefore, in this chapter, focus has been made on research design, nature of the data, data processing procedures, and tools used for analysis.

#### **3.2 Research Design**

This study is carried out by using both analytical and descriptive analysis, methods. Mostly the secondary data has been used for analysis, but the discussion and personal interview with the concerned employees of the Bottlers Nepal (Terai) Ltd are also used for descriptive analysis. Hence research design for undertaking this study is based on descriptive and analytical method. Attempts have been made to describe and analyze the composition of working capital, turnover position, liquidity position and profitability position of Bottlers Nepal (Terai) Ltd for the period of five years ranging from 2059/60 to 2063/64 B.S.

#### **3.3 Population and Sample**

There are many manufacturing companies all over the country. Out of them only Bottlers Nepal (Terai) Ltd has been chosen for this study.

#### **3.4 Nature and Sources of Data**

The data used in this study are basically secondary in nature but the information is also collected through discussion and interview with

employees, with reference to the research question design. The secondary data has been collected from annual record, reports and financial statement and unpublished official records of Bottlers Nepal (Terai) Ltd.

### **3.5 Data Collection and Processing Procedure**

This study is mainly based on secondary data. The required annual reports and information are collected from the related personnel of the industry. All these secondary data and information are properly synthesized, arranged, tabulated and calculated in accordance with the requirement of the study.

### **3.6 Tools for Analysis**

For analyzing the working capital management in Bottlers Nepal (Terai) Ltd financial and statistical tools have been applied, they are as under:

#### **3.6.1 Financial Analysis:**

In financial analysis the researcher used ratio analysis which establishes the relationship between two variables of the financial statements. Various ratios are employed and grouped for the analysis of composition of working capital, turnover position, liquidity position and profitability position. All these are briefly described below.

##### **3.6.1.1 Composition of Working Capital**

To evaluate the financial condition and performances of company, the financial analyst needs certain yardsticks. The yardsticks frequently used are a ratio in relation two pieces of financial data to each other. Experienced and performance of the company from the analysis and interpretation of various ratios from the analysis of financial data. The composition of working capital shows how much proportion is actually maintained in each type of current assets in relation to the total working capital.

The composition of working capital has been studied by analyzing following ratios:

### ) **Current Assets to Total Assets (CATA)**

The ratio of current assets to total assets indicates that what percentage of the company's total assets is invested in the form of current assets. It is calculated as:

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

As the ratio increases, the risk and profitability of the company would decrease. The low ratio indicates small amount of working capital.

### ) **Current Assets to Fixed Assets (CAFA)**

The ratio shows the relationship between the current assets and fixed assets and can be calculated as:

$$\text{CAFA} \times \frac{\text{Current assets}}{\text{Fixed Assets}} | 100$$

If the ratio is large, it indicates the sound working capital.

### ) **Cash and Bank Balance to Current Assets (CBCA)**

It is calculated as:

$$\text{CBCA} \times \frac{\text{Cash and Bank Balance}}{\text{Current Assets}} | 100$$

The small ratio indicates the sound management and large ratio vice-versa. The working capital is directly affected by it.

### ) **Cash and Bank Balance to Total Assets (CBTA)**

This ratio is calculated as under and indicates what percentage of total assets is invested in cash and bank balance.

$$\text{CBTA} \times \frac{\text{Cash and Bank Balance}}{\text{Total assets}} | 100$$

As the ratio increases the risk and profitability would decrease and if the ratio is greater the working capital be greater.

### ) **Inventory to Total Assets (ITA)**

This ratio can be calculated as:

$$\text{ITA} \times \frac{\text{Inventory}}{\text{Total Assets}} | 100$$

This ratio indicates the percentage of total assets invested in the form of inventories. Inventory is a part of working capital so, if the percentage increased the working capital automatically increased. The increased in the ratio also indicates liberal inventory policy or blocking of material in stock.

### ) **Inventory to Current Assets (ICA)**

The ratio implies the percentage of current assets in the form of inventory and derived as:

$$\text{ICA} \times \frac{\text{Inventory}}{\text{Current Assets}} | 100$$

The increase in the ratio is an indication of liberal inventory policy followed by the company. If the ratio increases or percentage increases it means greater part is occupied by inventory. On the other hand, current

assets is termed as working capital, if the ratio is small the firm will have greater volume of working capital.

### **) Receivables to Total Assets (RTA)**

This ratio can be calculated as:

$$\text{RTA} \times \frac{\text{Receivable}}{\text{Total Assets}} | 100$$

This ratio indicates the percentage of total assets invested in the form of receivables. The increase in the ratio indicates the liberal credit policy followed by the company. The working capital is affected by the ratio because receivables are also a part of working capital, if the ratio increases the working capital also increases.

### **) Receivables to Current Assets (RCA)**

This ratio indicates the share of receivables on current assets and is derived as:

$$\text{RCA} \times \frac{\text{Receivables}}{\text{Current Assets}} | 100$$

The low percentage indicates the greater working capital and vice-versa. If the percentage is greater the company is unable to collect receivables promptly.

### **3.6.1.2 Liquidity Position**

Liquidity is the most important part for the company. It shows the ability of the company to pay its current obligations. The liquidity positions of Bottlers Nepal (Terai) ltd are computed by analyzing current ratio and quick ratio.

### **) Current Ratio (CR)**

This ratio is computed by dividing current assets by current liabilities thus,

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

The higher current ratio indicates the position of the company is in liquid and able to pay its bills. Generally the current ratio of 2:1 is considered to be satisfactory. More ratio indicated the greater amount of working capital and less ratio indicated the lower amount of working capital of vice-versa.

### **) Quick Ratio or Acid-Test ratio (QR or ATR)**

It is computed by dividing the quick assets by current liabilities. Thus,

$$\text{QR} \times \frac{\text{Quick Assets}}{\text{Current Liabilities}}$$

As the quick assets don't indicate the amount invested in the inventory, it is reliable to measure the company's liquidity. Generally the quick ratio of 1:1 if the company is considered to be sound.

### **3.6.1.3 Turnover Position**

By analyzing the various turnover ratios the company turnover position can be known. The following ratios have been calculated.

### **) Current Assets Turnover (CAT)**

The ratio indicates the number of times the current assets are turned over during the year. It is computed by dividing sales by current assets i.e. gross working capital.

$$\text{CAT} \times \frac{\text{Sales}}{\text{Current Assets}}$$

As the ratio increases, it is utilization of current assets. If the ratio is low, a greater volume of working capital is there, low ratio indicates greater working capital and high ratio indicates lower working capital.

### ) **Net Working Capital Turnover (NWCT)**

It is computed by dividing sales by net working capital, i.e. different of current assets current liabilities.

$$\text{NWCT} \times \frac{\text{Sales}}{\text{Net Working Capital}}$$

Increase in the ratio shows the utilization of net working capital and vice-versa.

### ) **Cash Turnover (CT)**

It is computed by dividing sales by cash balance and measures the speed with which cash moves through an enterprise's operations.

$$\text{CT} \times \frac{\text{Sales}}{\text{Cash Balance}}$$

### ) **Receivables Turnover Ratio (RT)**

This indicates the number of times the receivables are turned over during the year. It gives the general measure of the productivity of the receivable investment. The higher ratio indicates the higher amount of working capital. It is computed as:

$$\text{RT} \times \frac{\text{Sales}}{\text{Receivables}}$$

For the complimentary of this ratio we may have another ratio called average collection period which indicate the number of days it takes on

an average to collect account receivables. It is computed by dividing days in a year by receivables turnover.

$$\text{ACP} \times \frac{\text{Days in a year}}{\text{Receivables Turnover}}$$

### **) Inventory Turnover (IT)**

This ratio shows the number of times inventory is replaced during the year. It measures the relationship between sales and the inventor level. It is computed by dividing sales by inventory.

$$\text{IT} \times \frac{\text{Cost of Goods Sold}}{\text{Closing Inventory}}$$

The inventory turnover shows that the inventory is rapidly turning into receivables through sales. Higher inventory turnover indicates the good inventory management and lower turnover suggests the management should manage its inventory properly.

#### **3.6.1.4 Cash Conversion Cycle**

Cash conversion cycle is an important financial tool because this approach may pick up information hidden by other liquidity measures. Cash conversion cycle is a quick and convenient way to analysis the ongoing liquidity of the company over time. Although it does not show how risky the cash flows are, it does not focus on our main concern cash flows. Cash conversion cycle shows how many times it takes to convert the receivable into cash. Inventory turnover into cash and how much time it takes to reply its obligation.

Cash conversion cycle of the manufacturing firm is the time duration of cash expenditure on productive resources to cash recovery from the produced goods. It is calculated by deducting the deferral period from the operating cycle of the firm. The operating cycle of the firm is the sum of



the inventory conversion period (ICP) and the average collection period (ACP). Deferral period is the duration of forms payment from the date of raw materials purchase. Thus,

$$\text{Operating Cycle (OC)} = \text{ICP} + \text{ACP}$$

Cash Conversion Cycle (CCC) Operating Cycle- Deferral Period

The Cash Conversion Cycle is the quick and convenient way to analyze the ongoing liquidity of the firm overtime. The cycle shows how much a time needs to collect cash.

### ) **Inventory Collection Period (ICP)**

ICP indicates the time duration of the date of raw materials purchase to the date of finished goods sold. It measures the production and selling efficiency of the company. The short ICP indicates the better efficiency of the company and vice-versa. The inventory conversion period is calculated as below:

$$\text{ICP} \times \frac{\text{Closing Inventory}}{\text{Cost of goods sold}} \mid 365 \text{ days}$$

### ) **Receivable Conversion Period (RCP)**

RCP indicates the number of days receivable converts into cash. It analyzes the efficiency of the company in collection of receivable. It is calculated as below:

$$\text{RCP} \times \frac{\text{Receivables}}{\text{Sales}} \mid 365 \text{ days}$$

### ) **Payable Deferred Period (PDP)**

PDP indicates number of days creditors turn over each year. It is calculated as below:

$$PDP \times \frac{\text{Account Payable}}{\text{Cost of goods sold}} \mid 365$$

### 3.6.1.5 Profitability Position

The main objective of the company is to earn maximum profit. The position of the profitability of the company is analyzed with the help of following ratios:

#### ) Gross Profit Margin (GPM)

It is computed by dividing gross profit by sales. Gross profit is obtained by deducting cost of goods sold from net sales.

$$GPM \times \frac{\text{Gross Profit}}{\text{Sales}} \mid 100$$

The gross profit margin ratio reflects the efficiency with which company produces each unit of product. The higher percentage indicates the better efficiency of the company.

#### ) Net Profit Margin (NPM)

A reasonable gross profit margin is necessary to earn adequate net profits. Net profit is obtained when operating expenses and income tax are subtracted from the gross profit. The net profit margin ratio is measured by dividing net profit after tax by sales.

$$NPM \times \frac{\text{Net Profit After Tax}}{\text{Sales}} \mid 100$$

The ratio is overall measurement of the company's ability to earn net profit.

## **) Operating Ratio (OR)**

The operating ratio is an important ratio that explains the change in the net profit margin ratio. This ratio is computed by dividing all operating expenses cost of goods sold, selling expenses and general and administrative expenses by sales.

$$\text{OR} = \frac{\text{Cost of goods sold} + \text{General expenses}}{\text{Sales}} \times 100$$

Higher operation ratio is unfavorable since it will leave a small amount of operating income to meet interest, dividends etc. the higher ratio indicates the lower operating profit and lower efficiency of the company. So, minimum percentage is preferable.

### **3.6.2 Statistical Analysis**

The statistical analysis is one particular language which describes the data. Using statistical analysis it is possible to talk about the relation and difference of variables. In order to analyze the relation and differences of the variables relating to working capital of BN(T)L. The correlation analysis and trend analysis is used as statistical tools.

#### **3.6.2.1 Correlation Analysis**

Correlation analysis enables us to have an idea about the degree and direction of the relationship between two variables under the study. After computing the value of the correlation coefficient the next step is to find the extent to which it is dependable. The probable error (P.E.) of correlation coefficient is a statistical tool, which is used to measure the testing of reliability of an observed value of correlation coefficient. For testing the reliability of observed value of correlation coefficient the following guidelines are used.

- a. If  $r < (P.E.)$  – the relationship is not significant at all between the variables under consideration.
- b. If  $r > 6$  times of (P.E.) – the relationship is definitely significant between the variables under consideration.

This study has tested the relationship between the variables such as inventory and sales, receivables and sales, current assets and gross profit, total assets and gross profit, correlation coefficient, cash and bank balance and gross profit. Correlation coefficient of the variables is computed by using the following formulae.

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

Where,

x= dependent variables

y= independent variables.

N= size of data

### 3.6.2.2 Trend Analysis

Trend analysis is a sequence of observation of a variable made at a regular points or intervals of time and arranged in chronological order. The trend analysis shows the future train of any variables based on the historical information. The expectations and growth situation of financial information can be made by the trend analysis. There are many methods of trend analysis, among them only least square method is used to study purpose. The least square method is used to study purpose. The least square method is used to fit a straight line trend to forecast the trend value of future. The straight line trend is represented by the equation

$$Y_c = a + bx$$

Where,

$Y_c$  = Trend value of Y variables

Y = Financial variables of BN(T)L

B = Slope of trend line

X = Time i.e. independent variable

A = Y interceptor computed trend figure of Y variable

When  $X = 0$ ,

The following two simultaneous equations to be solved to find out the value of a and b then estimate trend equation.

If  $X = 0$

Then,  $a = \frac{Y}{N}$

$$B = \frac{\sum XY}{\sum X^2}$$

In this study trend analysis of sales, inventory, net working capital, and net profit are analyzed.

### **3.6.3 Definition of Key Terms**

To avoid ambiguity, confusion and misunderstanding the key terms used in this study have been defined as follows:

- Working capital: The term working capital here refers to the gross working capital. In other words, it includes total volume of current assets of the company.
- Net working capital: The net working capital refers to the difference between company's current assets and current liabilities.

- Current assets: The current asset implies those assets which can usually be converted into cash within one year. It includes cash and bank balance, receivables, inventories, etc.
- Current liabilities: Current liabilities are those claims of outsiders which are expected to mature for payment within one year. It includes creditors, bank loan, payment due, etc.
- Fixed assets: it consists of the assets like land and building, plant and machinery, furniture and fixtures, vehicles, water supply system, office equipment and miscellaneous assets related to administration, investment and pre-operating expenses.
- Total assets: It is the total of current assets and fixed assets.
- Investment: It includes share in other PEs and holding of development bonds.
- Cash and bank balance: It includes the cash in hand, cash at bank, and bank collection.
- Receivables: It includes the sales debtors.
- Inventories: It includes the inventories of raw materials, chemicals and finished goods inventories.
- Net worth: It includes the paid up capital and reserve and retained earning on the company.

## **CHAPTER FOUR**

### **PRESENTATION AND ANALYSIS OF DATA**

#### **4.1 Introduction**

The major objectives of this study as stated in chapter one is to examine the management of working capital in BN(T)L. in order to fulfill this objective concrete course of research methodology has been attempted to follow which is explained in chapter three. This chapter is the heart of this study. In this chapter, efforts have been made to analyze the working capital management of BN(T)L in terms of composition of current assets, liquidity position, turnover position, and profitability position. For analyzing the working capital management of BN(T)L, financial as well as statistical tools have been used.

#### **4.2 Financial Analysis**

For the financial analysis of the working capital of BN(T)L. ratio analysis is used as financial tool.

##### **4.2.1 Composition of Working Capital**

The success or failure of any manufacturing firm depends upon the proper management of current assets. Every firm has to maintain the appropriate level of current assets to run the business smoothly. As stated in conceptual framework, the major components of current assets are inventories, sundry debtors and cash and bank balance.

At this condition, it is tried to analysis composition in current assets of BN(T)L. the composition of current assets of BN(T)L is analyzed by analyzing the investment level in current assets components, relationship

of current assets with sales volume, relationship of current assets with total assets and fixed assets.

**Table No. 4.1 Investment Level in Current Assets Components.**

*Rs. In '000,000'*

Fiscal Year	Sundry Debtors		Inventories		Cash/Bank		Prepaid, advance, loan & deposits		Total CA
	Rs	%	Rs	%	Rs	%	Rs	%	Rs
2059/60	127	22.60	178	31.67	46	8.19	211	37.54	562
2060/61	141	27.22	134	25.87	22	4.25	221	42.66	518
2061/62	57	19.13	119	39.93	15	5.03	107	35.91	298
2062/63	16	7.14	108	48.21	21	9.38	79	35.27	224
2063/64	11	3.34	100	30.40	27	8.21	191	58.05	329
Average	70.40	15.89	127.80	35.22	26.20	7.01	161.80	41.89	386.20
S.D.	60.94		30.83		11.86		64.49		146.32
C.V.	0.87		0.24		0.45		0.40		0.38

*Source: Annual Report of BN (T)L*

In this table, we can see that the different component of current assets of the company. These are sundry debtors, inventories, cash & bank and prepaid, advance, loan & deposits. The company has 70.4 million of average debtors which is about 16% of current assets. The amounts of debtors are higher in first two years and decrease in remaining three year. The S.D. of debtors is 60.94 million and C.V. is 0.87 for the study period. The inventory consists raw material, work in progress and finished goods. The amount of inventory also decreases year by year. The average amount of inventory is 127.8 million which is 35% of current assets. The S.D. and C.V. is 30.83 million and 0.24 respectively, which is on satisfactory level.



Another component is cash & bank balance. Cash is required for different motives for the firm such as transition, precautionary and speculative motives. Every firm has to meet current cash obligation arising in the ordinary course of business. Similarly cash is required to meet unexpected events such as: fire, strikes, and the failure of important customers. Cash is also required to take advantage of profit making opportunities arising especially from probable change in prices. The table shows 26.2 million of average cash & bank balance, which is 7.1% of current assets. Similarly the S.D. and C.V. is 11.86 million and 0.45 respectively.

Another component is prepaid, advance, loan and deposits. The company has 161.8 million of average prepaid, advance, loan and deposits and S.D. and C.V. is 64.49 million and 0.4 respectively.

#### **4.2.2 Ratio of Current Assets to Sales**

A sale is one of the most integral parts of manufacturing industry like this company. The survival and growth is every manufacturing concern depend on the proportion of sale of the product what they produce. The company's sales policy depends upon the available resources and demand. It is also greatly affected by the production policy. Production policy of the company is affected by financial policy and their strategic planning. Therefore, the coordination between those elements of the company is the most important. Thus, the company invests in current assets to support the given level of sales.

**Table 4.2 Ratio of CA to Sales***Rs in '000,000'*

<b>Fiscal Year</b>	<b>Current Assets (CA)</b>	<b>Sales</b>	$\frac{\text{Current Assets}}{\text{Sales}} \times 100$
2059/60	561	461	121.69
2060/61	519	465	111.61
2061/62	299	401	74.56
2062/63	225	354	63.56
2063/64	329	485	67.84
Average	386.6	433.20	87.85
S.D.	145.82	54.26	26.82
C.V.	0.38	0.13	0.31

*Source: Annual Report of BN(T)L*

The above table shows the relationship between current assets and sales. The amount of current assets is higher than sales in first two years so the ratio is more than 100%. The average current asset is 386.2 million and an average sale is 433.2 million in the study period. The S.D. of current assets and sales is 146.32 and 54.26 million respectively. The S.D. of current assets is higher which is not good for the company. The C.V. of current assets and sales is 0.38 and 0.13 respectively.

#### **4.2.3 Ratio of current Assets to Total Assets and Fixed Assets**

For the utilization of fixed assets, current assets are required. The sum of total current assets and non-current assets gives the total assets. The relationship of current assets with total assets and net fixed assets of BN(T)L are analyzed in the following table.

**Table No. 4.3 Ratio of Current Assets to Total Assets***Rs. In '000,000'*

<b>Fiscal Year</b>	<b>Current Assets</b>	<b>Total Assets</b>	$\frac{\text{Current Assets}}{\text{Total Assets}}   100$
2059/60	561	688	81.54
2060/61	519	668	77.69
2061/62	299	619	48.30
2062/63	225	419	53.70
2063/64	329	497	66.20
Average	386.6	578.20	65.49
S.D.	145.82	115.89	14.50
C.V.	0.38	0.20	0.22

*Source: Annual Report of BN(T)L*

The table shows that the average amount of current assets is 386.2 million and average amount of total assets is 578.2 million in the study period and the average ratio of the current assets to total assets is 65.4%. The S.D. and C.V. of the ratio are 14.61 million and 0.22 respectively.

**Table No. 4.4 Ratio of Current Assets to Fixed Assets***Rs. In '000,000'*

<b>Fiscal Year</b>	<b>Current Assets</b>	<b>Fixed Assets</b>	$\frac{\text{Current Assets}}{\text{Fixed Assets}}   100$
2059/60	561	126	445.24
2060/61	519	149	348.32
2061/62	299	320	93.44
2062/63	225	194	115.98
2063/64	329	169	194.67
Average	386.6	191.60	239.53
S.D.	145.82	76.03	152.29
C.V.	0.38	0.40	0.64

*Sources: Annual Report of BN(T)L*

The above table shows the ratio of current assets to fixed assets and their investment level for the study period. The table shows the average current assets are Rs. 386.2 million and average fixed assets is Rs. 191.6 million. The average proportion of current assets on fixed assets is 232.39 percent and that means the current assets is higher than the fixed assets.

#### **4.2.4. Liquidity position**

The first and for most objective of adapting appropriate working capital policy is to maintain appropriate and optimum liquidity in order to enable to the enterprise to meet current or short term obligations when they became due for payment. Liquidity is a prerequisite for the survival of the company. It is a very crucial problem in maintaining the appropriate liquidity in any company as it indicates risk return trade off with higher or lower liquidity level. Liquidity is closely related with the net working capital. Hence, an effort is made to analyze the size of net working capital, on one hand and current ratio, and quick ratio on the other hand.

##### **4.2.4.1 Size of Net Working Capital**

The net working capital of a firm is the difference between current assets and current liabilities. The net working capital is basically depends upon the nature and size of the company. In case of manufacturing company, the size of working capital is depending upon production cycle and business cycle. Net working capital indicates margin of safety to the creditors. The net working capital of BN(T)L is computed below.

**Table No. 4.5 The Size of Net Working Capital***Rs. In '000,000'*

<b>Fiscal Year</b>	<b>Current Assets</b>	<b>Current Liabilities</b>	<b>Net Working Capital</b>
2059/60	561	162	399
2060/61	519	117	402
2061/62	299	151	148
2062/63	225	109	116
2063/64	329	162	167
Average	386.6	140.2	246.4
S.D.	145.82	25.39	141.85
C.V.	0.38	0.18	0.57

*Sources: Annual Report of BN(T)L*

The above table shows the net working capital of BN(T)L for the study period. The working capital of first two years is higher than remaining three years. The average working capital of the study period is 246.4 million with S.D. of 141.85 and C.V. of 0.57.

#### **4.2.4.2 Current Ratio**

Current ratio measures the short run debt paying ability of the firm. It measures the availability of CA for meeting CL. The standard ratio is 2:1 for measurement. The current ration is calculated and tabulated below.

**Table No. 4.6 Current Ratio***Rs. In '000,000'*

<b>Fiscal Year</b>	<b>Current Assets</b>	<b>Current Liabilities</b>	<b>Ratio in times</b>
2059/60	561	162	3.46
2060/61	519	117	4.44
2061/62	299	151	1.98
2062/63	225	109	2.06
2063/64	329	162	2.03
Average	386.6	140.2	2.79
S.D.	145.82	25.39	1.11
C.V.	0.38	0.18	0.4

*Sources: Annual Report of BN(T)L*

The above table shows the current ratio of the company is quite higher in first two years and the ratio of remaining three years is nearly the standard. The ratio of year 2060/61 is much higher i.e. 4.44 times which is not good for the company. The S.D. and C.V. of ratio is 1.11 and 0.4 respectively.

#### **4.2.4.3 Quick Ratio**

It measures the short term liquidity of the firm but it emphasizes the instant debt paying capacity of the firm. The short term obligations are met by realizing amount from current assets. The current assets should be either liquid or near liquidity. Liquid assets include CA less inventory and prepaid expenses. Quick ratio is calculated by dividing quick assets by current liabilities and 1:1 is regarded as standard ratio for the measurement. This ratio shows the ability of the firm to pay off its current obligation without relying of sales and collection of inventories. The quick ratio of BN(T)L is calculated and tabulated below.

**Table No. 4.7 Quick Ratio***Rs. In '000,000'*

<b>Fiscal Year</b>	<b>Quick Assets</b>	<b>Current Liabilities</b>	<b>Ratio in times</b>
2059/60	172	162	1.06
2060/61	164	117	1.4
2061/62	73	151	0.48
2062/63	38	109	0.35
2063/64	38	162	0.23
Average	97	140.2	0.71
S.D.	66.43	25.39	0.5
C.V.	0.68	0.18	0.71

*Sources: Annual Report of BN(T)L*

The above table shows that the company has to maintain its quick ratio mainly in last three years. The ratio of first two year is higher than remaining three years. The ratio of last three year is lower than the standard, it means the company has not got sufficient amount to meet current liabilities and to take advantages from different opportunities. The average ratio is 0.71 for the study period which is also the lower than the standard. The S.D. and C.V. of ratio is 0.5 and 0.71 respectively.

#### **4.2.5 Turnover Position**

Only investing in working capital is not sufficient to get good result and return, it should efficiently be utilized. The efficiency of working capital utilization is analyzed with the help of turnover ratios.

The turnover ratios measure the degree of effectiveness in use of resources of the company. These ratios reflect the speed of rapidity with which assets are converted into sales. There is no standard measurement; generally, highest ratio is preferable for the company. The turnover

position of BN(T)L is analyzed in terms of current assets i.e. gross working capital turnover, inventory turnover, receivable turnover.

#### 4.2.5.1 Current Assets Turnover

The current assets ratio indicates the extent to which the investment in current assets contributes towards sales. This ratio measures the efficiency with which the company is utilizing its investment in current assets. It also indicates the adequacy of sales in relation to the investment in current assets. The current assets turnover ratio of the company is computed and tabulated below.

**Table No. 4.8 Current Assets Turnover**

*Rs. In '000,000'*

<b>Fiscal Year</b>	<b>Current Assets</b>	<b>Sales</b>	<b>Ratio in times</b>
2059/60	561	461	0.82
2060/61	519	465	0.9
2061/62	299	401	1.34
2062/63	225	354	1.57
2063/64	329	485	1.47
Average	386.6	433.2	1.22
S.D.	145.82	54.26	0.34
C.V.	0.38	0.13	0.28

*Sources: Annual Report of BN(T)L*

The above table shows that the amount of CA is higher than sales in first two years, therefore the C.A.T.R. for first two year is less than zero which is not good for the company. And it shows the poor management of current assets. But in remaining three tears we can see that the company has improved its management of current assets and the ratio is increases. But still that is not good enough. The average of C.A.T.R. for the study



period is 1.22. The S.D. and C.V. of ratios for study period is 0.34 and 0.28 respectively.

#### **4.2.5.2 Inventory Turnover Position**

The relationship between sales and stock is known as inventory turnover ratio. This ratio evaluates the efficiency of a company for the inventory management. Inventory is the most important component of current assets of the company. The company should be maintained properly and effectively the inventory management. Inventory turnover ratio indicates the number of times inventory is replaced during the year. The working capital, production and sales activities of the company are correlated each other. The production volume should be increased to meet the higher level of sales target. To meet the higher level of sales, more and more raw materials will be required to support the production activities. Therefore, the inventory level of raw materials, work in process, and finished goods should be properly maintained and managed. The inventory turnover position of BN(T)L is computed and tabulated below.

**Table No. 4.9 Inventory Turnover Position**

*Rs. In '000,000'*

<b>Fiscal Year</b>	<b>cogs</b>	<b>Inventory</b>	<b>Ratio in times</b>
2059/60	237	178	1.33
2060/61	239	134	1.78
2061/62	192	119	1.61
2062/63	188	108	1.74
2063/64	260	100	2.60
Average	223.2	127.8	1.81
S.D.	31.65	30.83	0.47
C.V.	0.14	0.24	0.26

*Sources: Annual Report of BN(T)L*

The above table shows that the Inventory Turnover Position of first four year is quite similar but the position of 2063/64 is quite higher. The average of ratios of study period is 1.81 with S.D. of 0.47 and C.V. of 0.26.

#### 4.2.5.3 Receivable Turnover Position

Sundry debtors are one of the components of working capital. In order to increase the business activity the company has to increase the sales volume. The sales volume can be increased by giving product in credit to the customers, which creates the sundry debtors.

The sundry debtors measure the relationship between credit sales and collection period. If it is high, there would be little fund in account receivables and represent good management in sales activity and vice versa. The bills receivables turnover and average collection period is computed and tabulated below.

**Table No. 4.10 Receivable Turnover Position and Average Collection Period**

*Rs. In '000,000'*

<b>Fiscal year</b>	<b>Sales</b>	<b>Sundry Debtors</b>	<b>Ratio in times</b>	<b>ACP</b>
2059/60	461	127	3.63	101
2060/61	465	141	3.3	111
2061/62	401	57	7.04	52
2062/63	354	16	22.13	17
2063/64	485	11	44.09	9
Average	433.2	70.40	16.04	58
S.D.	54.26	60.94	17.47	47
C.V.	0.13	0.87	1.09	0.82

*Sources: Annual Report of BN(T)L*

The above table shows that the receivable turnover and average collection period of the company. The receivable turnover and average collection period is looking good in last years rather than in first years. Receivable turnover is in increasing ratio and average collection period is in decreasing ratio, which is good for the company. We can see that the management of receivable is being better.

#### **4.2.6 Cash Conversion Cycle**

Cash conversion cycle is the period of recovering of cash investing to purchase raw materials and in paying operating expenses though the sales of finished products. It is calculated by the help of Inventory Conversion Period, Receivable Collection Period and Payable Deferred Period which are computed as below.

##### **4.2.6.1 The Inventory Conversion Period**

The Inventory Conversion Period is computed in the table given below.

**Table No. 4.11 Inventory Conversion Period**

*Rs. In '000,000'*

<b>Fiscal Year</b>	<b>COGS</b>	<b>Inventory</b>	<b>ICP in days</b>
2059/60	237	178	270
2060/61	239	134	202
2061/62	192	119	223
2062/63	188	108	207
2063/64	260	100	138
Average	223.2	127.8	208
S.D.	31.65	30.83	47
C.V.	0.14	0.24	0.23

*Sources: Annual Report of BN(T)L*

The above table shows that the average of Inventory Conversion Period for the study period is 208 days. The S.D. and C.V. of ICP is 47.42 and 0.23 respectively.

#### **4.2.6.2 Receivable Collection Period**

The Receivable Collection Period of the company is calculated and tabulated below.

**Table No. 4.12 Receivable Collection Period**

*Rs. In '000,000'*

<b>Fiscal Year</b>	<b>Sales</b>	<b>Receivable</b>	<b>RCP in days</b>
2059/60	461	127	100
2060/61	465	141	110
2061/62	401	57	52
2062/63	354	16	17
2063/64	485	11	9
Average	433.20	70.40	57
S.D.	54.26	60.94	46
C.V.	0.13	0.87	0.82

*Sources: Annual Report of BN(T)L*

The above table shows the Receivable Collection Period. In this table we can see that the average of RCP for the study period is 57 days. In this study period, there is very much deviation in RCP. The S.D. is 46 and C.V. is 0.82 for the study period.

#### **4.2.6.3 Payable Deferred Period**

The Payable Deferred Period for the company is calculated and tabulated below.

**Table No. 4.13 Payable Deferred Period***Rs. In '000,000'*

<b>Fiscal Year</b>	<b>COGS</b>	<b>Account Payable</b>	<b>PDP in days</b>
2059/60	237	154	234
2060/61	239	110	166
2061/62	192	119	224
2062/63	188	104	200
2063/64	260	152	211
Average	223.2	127.80	207
S.D.	31.65	23.63	27
C.V.	0.14	0.18	0.13

*Sources: Annual Report of BN(T)L*

The above table shows that the average of Payable Deferred Period of BN(T)L for the study period is 207 days which is greater than RCP. The S.D, and C.V. of PDP for the study period is 27 and 0.13 respectively.

With the help of Inventory Conversion Period, Receivable Collection Period and Payable Deferred Period, the Cash Conversion Cycle is calculated and tabulated below.

**Table No. 4.14 Cash Conversion Cycle***Rs. In '000,000'*

<b>Fiscal Year</b>	<b>ICP in days</b>	<b>RCP in days</b>	<b>PDP in days</b>	<b>CCP in days</b>
2059/60	270	100	234	136
2060/61	202	110	166	146
2061/62	223	52	224	51
2062/63	207	17	200	24
2063/64	138	9	211	-64
Average	208	57	207	58
S.D.	47	46	27	86
C.V.	0.23	0.82	0.13	1.48

*Sources: Annual Report of BN(T)L*

The above table shows the Cash Conversion Period of the company. The Cash Conversion Period is in decreasing trend. The average of CCP of the company for the study period is 58 days and the S.D. is 86 days. Although there is no any standard measurement low cash conversion cycle is preferable. The CCP for first two year is comparatively not good than remaining three year.

#### **4.2.7 Profitability Position**

Profit earning is the main objective of every business concern. They want to earn maximum profit or getting maximum return on investment. An ability to earn maximum profit from maximum use of available resources by the business organization is known as profitability. Profitability is the measure of efficiency and the search for it provides an incentive to achieve efficiency. The profitability position of a company can be measured by its profitability ratios, such as Gross Profit Margin, Net Profit Margin, Operating Ratio, Return on Total Assets, Return on Net worth and Return on Working Capital etc. The profitability position of the company is calculated and tabulated below.

##### **4.2.7.1 Gross Profit Margin**

Gross profit margin expresses the relationship between gross profit and sales. It is the profit which is obtained by deducting cost of goods sold from the net sales. This ratio measures the efficiency of the company and soundness of the management. Higher ratio is the sign of the better efficiency and good management. A low ratio reflects the higher cost of goods sold due to the company's inability to purchase at favorable terms. The Gross Profit Margin of BN(T)L is calculated and tabulated below.

**Table No. 4.15 Gross Profit Margin***Rs. In '000,000'*

<b>Fiscal Year</b>	<b>Gross Profit</b>	<b>Sales</b>	<b>Ratio in %</b>
2059/60	224	461	48.59
2060/61	227	465	48.82
2061/62	209	401	52.12
2062/63	166	354	46.89
2063/64	225	485	46.39
Average	210.20	433.20	48.56
S.D.	25.72	54.26	2.25
C.V.	0.12	0.13	0.05

*Sources: Annual Report of BN(T)L*

The above table shows that the margin of gross profit is looking same in every year of study. There is not much S.D. i.e. just 2.25 and C.V. is also just 0.05. The company maintained the same profit margin almost every year. The average of gross profit margin for the study period is 48.56%.

#### **4.2.7.2 Net Profit Margin**

Net profit is the profit which comes after deducting all the expenses from gross profit. Net profit margin indicates the management ability to operate the business with sufficient success. Higher profit is good for the company. The net profit margin of the BN(T)L is calculated and tabulated below.

**Table No. 4.16 Net Profit Margin***Rs. In '000,000'*

<b>Fiscal Year</b>	<b>Net Profit</b>	<b>Sales</b>	<b>Ratio in %</b>
2059/60	39	461	8.46
2060/61	25	465	5.38
2061/62	15	401	3.74
2062/63	(26)	354	-7.34
2063/64	25	485	5.15
Average	15.60	433.20	3.08
S.D.	24.77	54.26	6.08
C.V.	1.59	0.13	1.97

*Sources: Annual Report of BN(T)L*

The above table shows the Net Profit and profit margin on sales. The company earned profit for first three year and suffered from loss in fourth year and again earned profit in fifth year for the study period. The year 2062/63 is bad for the company because the company is in heavy loss at that year. The average of profit and profit margin on sales is 15.60 million and 3.08% respectively. The S.D. and C.V. of net profit margin for the study period is 6.08 and 1.97 respectively.

#### **4.2.7.3 Operating Ratio**

The operating ratio measures the efficiency of the company as regards to minimizing costs. The operating ratio establishes the relationship between total operation expenses and sales volume. It is an important ratio and explains the changes in the net profit margin ratio. Operating ratio is an indicator of operational efficiency.

The operating ratio of BN(T)L is calculated and tabulated below.



**Table No. 4.17 Operating Ratio***Rs. In '000,000'*

<b>Fiscal Year</b>	<b>Operating exp.</b>	<b>Sales</b>	<b>Ratio in %</b>
2059/60	390	461	84.60
2060/61	419	465	90.11
2061/62	363	401	90.52
2062/63	328	354	92.66
2063/64	429	485	88.45
Average	385.8	433.20	89.27
S.D.	41.37	54.26	3.01
C.V.	0.11	0.13	0.03

*Sources: Annual Report of BN(T)L*

The above table shows that the ratio of operating expenses to sales. There is not much deviation in operating expenses and operating ratio. The average of operating ratio for the study period is 89.27% that means the 89.27% of sales is investing in operating expenses. The S.D. and C.V. of the operating ratio for the study period is 3.01 and 0.03 respectively.

#### **4.2.8 Statistical Analysis**

##### **4.2.8.1 Correlation Analysis**

There are various ways of measuring the relationship existing between variables of an economic and social phenomenon. The simplest is correlation analysis. Generally there are three types of correlation namely simple, partial and multiple correlations. On the basis of number of variables involved in correlation analysis we have simple, partial and multiple correlations. Simple correlation measure the degree of simple relationship between the two variables. While computing the simple correlation, the effect of the other variables on their relationship is ignored. Simple correlation is also known as total correlation. When there

exist more than two variables under study. It is either partial or multiple correlations.

Here is the simple correlations coefficient of various variables with sales and gross profit calculated and tabulated below.

**Table No. 4.18 Correlation Analysis of Various Variables with Sales and Gross Profit**

<b>Variables</b>	<b>Correlation Coefficient(r)</b>	<b>Probable Error (P.E.)</b>
Inventory and Sales	0.33	0.23
Receivables and Sales	0.41	0.21
CA and GP	0.73	0.12
TA and GP	0.74	0.12
FA and GP	- 0.28	0.24
Cash and Bank balance and GP	0.37	0.22

*Sources: Appendix II-VII*

The above table shows the correlation coefficient of the related variables of the study with sales and gross profit. According to this table, the correlation coefficient of inventory and sales is positive but the significance level is low. The sales volume of the company changed in the direction of the volume of inventory changed.

The correlation coefficient of receivable and sales is positive. There are chances of increase sales while giving credit facilities.

The correlation coefficient of current assets and total assets with gross profit is positive and highly significant. It indicates that while the company increases its total assets and current assets the gross profit also increases.

The correlation coefficient of fixed assets and gross profit is negative. It indicates that the increasing in fixed assets is not profitable. The investment in fixed assets could not help to increase gross profit.

The correlation coefficient of cash and bank balance with gross profit is positive. It means the company can increase its cash and bank balance to increase the gross profit.

#### **4.2.8.2 Trend Analysis**

The trend analysis shows the future train of any variables based on the historical information. The expectations and growth situation of financial information can be made by the trend analysis.

#### **) Trend Analysis of Sales**

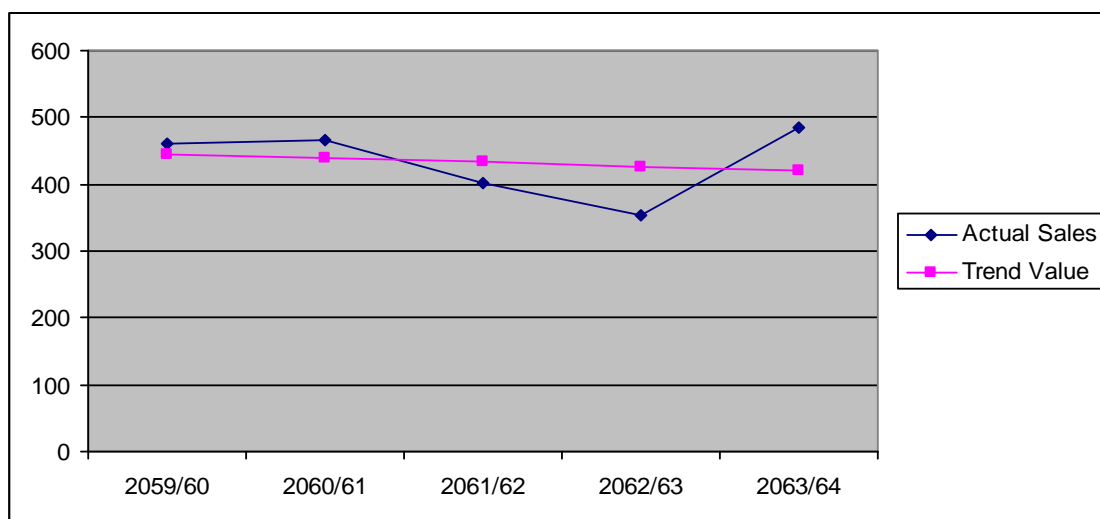
**Table No. 4.19 Trend Value and Actual Value of Sales**

*Rs. In '000,000'*

<b>Fiscal Year</b>	<b>Sales</b>	<b>Trend Value</b>
2059/60	461	445.8
2060/61	465	439.5
2061/62	401	433.2
2062/63	354	426.9
2063/64	485	420.6

*Sources: Appendix – VIII*

**Figure No. 4.1 Trend Analysis of Sales**



In the given figure Y axis shows the value of sales and X axis shows the study period. The figure and table shows the actual and trend value of sales. We can see at the table and figure the trend value, actual value, trend line and actual line is in decreasing trend. Although the sales volume of last year for the study period is higher than other, the trend is decreasing. It is because the sales of other years is decreasing and seems impact in as a whole sales trend. There is highly fluctuation in sales in forth and fifth year for the study period.

**) Trend Analysis of Net Profit**

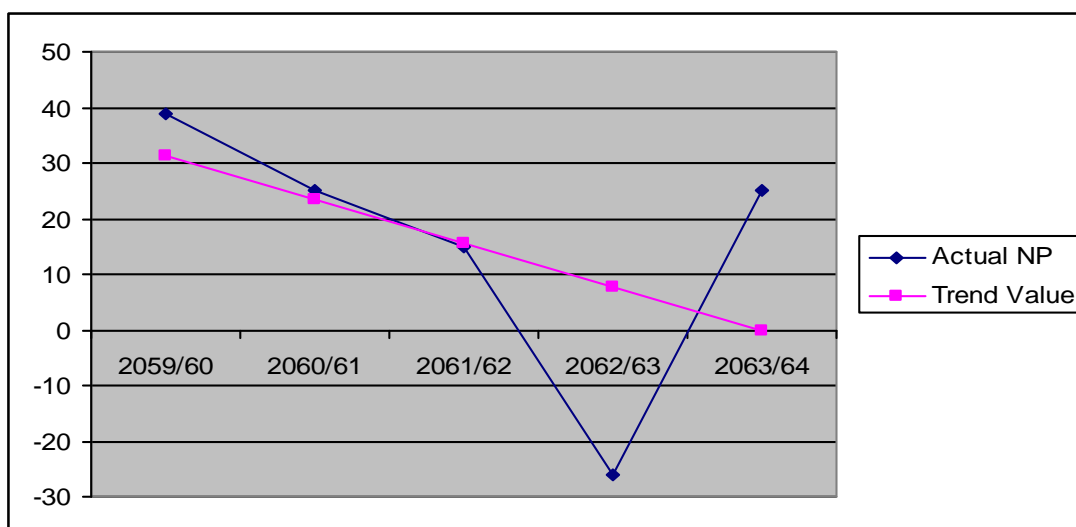
**Table No. 4.20 Trend Value and Actual Value of Net Profit**

*Rs. In '000,000'*

<b>Fiscal Year</b>	<b>Net Profit</b>	<b>Trend Value</b>
2059/60	39	31.4
2060/61	25	23.5
2061/62	15	15.6
2062/63	-26	7.7
2063/64	25	-0.2

*Sources: Appendix – IX*

**Figure No. 4.2 Trend Analysis of Net Profit**



In the given figure Y axis shows the value of Net Profit and X axis shows the study period. The figure and table shows the actual and trend value of net profit. We can see at the table and figure the trend value, actual value, trend line and actual line is in decreasing trend. Although the company earn profit except forth year in the study period, the profit is in decreasing trend. From this trend we can say that the profitability of the company is not looking good. There is very much fluctuation in profit. Especially in last years, there is very much ups and downs.

### ) Trend Analysis of Inventory

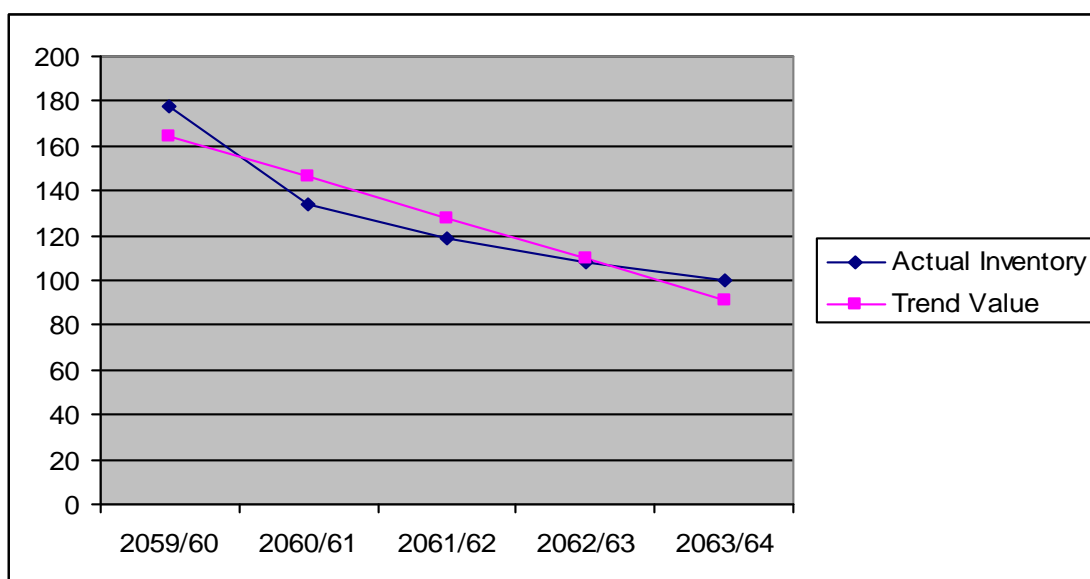
**Table No. 4.21 Trend Value and Actual Value of Inventory**

*Rs. In '000,000'*

Fiscal Year	Inventory	Trend Value
2059/60	178	164.2
2060/61	134	146
2061/62	119	127.8
2062/63	108	109.6
2063/64	100	91.4

*Sources: Appendix – X*

**Figure No. 4.3 Trend Analysis of Inventory**



In the given figure Y axis shows the value of Inventory and X axis shows the study period. The figure and table shows the actual and trend value of inventory. We can see at the table and figure the trend value, actual value, trend line and actual line is in decreasing trend. There is highly decrease in inventory in first to second year for the study period.

### ) Trend Analysis of Net Working Capital

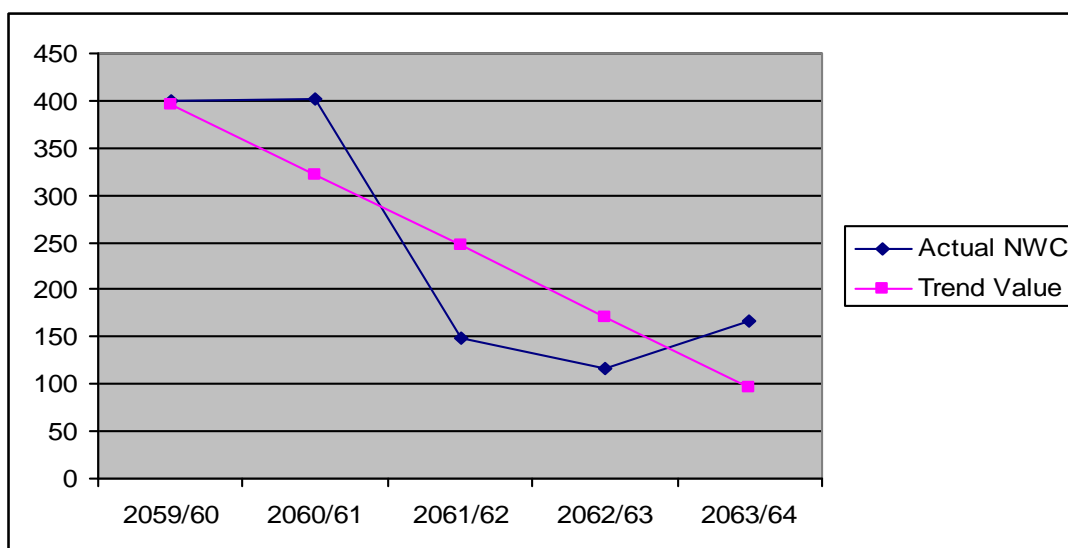
**Table No. 4.22 Trend Value and Actual Value of Net Working Capital**

*Rs. In '000,000'*

Fiscal year	Net Working Capital	Trend Value
2059/60	399	396.4
2060/61	402	321.4
2061/62	148	246.4
2062/63	116	171.4
2063/64	167	96.4

*Sources: Appendix - XI*

**Figure No. 4.4 Trend Analysis of Net Working Capital**



In the given figure Y axis shows the value of Inventory and X axis shows the study period. The figure and table shows the actual and trend value of inventory. We can see at the table and figure the trend value, actual value, trend line and actual line is in decreasing trend. The actual value of net working capital is highly decreased from third year comparatively with first and second year.

### **4.3 Major Findings**

The major findings of this study as revealed from the analysis are briefly described as below.

1. The major components of working capital are Inventories, Sundry debtors, Cash and bank balance. The average inventory is 127.80 million which is 35.22% of total current assets. The average debtor is 70.40 million which is 15.89% of total current assets. The average cash and bank balance is 26.20 million which is 7.01% of total current assets and last the average prepaid, advance, loan & deposit is 161.80 million which is 41.89% of total current assets.

2. The prepaid, advance, loan and deposits hold the highest portion i.e. 41.89% and cash and bank balance hold lowest portion i.e. 7.01% of total CA.
3. The average sales volume of the company for the study period is 433.20 million, where SD is 54.26 million and CV is 0.13.
4. The average CA of the company for the study period is 386.6 million, where SD and CV is 145.85 million and 0.38 respectively. The CA is higher than sales in first two years. The average portion of CA on sales is 87.85%.
5. The average Total Assets for the study period is 578.20 million. The average portion of CA on TA is 65.49 %, where the SD and CV is 14.50 million and 0.22 respectively.
6. The average Fixed Assets for the study period is 191.6 million with 76.03 million SD and 0.40 CV. The CA is higher than FA almost in every year. The average portion of CA on FA is 239.53%.
7. The liquidity position of the company is analyzed with the size of working capital, current ratio and quick ratio. The average of working capital for the study period is 246.4 million with 141.85 million SD and 0.57 CV.
8. The average current liabilities for the study period is 140.2 million, where SD and CV 25.39 million and 0.18 respectively. The average current ratio is 2.79 times.
9. The average quick ratio for the study period is 0.71 times, where SD and CV is 0.5 and 0.71 respectively.
10. The current assets turnover ratio for first two year is less than one and remaining three year is more than one. The average of CATR for



the study period is 1.22, where SD and CV is 0.34 and 0.28 respectively.

11. The average COGS for the study period is 223.2 million, where SD is 31.65 million and CV is 0.14. The average of ITR for the study period is 1.81 times with 0.47 SD and 0.26 CV.
12. The RTR for the study period is in increasing trends. The average RTR is 16.04 times, where SD and CV is 17.47 and 1.09 respectively. The average of average collection period (ACP) is 58 days, where SD is 47 days and CV is 0.82. There is very much variation in RTR and ACP.
13. The average of cash conversion cycle (CCC) for the study period is 58 days, where SD is 86 days and CV is 1.48. The cash conversion period in the year 2063/64 is occur in minus (-). The cash conversion period is in decreasing trend.
14. The profitability is the measure of efficiency. The profitability position has been analyzed from various angles. The average gross profit for the study period is 210.20 million, where SD and CV is 25.72 million and 0.12. There is no any gross loss on the study period. The average of gross profit margin is 48.56%, where SD and CV is 2.25 and 0.05 respectively. The GPM is almost same portion in every year.
15. The average of net profit for the study period is 15.16 million where 24.77 million SD and 1.59 CV. There is net loss of 26 million in the year 2062/63. The average NPM is 3.08%, where SD is 6.08 and CV is 1.97.

16. The correlation coefficient of inventory and sales is positive. It means the sales volume of the company is changed in the direction of the volume of inventory changed.
17. The correlation coefficient of receivable and sales is positive. It means the company easily can think of credit sales.
18. The correlation coefficient of current assets and total assets with gross profit is positive. It means the company can increase in investment of CA and TA to increase the gross profit.
19. The correlation coefficient of fixed assets with gross profit is negative. It means increasing in fixed assets will not increase the profit.
20. The correlation coefficient of cash and bank balance with GP is positive. It means there is chance of increase gross profit when increasing in cash and bank balance.

## CHAPTER FIVE

### SUMMARY, CONCLUSION AND RECOMMENDATION

#### 5.1 Summary

The modern financial management and its offshoot working capital management are abundantly used by corporate sector organization to improve their efficiency. A public sector enterprise also must take benefit from its own knowledge and competence by applying these techniques in its own organization for its betterment and effectiveness. Working capital management is a very sensitive area of financial management. The study mainly aimed at examine the working capital position in BN(T)L. The specific objectives where to analyze and asses the size, growth, liquidity, profitability and efficiency of working in BN(T)L. To fulfill the objectives described as in chapter one an appropriate research methodology has developed which includes the ratio analysis as financial tools, correlation coefficient and trend analysis as statistical tools. The major ratio analysis consists the composition of working capital position, turnover position, liquidity position, cash conversion cycle. Under these main ratios various analyses are made in chapter four. In order to test the relationship between various variables of working capital Karl Pearson's correlation coefficient ( $r$ ) is calculated and results are analyzed with respect to its probable error. The past trend and growth position also presented and analyzed in chapter four.

The necessary data are derived from the balance sheet and profit and loss a/c of BN(T)L. The other necessary information has taken from the annual report of the study period and direct concern as well. With the

help of the methodology describe in chapter three, these data are tabulated and analyzed in chapter four.

## **5.2 Conclusion**

After an analysis process the researcher has reached to conclude that the overall financial management of BN(T)L is quite satisfactory during the five years study period. There is efficient amount of current assets to meet the current obligations of he corporation which obviously is a sign of good liquidation position, and there is no problems of technical insolvency. The portion of current assets to total assets is high. The average portion of CA on TA for the study period is 65.49%, so it shows the company accepts the aggressive policy in investment. The cash conversion cycle is in decreasing trends, that means the management team do good work with respect to cash.

The correlation coefficient of inventory and receivables with sales is positive. It means that, if the investment in inventory and receivable increased the sales will increase. The correlation coefficient of CA, TA and cash & bank balance with gross profit is also positive. It means that if the company invests more amounts in CA, TA and cash & bank balance the gross profit will also increase. But the correlation coefficient of FA with gross profit is negative. It means that there will no good effects in gross profit while increasing in fixed assets.

The trend analysis shows that, most of the components like sales, net profit, inventory and working capital are in decreasing trends for the study period. But the sales, net profit and working capital is increased in the last year for the study i.e. the year 2063/64.

The company earns profit in every year except the year 2062/63. The company incurred losses of Rs 26 million at the year 2062/63. There has

been a impact of Rs 29 million driven by the additional depreciation charges due to changes in accounting policies in line with the International Financial Reporting System. There is no any gross loss in the study period.

At last the whole process shows that the overall condition of the company is not bad. The company has the bright future.

### **5.3 Recommendations**

Based on the finding of the study following recommendation are forwarded for the improvement of the working capital management of Bottlers Nepal (Terai) Limited.

#### **1. Optimize Liquidity Position**

BN(T)L being a product oriented firm, does need optimum liquidity position. Thus the corporation has been suggested to stabilize its current ratio near 2:1. Large amount of fund tied up in current assets may bypass the opportunity cost so it is better for BN(T)L to invest such excess amount in fixed assets to increase its capacity. The overall average current ratio is 2.79, so it is recommended to decrease it to 2 to grab the opportunities.

#### **2. Efficient Management of Current Assets**

The profitability of firm depends up on the effective management of current assets. The components of current assets; sundry debtors, inventory and cash portion is satisfactory whether portion of prepaid, advance, loan and deposits is more than other current assets. It results the mismanagement of current assets which tends to increase opportunity cost. So, it is recommended to decrease the portion of prepaid, advance, loan and deposits. The investment on unproductive sector of current assets should be discouraged for increasing productivity of the firm.

### **3. Sound Collection Policy**

The trends of account receivable decreasing year to year, hence the RCP is also decreasing. It shows the collection policy of the firm is in better position. But it is not in satisfactory position. So, it is recommended to decrease RCP as much as short period of time.

### **4. Appropriate Level of Working Capital**

The researcher found that the company use relaxed working capital investment policy. But the net working capital decrease continuously. For effective and appropriate management of working capital it is recommended to continue the existing policy of working capital.

### **5. Minimizing the Operating Cost**

The management of the company should give due attention to the minimization of administrative and operating expenses in the company. The unskilled manpower, overstaffing, unnecessary expenses and misuse of facilities or heavy expenses on overhead in the factory may be causes for the higher operating cost. To overcome these problems the company should adopt various actions like there should be systematic purchasing system, appropriate number of skilled manpower and control the unnecessary overhead cost.

### **6. Fixed Assets Management Policy**

The one reason of loss for the fiscal year 2062/63 is to change of depreciation policy of fixed assets. The company charged Additional 29 million as depreciation. The loss may gives bad news to public, so it is recommended that the company had to think seriously before change the policy.

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## Appendix – I

### Summary of Used Financial Variables

*Rs. In '000,000'*

<b>Particulars</b>	<b>2059/60</b>	<b>2060/61</b>	<b>2061/62</b>	<b>2062/63</b>	<b>2063/64</b>
Sundry Debtors	127	141	57	16	11
Inventories	178	134	119	108	100
Cash & Bank	46	22	15	21	27
Prepaid, Adv, Loan	211	221	107	79	191
Current Assets	561	519	299	225	329
Sales	461	465	401	354	485
Total Assets	688	688	619	419	497
Fixed Assets	126	149	320	194	169
Current Liabilities	162	117	151	109	162
Quick Assets	172	164	73	38	38
COGS	237	239	192	188	260
Account Payable	154	110	119	104	152
Gross Profit	224	227	209	166	225
Net Profit	39	25	15	(26)	25
Operating Expenses	390	419	363	328	429

*Sources: Annual Report of BN(T)L*

## Appendix – II

Computation of correlation coefficient between inventory and sales volume with the probable error of correlation coefficient, Let the inventory be denoted by x and the sales volume by y.

Fiscal year	X	Y	XY	X <sup>2</sup>	Y <sup>2</sup>
2059/60	178	461	82058	31684	212521
2060/61	134	465	62310	17956	216225
2061/62	119	401	47719	14161	160801
2062/63	108	354	38232	11664	125316
2063/64	100	485	48500	10000	235225

*Sources: Annual Report of BN(T)L*

We have,

$$\text{Correlation coefficient (r)} = \frac{N \sum XY - \sum X \sum Y}{\sqrt{N \sum X^2 - (\sum X)^2} \sqrt{N \sum Y^2 - (\sum Y)^2}}$$

Putting the value from the table in the given formula

We obtain, r = 0.33

Computation of probable error of correlation coefficient

We have,

$$\text{PEr} = 0.5745 \frac{1 - r^2}{\sqrt{N}}$$

Putting the value of r in the formula

We obtain, PEr = 0.23

### Appendix – III

Computation of correlation coefficient between receivable and sales volume with the probable error of correlation coefficient, Let the receivable be denoted by x and the sales volume by y.

Fiscal year	X	Y	XY	X <sup>2</sup>	Y <sup>2</sup>
2059/60	127	461	58547	16129	212521
2060/61	141	465	65565	19881	216225
2061/62	57	401	22857	3249	160801
2062/63	16	354	5664	256	125316
2063/64	11	485	5335	121	235225

*Sources: Annual Report of BN(T)L*

We have,

$$\text{Correlation coefficient (r)} = \frac{N \sum XY - \sum X \sum Y}{\sqrt{N \sum X^2 - (\sum X)^2} \sqrt{N \sum Y^2 - (\sum Y)^2}}$$

Putting the value from the table in the given formula

We obtain, r = 0.41

Computation of probable error of correlation coefficient

We have,

$$\text{PEr} = 0.5745 \frac{1 - r^2}{\sqrt{N}}$$

Putting the value of r in the formula

We obtain, PEr = 0.21

## Appendix – IV

Computation of correlation coefficient between current assets and gross profit with the probable error of correlation coefficient, Let the current assets be denoted by x and the gross profit by y.

Fiscal year	X	Y	XY	X <sup>2</sup>	Y <sup>2</sup>
2059/60	561	224	125664	314721	50176
2060/61	519	227	117813	269361	51529
2061/62	299	209	62491	89401	43681
2062/63	225	166	37350	50625	27556
2063/64	329	225	74025	108241	50625

*Sources: Annual Report of BN(T)L*

We have,

$$\text{Correlation coefficient (r)} = \frac{N \sum XY - \sum X \sum Y}{\sqrt{N \sum X^2 - (\sum X)^2} \sqrt{N \sum Y^2 - (\sum Y)^2}}$$

Putting the value from the table in the given formula

We obtain,  $r = 0.73$

Computation of probable error of correlation coefficient

We have,

$$\text{PEr} = 0.5745 \frac{1 - r^2}{\sqrt{N}}$$

Putting the value of r in the formula

We obtain,  $\text{PEr} = 0.12$

## Appendix – V

Computation of correlation coefficient between Total Assets and Gross Profit with the probable error of correlation coefficient, Let the current assets be denoted by x and the gross profit by y.

Fiscal Year	X	Y	XY	X <sup>2</sup>	Y <sup>2</sup>
2059/60	688	224	154112	473344	50176
2060/61	668	227	151636	446224	51529
2061/62	619	209	129371	383161	43681
2062/63	419	166	69554	175561	27556
2063/64	497	225	111825	247009	50625

*Sources: Annual Report of BN(T)L*

We have,

$$\text{Correlation coefficient (r)} = \frac{N \sum XY - \sum X \sum Y}{\sqrt{N \sum X^2 - (\sum X)^2} \sqrt{N \sum Y^2 - (\sum Y)^2}}$$

Putting the value from the table in the given formula

We obtain, r = 0.74

Computation of probable error of correlation coefficient

We have,

$$\text{PEr} = 0.5745 \frac{1 - r^2}{\sqrt{N}}$$

Putting the value of r in the formula

We obtain, PEr = 0.12

## Appendix – VI

Computation of correlation coefficient between Fixed Assets and Gross Profit with the probable error of correlation coefficient, Let the Fixed Assets be denoted by x and the Gross Profit by y.

Fiscal Year	X	Y	XY	X <sup>2</sup>	Y <sup>2</sup>
2059/60	126	224	28224	15876	50176
2060/61	149	227	33823	22201	51529
2061/62	320	209	66880	102400	43681
2062/63	194	166	32204	37636	27556
2063/64	169	225	38025	28561	50625

*Sources: Annual Report of BN(T)L*

We have,

$$\text{Correlation coefficient (r)} = \frac{N \sum XY - \sum X \sum Y}{\sqrt{N \sum X^2 - (\sum X)^2} \sqrt{N \sum Y^2 - (\sum Y)^2}}$$

Putting the value from the table in the given formula

We obtain, r =- 0.28

Computation of probable error of correlation coefficient

We have,

$$\text{PEr} = 0.5745 \frac{1 - r^2}{\sqrt{N}}$$

Putting the value of r in the formula

We obtain, PEr = 0.24

## Appendix – VII

Computation of correlation coefficient between Cash and Bank Balance and Gross Profit with the probable error of correlation coefficient, Let the Cash and Bank Balance be denoted by x and the Gross Profit by y.

<b>Fiscal Year</b>	<b>X</b>	<b>Y</b>	<b>XY</b>	<b>X<sup>2</sup></b>	<b>Y<sup>2</sup></b>
2059/60	46	224	10304	2116	50176
2060/61	22	227	4994	484	51529
2061/62	15	209	3135	225	43681
2062/63	21	166	3486	441	27556
2063/64	27	225	6075	729	50625

*Sources: Annual Report of BN(T)L*

We have,

$$\text{Correlation coefficient (r)} = \frac{N \sum XY - \sum X \sum Y}{\sqrt{N \sum X^2 - (\sum X)^2} \sqrt{N \sum Y^2 - (\sum Y)^2}}$$

Putting the value from the table in the given formula

We obtain,  $r = 0.37$

Computation of probable error of correlation coefficient

We have,

$$\text{PEr} = 0.5745 \frac{1 - r^2}{\sqrt{N}}$$

Putting the value of r in the formula

We obtain,  $\text{PEr} = 0.22$



## Appendix – VIII

Computation of the value of straight line trend of Sales with the help of least square method,

Let the deviation of the year from 2059/60 and be denoted by x and the Sales by y,

Fiscal Year	X	Y	XY	X <sup>2</sup>	Trend value (Yc)
2059/60	-2	461	-922	4	445.8
2060/61	-1	465	-465	1	439.5
2061/62	0	401	0	0	433.2
2062/63	1	354	354	1	426.9
2063/64	2	485	970	4	420.6

Sources: Annual Report of BN(T)L

The straight line Trend equation is given by,

$$Y_c = a + bx$$

Since  $X=0$

$$a = \frac{Y}{N} \quad a = \frac{2166}{5} \quad a = 433.2$$

$$b = \frac{XY}{X^2} \quad b = \frac{-63}{10} \quad b = -6.3$$

Then,

putting the value in given formula,

$$Y_c = a + bx$$

$$= 433.2 + -6.3x$$

## Appendix – IX

Computation of the value of straight line trend of Net Profit with the help of least square method,

Let the deviation of the year from 2059/60 and be denoted by x and the Net Profit by y,

<b>Fiscal Year</b>	<b>X</b>	<b>Y</b>	<b>XY</b>	<b>X<sup>2</sup></b>	<b>Trend value (Yc)</b>
2059/60	-2	39	-78	4	31.4
2060/61	-1	25	-25	1	23.5
2061/62	0	15	0	0	15.6
2062/63	1	-26	-26	1	7.7
2063/64	2	25	50	4	-0.2

*Sources: Annual Report of BN(T)L*

The straight line Trend equation is given by,

$$Y_c = a + bx$$

Since  $X=0$

$$a = \frac{Y}{N} \quad a = \frac{78}{5} \quad a = 15.6$$

$$b = \frac{XY}{X^2} \quad b = \frac{-79}{10} \quad b = -7.9$$

Then,

Putting the value in given formula,

$$Y_c = a + bx$$

$$= 15.6 + -7.9x$$

## Appendix – X

Computation of the value of straight line trend of Inventory with the help of least square method,

Let the deviation of the year from 2059/60 and be denoted by x and the Inventory by y,

<b>Fiscal Year</b>	<b>X</b>	<b>Y</b>	<b>XY</b>	<b>X<sup>2</sup></b>	<b>Trend value (Yc)</b>
2059/60	-2	178	-356	4	164.2
2060/61	-1	134	-134	1	146
2061/62	0	119	0	0	127.8
2062/63	1	108	108	1	109.6
2063/64	2	100	200	4	91.4

*Sources: Annual Report of BN(T)L*

The straight line Trend equation is given by,

$$Y_c = a + bx$$

Since  $X=0$

$$a = \frac{Y}{N} \quad a = \frac{639}{5} \quad a = 127.8$$

$$b = \frac{XY}{X^2} \quad b = \frac{-182}{10} \quad b = -18.2$$

Then,

Putting the value in given formula,

$$Y_c = a + bx$$

$$= 127.8 + -18.2x$$

## Appendix – XI

Computation of the value of straight line trend of Net Working Capital with the help of least square method,

Let the deviation of the year from 2059/60 and be denoted by x and the Net Working Capital by y,

<b>Fiscal Year</b>	<b>X</b>	<b>Y</b>	<b>XY</b>	<b>X<sup>2</sup></b>	<b>Trend value (Yc)</b>
2059/60	-2	399	-798	4	396.4
2060/61	-1	402	-402	1	321.4
2061/62	0	148	0	0	246.4
2062/63	1	116	116	1	171.4
2063/64	2	167	334	4	96.4

*Sources: Annual Report of BN(T)L*

The straight line Trend equation is given by,

$$Y_c = a + bx$$

Since  $X=0$

$$a = \frac{Y}{N} \quad a = \frac{1232}{5} \quad a = 246.4$$

$$b = \frac{XY}{X^2} \quad b = \frac{-750}{10} \quad b = -75$$

Then,

Putting the value in given formula,

$$Y_c = a + bx$$

$$= 246.4 + -75x$$