

**FINANCIAL PERFORMANCE EVALUATION OF
HYDROPOWER COMPANIES IN NEPAL**
(A Comparison between Butwal Power Company Limited and Himal Power Limited)

A THESIS

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Submitted To:
Office of the Dean
Faculty of Management
Tribhuvan University

**In Partial Fulfillment of the Requirements for the
Degree of Masters of Business Studies (M.B.S)**

New Baneswor, Kathmandu
February, 2010

RECOMMENDATION

This is to certify that the thesis

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**FINANCIAL PERFORMANCE EVALUATION OF HYDROPOWER COMPANIES IN NEPAL
(A Comparison between Butwal Power Company Limited and Himal Power Limited)**

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DECLARATION

I hereby declare that the work reported in this thesis entitled **FINANCIAL PERFORMANCE EVALUATION OF HYDROPOWER COMPANIES IN NEPAL (A Comparison between Butwal Power Company Limited and Himal Power Limited)** have submitted to Faculty of Management, Tribhuvan University is my Original work. It is done in the form of partial fulfillment for the Master of Business Studies (M.B.S) under the supervision of Prof. Dr. Bihari Binod Pokharel, Head of Research Department of Nepal Commerce Campus.

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ACKNOWLEDGEMENTS

This thesis has been prepared to fulfill the partial requirements for the Degree of Master of Business Studies (M.B.S), Tribhuvan University, Nepal. In the process of preparation of this thesis, I got a lot of inspiration, Co-operation and Suggestion from various persons.

Firstly, I owe a debt of gratitude to my respected thesis adviser Prof. Dr. Bihari Binod Pokharel, Head of Research Department of Nepal Commerce Campus for their valuable support and suggestion in the process of preparation of this thesis. I am extremely indebted by their efforts despite of their busy schedule.

I am very much grateful to Mr. Aananda Pokhrel (Board Member of NEA), Dr. Sandip Shah (President of IPPAN), Mr. Pradeep Gangol (Executive Manager of IPPAN), Mr Khadk Bahadur Bisht (Project Development Manager of HPL) and Mr. Ram Bhakta Karki (Deputy General Manager of BPC) for Providing required data and Information. It was a great opportunity for me to learn things from them where I could secure valuable experience.

In the mean time, I also extend my gratitude to all the respective teachers and library staffs of Nepal Commerce Campus and Central Library of T.U, my family and friends. My special thanks go to my wife Kabita Khadka (Thapa), who formally and informally supported me in different ways for improving and completing this study.

February, 2010

Prakash Khadka

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ABBREVIATIONS

ACP	-	Average Collection Period
A.D	-	Amino domino
APN	-	Alliance Power Nepal Private Limited
AVHP	-	Arun Valley Hydropower Development Company Limited
BKPC	-	Bhotekoshi Power Company Private Limited
BPC	-	Butwal Power Company Limited
B.S	-	Bikram Sambat
BOOT	-	Build – Operate – Own – Transfer
CHPCL	-	Chilime Hydropower Company Limited
CETR	-	Capital Employed Turnover Ratio
CR	-	Current Ratio
CV	-	Coefficient of Variation
D/E	-	Debt to Shareholders Equity
DPR	-	Dividend Payout Ratio
DPS	-	Dividend per Share
DTAR	-	Debt to Total Assets Ratio
DTR	-	Debtors Turnover Ratio
EPS	-	Earning Per Share
FATOR	-	Fixed Assets Turnover Ratio
F/Y	-	Fiscal Year
HEP	-	Hydro Electricity Project
HPL	-	Himal Power Limited
INPS	-	Independent Power Producers
IPPAN	-	Independent Power Producers Association of Nepal
KHL	-	Khudi Hydropower Limited
KHPC	-	Khoranga Hydropower Limited
KSHP	-	Kathmandu Small Hydropower Limited
KW	-	Kilowatt
LEDCO	-	Lamjung Electricity Development Company
Ltd.	-	Limited
MW	-	Megawatt
NEA	-	Nepal Electricity Authority
NEPSE	-	Nepal Stock Exchange
NHPC	-	National Hydropower Company Limited
No.	-	Number
NPR	-	Net Profit Ratio
NRs	-	Nepali Rupees
OER	-	Operating Profit Ratio
OPR	-	Operating Profit Ratio
PE	-	Probable Error of Correlation Coefficient
PPA	-	Power Purchase Agreement

Pvt.	-	Private
OR	-	Quick Ratio
RHPD	-	Rairang Hydropower Development Company Private Limited
ROSHE	-	Return on Shareholders' Equity
ROTA	-	Return on Total Assets
SBC	-	Sange Bidyut Company Limited
SHPL	-	Sanima Hydropower Company Private Limited
SWOT	-	Strengths, Weakness, Opportunities and Threats
TATOR	-	Total Assets Turnover Ratio
T.U.	-	Tribhuvan University
UHC	-	Unique Hydrel Company Private Limited
VDC	-	Village Development Committee

CHAPTER-I

INTRODUCTION

1.1. Background of the Study

Nepal is rich in natural endowments hydro potential, natural beauties, diverse flora, fauna and many different tribes and ethnic group. Hydropower generation is one of the four main economic growth sectors. Linking biodiversity and hydro-energy provide great promise for the economic prosperity of the country.

Hydropower is a vital input needed to fuel the engine of economic growth and to fulfill the basic needs of the entire population of a country. Energy differentiates a developed or developing economy from a developed economy. Empirical evidence suggests that lack of energy can whittle down the pace of economic development while its abundance can stimulate the development. Data show that on an average an American consumes approximately 40 percent more energy than an Indian does. This stark gap in consumption levels may safely be attributed to the government's failure to maintain an appropriate ratio of hydel and thermal power and not properly harnessing hydropower that is possible only through the construction of large river valley projects. Apart from storing water, river valley projects not only produce electricity but also ensure cleanliness of the air in the process.

Hydropower is the most critical input for agricultural, industrial production, it & telecommunications and raising the quality of life of people. The government's own statements amply confirm that it is well aware that the "marginal productivity" of power in the rest of the economy is far greater than the cost of power. This means that power in rest of the economy is far greater than the cost of power. This means that power development ought to be the top most economic priority of the state. It also means that there is an opportunity for deficit financing of power projects, so that the required additions to capacity to match demand need not suffer for want of resources. Only a dogmatic monetarist position would insist on identifying the finances for power development with required additions to capacity to match demand need not suffer for want of resources .only a dogmatic monetarist position would insist on identifying the finances for power development with required savings for the economy as a whole. Deficit financing in

the case of power (if tight implementation schedules can be adhered to) need to be inflationary given the extremely high marginal product of power in industry and agriculture with the extra power availability, if output can go up.

Hydropower projects in Nepal have been deemed to be expensive primarily because of the fact that cost of access roads and power evacuation transmission lines are added on to the hydropower projects cost. As well all know, most of the better hydropower projects sites are in remote mountainous locations requiring construction of access roads prior to projects construction. This along with the high voltage power evacuation system renders power from these projects comparatively expensive. This can lead to hydropower projects losing their competitive advantage with respect to other sources in the energy market. It is in this context that government of Nepal, donor agencies and multilateral lending agencies should change their focus towards development of trunk highways in the major river valleys of Nepal. Similarly, high voltage trunk transmission lines should also be developed in these river valleys. This will lead to opening up these river valleys for private power producer companies to develop power projects around these rivers and their tributaries resulting in less expensive power and adding to the competitive advantage that this clean from of energy has.

An ideal way to develop the medium to larger scale projects in Nepal would be through private-public partnership. Since this scale of projects involves larger risks with more expensive risk-mitigating measure, sharing of risks, capital investment and benefits would be the preferred way to develop these projects.

The private sector is taking greater strides towards economic activities such as power project development and believes that it should have a greater role in the decision- making process of the government when it comes to national economic issues and also in bilateral and multilateral issues which have a direct impact on this industry.

1.1.1. The Potentiality of Nepalese Hydropower Sector

The hydropower sector clearly has tremendous potential for contributing to growth and development impact and benefits. It is estimated that Nepal has the capacity to generate 83,000

MW of electricity from hydropower. Of this, about 45,000 MW is considered economically feasible. At present, the installed capacity of hydropower is about 556.4 MW, less than 2 percent of the total economically feasible Capacity. Of this, 156 MW or about 28 percent, is produced by private public sector power producers. Taking advantage of the new policy of welcoming private foreign investment in this Sector, two joint-business companies involving important foreign investors have been generating and selling hydro power on the build-operate-transfer basis for some years now. Several private-public sectors projects are under construction.

Even then, it is estimated that the electricity accounts for a very small share of the total energy Consumption in the country. Fuel wood accounts for roughly 75 percent of the total energy consumption. Right now only a small percentage of the country's population, less than 20 percent, is using electricity for home consumption.

On the other hand there are excellent prospects for power exports of significant volume of electricity from Nepal to India. The time is right to explore the possibilities and invest in it. Moving in this direction would be in line with the increasing trade and economic cooperation between Nepal and India. There will also be significant markets for domestic consumption of electricity with economic growth and business and industrial expansion. As expected.

The range of the project for FDI in Nepal right now in terms of generation capacity and or the size of investment are very large hydro-power projects. There is thus a wide range of investment opportunities.

A large number of well studied projects of various scales and size are already available for investment and the government is ready to invite private capital- domestic and foreign to take these on to invest in them. In the past the planners have lost a lot of time talking about the hydro power potential to contribute to the country's prosperity, But with little real action and actual project implementation. However the last decades saw important beginning of a real change. With not only proper legislation and policy framework in place, but also the implementation of a number of small hydro power projects with Private Sector investment.

1.2. Focus of the Study

Evaluation of financial Performance side of Private and public hydropower companies has not been so focused up to now. And the research in this field is lacking. It would be a new and meaningful study in the study of hydropower sector. This analysis would be helpful to the concerned people, who are interested to get some ideas in this sector. It would also be helpful to the researchers as well as to the private and public sector for making policies and plans in the related field. Basically this research work is concerned with the financial performance evaluation of selected two hydropower companies.

1.3. Statement of the Problems

Nepal has an enormous hydropower potential, the prospects of becoming a prosperous country can be realized provided this energy source could be tapped prudently and efficiently at the earliest. As a leader of the countries power sector, NEA has the prime responsibility of taking necessary steps towards achieving this goal.

To get the private sector sustained it needs enough income for its shareholders and employee. By keeping other factors constant, income can be increased by better performance which increases efficiency and effectiveness of human and non human production factors. BPC and HPL also have their own capital mix, management, employees and assets. This study tries to seek that the company's overall performance is good, better or worse.

Finance is one of the most important functional areas of a business. It is concerned with generation, transmission, distribution and other function of any business including independent power products. The problem toward which this study's directed is to identify and analyze the financial strengths and weakness of hydropower companies of Nepal. Here BPC and HPL. Besides the study attempts to seek answer of the following questions.

- What is the financial positions and performance of the companies?
- Do the Financial Ratios best describe the performance of these hydropower companies?
- What types of contemporary steps are essential for performance improvement of Nepalese hydropower companies?
- What level of satisfaction on provided to the stakeholders by these private-public sectors hydropower companies?

- Which company is more effective and efficient of financial performance?
- Do the private and public power producer companies feel secure to invest in the Nepalese hydropower sectors?

Financial Evaluation may not provide exact answer to these questions but it does indicate what can be expected in the future.

1.4. Objectives of the Study

The study basically aims to evaluate the financial performance of Butwal Power Company Limited (BPC) and Himel Power Limited (HPL) and to suggest recommendation based upon it the specific objectives of the study will be:

- i) To study and analyze the financial performance of BPC and HPL and draw comparative conclusions through financial evaluation taking relevant variables.
- ii) To identify major strengths and weaknesses of BPC and HPL.
- iii) To study and examine the present trends of financial performance of Private – Public participations in Hydropower Sectors.
- iv) To provide necessary suggestions on the basis of study findings.

1.5. Significance of the Study

Analysis of financial position and statement is a crucial part of financial decision making process of a business enterprise. Poor financial management affects adversely on liquidity turnover and profitability. It is required to measure the financial position of the business big or small. HPL is one of the promising names in the sector of power generation business and the first private sector of hydropower.

Nepal as a developing country needs more and more new energy success to meet the ever increasing demand for socio-economic development and industrialization of the country. In this back drop, hydropower is the only resource available abundantly in all hilly and mountainous parts of the country. Access to electricity promotes new economic activities, empowers women by reducing domestic drudgery in firewood collection, improves health and education service and provides a cleaner and healthier home environment.

This study attempts to provide information and draw the attention of private and non governmental agencies that are willing to invest in hydropower projects in Nepal.

This study also expects to provide some appropriate measures to solve financial problems of Nepalese private public sector hydropower companies if any researchers who are interested in the study of the financial performance of similar hydropower business may find this study of use.

1.6. Limitations of the Study

The main purpose of this study is to conduct a crucial research on the financial performance evaluation of private Public hydropower sector for the partial fulfillment of MBS degree. In this way this study possesses some limitations that are mentioned as follows:

- The study covers a period 7 years from the first fiscal year 2002/03 to the recent fiscal year 2008/09 of BPC and HPL but the main focus is on financial factors.
- The secondary data is basic input of the study and thus accuracy of conclusions derived from them highly depends upon the reliability of these data.
- Since the study is mainly concerned with BPC and HPL out of various hydropower companies in operation, the conclusion drawn from the study, and suggestions offered may not be applicable to any other private or public hydropower companies.
- Resources (Time, Money etc) are limited.
- This study may not be precise as it is to fulfill the partial requirement of the MBS Program.

1.7. Organization of the Study

The aim of the dissertation is to explain the financial position of Nepalese private or public hydropower companies, Here BPC and HPL. The study has been divided into five chapters is devoted to some aspects of the study. The major chapters of the study are as follows:

Chapter One: Introduction

This chapter deals with the initial propose of the thesis incorporated with a view to explain in detail the aspect of hydropower development and a brief overview of private or public hydropower companies. It includes brief introduction of selected two hydropower companies. In

this chapter background of the study, focus of the study, statement of the problems, objectives of the study, limitation of the study and organization of the study are also mentioned.

Chapter Two: Review of Literature

The chapter of conceptual framework and review of literature mainly includes related study on the same topics and introduces conceptual framework. Various available literature regarding findings and recommendation of previous research work made in respect of NEA and any private public hydropower company/ plant.

Chapter Three: Research Methodology

Research methodology is discussed in the third chapter which includes research design, population and Sample, sources of data, Data collection Techniques, Data analysis tools and Research Variables.

Chapter Four: Data Presentation and Analysis

This chapter presents the analysis, interpretation and findings of results of financial performance of the selected samples companies.

Chapter Five: Summary, Conclusion and Recommendations

The last chapter of the study covers summary, conclusions of the study and recommendations and suggestions for the further improvement.

CHAPTER-II

REVIEW OF LITERATURE

2.1. Theoretical Framework

Review of literature is the Process of learning and Understanding the concept of the related topic. After selecting the topic of research, Researchers should study different Materials (like Books, Journals, Magazines, Newspapers, Articles etc) to collect the information's about the subject Matter of the Study. This process of studying different education Materials which are related with the selected topic of the research is called "review of Literature". In other words Review of Literature means to collect the necessary information about the research topic through the different sources. After the deep study of conclusions, merits, demerits etc. May be known and further research can be conducted (Silwal, 2062: 13).

In this Chapter the Review of various books, research studies have been made to make clear about the concept of performance analysis as well as to recall the theories and previous studies made by various researchers. Nepal being one of the rich countries in hydropower Sector, Many important literatures are available in this field. This chapter Reviews the available literature relating to hydropower sector and various expressed by various Scholars and researchers on the financial performance of private and public enterprises.

2.1.1. Conceptual Framework

2.1.1.1. Financial Analysis

Financial Analysis is designed to determine the relative strengths and weakness of a company, whether the company is financially sound and profitable relative to other companies in its industry and whether its position is improving or deteriorating over time. Investors need such information in order to estimate future cash flows from the company and to evaluate the riskiness of these flows. Managers need to be aware of their company's financial positions in order to detect potential problems and to strengthen weakness (Weston & Brigham, 1987:259).

Financial Analysis is the key tool for financial decision and starting point for making plan before using sophisticated forecasting and budgeting procedures. The value of this approach is the quantitative relation that can be used to diagnoses strengths and weakness in a company's performance. Financial Performance is the main indicator of the success or failure of a company. The focus of financial statements and significant relationship that exists between them (Khan & Jain, 1999: 4.1).

Financial performance analysis involves the use of various financial statements. The financial statements contain summarized information of a company's financial affairs, organized systematically by the top management. These statements are used by investors and financial analysis is to examine the company's performance in order to make investment decision (Pandey, 1999: 29.30).

Financial Statements are prepared from the accounting records maintained by the company. They disclose financial information of a company during a financial year and explain what has actually happened and divided over the past few years, in the form of income statement and balance sheet.

2.1.1.2. Financial Statements

The Financial Statements contain summaries information organized systematically of the firm's financial affairs. Preparations of the financial statements are used by investors and financial analysts to examine the firm's performance in order to make investment decisions. Financial statement discloses financial information relating to any business concern during a financial year, which is presented in the form of income statement and balance sheet usually prepared at the end of each financial year.

Financial statement reports what has actually happened to earnings and dividend over the past few years. Financial statements are prepared from the accounting records maintained by the enterprises. The basic objective of financial statements is to assist in decision making. Evidently comprise the income statement, and balance sheet.

Income Statement

The income statement presents a summary of revenues and expenses of a firm for the specific period, the period could be month, quarter, six months or a year depending on the time period for which revenues and expenses are summarized (Paudel R.B & other four writers, 2007: 27).

Balance Sheet

The balance sheet or statement of financial position portrays the financial structure of the company in terms of its economic resources and respective interests or claims on such resources. A balance sheet shows the financial position of a company by detailing the sources of funds and the utilization of these funds properly classified and arranged in a specific manner. It communicates information about the assets and liabilities and owners' Equity of a company as on a specific date usually at the end of each financial year.

2.1.1.3 Financial Statements Analysis

The financial statement analysis reveals how far the dreams and ambitions of the top management have been converted into reality during each financial year. It involves a comparison of a firm's performance with that of other firms in the same line of business, which is often identified by the firm's industry classification. Generally speaking the analysis is used to determine the firm's financial position in order to identify its current strengths and weaknesses and to suggest actions that might enable the firm to take advantage of its strengths and correct weaknesses (Weston & Brigham, 1987: 259).

Essentially, the function of financial statements is to convey to the reader, in such form certain fundamental information regarding the financial health of a company at a particular point in time. The economic results of its operations for a given period of time, together with a review of the causes for change in components of the company's financial structure over a period of time (Lynch & Williamson, 1983: 465)

2.1.1.4. Tools of Financial Statement Analysis

Analysis and interpretation of financial statement can be done through various techniques for analyzing comparative financial statement fund flow; ratio analysis and rest of hypothesis techniques are widely used.

2.1.1.4.1. Comparative Financial Statement

Comparative Financial statements are statements of the financial position of a business so designed as to provide time prospective to the consideration of various elements of financial positions of embodied in such statements. The focus of the financial analysis is on key figures contained in the financial statements and significant relationship that exists between them (Khan & Jain, 199279).

Financial analysis may be of two Types viz. Vertical analysis and horizontal analysis. Financial statement like a balance sheet or a profit and loss account, of a certain period of the business at a point of time is known as vertical analysis.

It is also known as state analysis. In horizontal analysis a series of statement relating to number of years are reviewed and analyzed. It is also known as dynamic analysis because it measures the change of position or trend of the business over a number of years. This study is based on horizontal analysis. The balance sheets and income statement which is alone are prepared in a comparative form because they are must important statements of financial position.

2.1.1.4.2 Comparative Balance Sheet

Balance sheet is the statement prepared at the end of each financial year to reflect the position of assets, liabilities and capital. Increase and decrease in various assets and liabilities as well as proprieties equity or capital brought, about by the conduct of a business can be absorbed by a comparison of the balance sheet at the beginning and end of the period, such observation after yield considerable information which is valuable in forming an opinion regarding the progress of the enterprises and to facilitate comparison, a single device known as the comparative balance sheet may be used.

Comparative balance sheet is the tool of financial statement analysis. Balance sheets of at least two years are compared and the changes between data are indicated in absolute amount as well as in percentage increase or decreased. Thus it may be defined as the study of the same item, group of items and computed two or more balance sheet of the same business enterprises on different dates and the study of the defined of proportion computed from these figure on the

different dates. Main advantage of this analysis is that it describes of particular nature of business enterprises and of the enterprises as a whole.

2.1.1.4.3. Comparative Income Statement

The income statement is the summary of revenue and expenses showing net income or loss of any firms. Profit and loss account or income statement shows the profitability of a firm. This statement helps in deriving meaningful conclusions as it is very easy to ascertain the change in sales volume, administrative expenses, selling and distribution expenses cost of sales etc (Jain & Narang, 1988: 12). It is the interrelated statement with balance sheet.

Comparative income statement shows the operating result for number of accounting periods so that changes in absolute data from one period to another period may be stated in terms of absolute change or in terms of percentage. It contains the same column as the comparative balance sheet and provides the same type of information the amount balance increase and decrease in money amounts and the percent of increase or decrease. It is the tool of financial statement analysis which compares at least two years figures in terms of rupees and percentage increase or decrease.

2.1.1.4.4. Funds Flow Analysis

The statement of change in financial position prepared to determine only the sources and uses of fund between two dates of balance sheet is known as funds flow statement. It is prepared to summarize the change in assets and liabilities resulting from financial and investment transactions during the period as well as these change occurred due to change in owner's equity. It is also aimed to depict the way in which the company used its financial resources during the period (Pandey, 1999: 64).

The methods of preparing funds flow statement depends essentially on the sense in which the term fund is used. There are three concept of fund: cash concept, total resource concept and working capital concept. The word fund is synonymous with cash whereas. Total resource concept represents the total assets and resources as fund. And under working capital concept, the term fund refers only to working capital.

However, the concept of fund as working capital has gained wide acceptance as compared to other concepts. Therefore, when conducting funds flow analysis, any transaction that increases the amount of working capital is taken as source of fund whereas transaction that decreases working capital is treated as application. But any transaction that affects current assets or current liabilities however not changing in working capital is not taken as source or use.

The utility of this technique stems from the fact that it enables shareholders creditors and interested parties to evaluate the use funds and, to determine how these uses were financed. In the light of information supplied by funds flow statements outsiders can decide whether or not to invest in the company. It enables financial experts to detect the imbalance in the use of funds and undertake remedial measures. It is also helpful to the financial pattern of a company (The portion of growth financed internally and finance externally).

2.1.1.5. Ratio Analysis

Powerful and the most widely used tool of financial analysis is ratio analysis. A financial ratio is the relationship between two accounting figures, expressed mathematically or the term ratio refers to the numerical or quantitative relationship between two items/ variables. This type of relationship can be expressed as percentage, fraction and proportion of numbers.

Ratio analysis is defined as the systematic uses of ratio to interpret the financial statements so that the strengths and weakness of a firm as well as its historical performance and current financial condition can be determined (Khan&Jain, 2003; p.80).

Ratio analysis is a powerful tool of financial analysis. A ratio is defined as “the indicated quotient of two mathematical expressions” and as the relationship between two or more things. In financial analysis, a ratio is used as a benchmark for evaluating the financial position and performance of a firm. The absolute accounting figures reported in the financial statements do not provide a meaningful understanding of the performance and financial position of a firm (Pandey, 1999: 109).

A large number of ratios can be generated from the components of profit and loss account and balance sheet. There are sound reasons for selecting different kinds of ratios for different types of situations. Ratio can be classified for the purposed of exposition into four broad groups.

1. Liquidity Ratio

Liquidity ratios are used to judge a firm's ability to meet short- term obligations. From them, much insight can be obtained into the present cash solvency of a company and its ability to remain solvent of adversities. Essentially, we wish to compare short term obligations with the short- term resources available to meet these obligations (Van Horne, 2004:351).

Liquidity ratios measure the ability of the firm to meet its current obligations. In fact analysis of liquidity needs the preparation of cash budgets and cash and fund flow statements, but liquidity ratios by establishing a relationship between cash and other current assets to current obligations, provide a quick measure of liquidity (Pandey, 1999: 115). So liquidity ratios are used to measure the ability of a firm to meet its short- term obligations and from them the present Cash solvency as well as ability to remain solvent in the event adversities of the same can be examined.

A very high degree of liquidity means resources of a firm is unnecessarily being tied up as idle assets in current assets, which is earning nothing. The important liquidity ratios are:

- a. Current ratio
- b. Quick Ratio

2. Activity Ratio

Activity ratio is concerned with measuring the efficiency in asset management and used to judge how effectively the firm is using its resources. In this sense, these ratios are also called efficiency ratios or asset utilization/ management ratios. Besides, such ratios are called turnover ratios because they indicate the speed with which assets are being converted or turned over in to sales. The greater the rate of turnover or conversion, the more efficient the utilization/ management if other thing being equal (Khan &Jain, 2003: 140).

- a. Debtors Turnover Ratio
- b. Total Assets Turnover Ratio
- c. Average Collection Period

3. Leverage Ratio/ Capital Structure Ratio

The leverage or capital structure ratios may be defined as financial ratios which throw light on the long term solvency of a firm as reflected in its ability assure the long- term endives with regard to (i) periodic payment of interest during the period of the loan and (ii) repayment of principal of maturity or in predetermined instalments at due dates (Khan & Jain, 1999: 4.10).

Leverage ratios may be calculated from balance sheet items to determine the proportion of debt in total financing. Many variations of these ratios exist: but all these ratios indicate the same thing- the extent to which the firm has relied on debt in financing assets. Leverage ratios are also computed from the profit and loss items by determining the extent to which operating profits are sufficient to cover the fixed charges (Pandey, 1999: 118).

Leverage ratios are calculated to measure long term financial position/ solvency of firm. The leverage ratios are as follows:

- a. Debt to Equity Ratio
- b. Debt to total Capital Ratio
- c. Coverage Ratio

4. Profitability Ratio

Profitability is a measure of operating efficiency that can be measured by profitability ratio. It indicates degree of success in achieving desired profit levels, measure management's overall effectiveness as shown by the return generated on sales and investment. These ratios are composed of "a group of ratio showing the combined effects of liquidity, asset management and debt management on operating result" (Weston & Brigham, 1987:145). So such ratios are regarded as a central measure of the earning power and operating efficiency of a firm.

These groups of ratios consist of many ratios. They are as follows:-

- a. Gross Profit Margin
- b. Net Profit Margin
- c. Return on total Asset
- d. Return on Capital
- e. Return on Shareholder's Equity

2.2. Review of Related Studies

2.2.1. Review of Related Journals (Articles)

Hydropower development has always been vital issue for lots of Nepalese writers and researchers. This Section/ topic is devoted to the review of some major articles published in Journals, reports, newspapers and articles concerning state and problems of hydropower development in the country and financial performance of private -public hydropower Companies or NEA.

In the journal **VIDYUT** (Year18, issue1, 2064 Bhadra), **Mr. Prachar Pradhan** on his article entitled “Challenges and issues on the domestic hydropower projects and perspective on export oriented hydropower projects” has the written about hydropower potential, hydropower generation, existing status, power demand forecast by 2020 for domestic scenario and power generation expansion (NEA and IPP).

He said about hydropower potential of Nepal that, the Karnali and Mahakali river systems represents approximately 43 percent of Nepal theoretical hydropower potential and 55 percent of the technical/ economical potential.

Mr. Pradhan has added that, now the total installed capacity in NEA integrated system is 615 MW including the 152.613 MW hydro plants owned by the private sector and NEA’s thermal power (Diesel) of 55 MW. Although total hydropower capacity in the system is 556 MW, only about 452 MW can be generated from hydropower stations during the winter season when the power demand will be at its peak. During the time of power deflect; about 50 MW is imported from India as per the indo- Nepal power exchange agreement. Nepal and India have agreed in principle to increase this level of exchange from 50 MW to 150 MW. Nepal is also entitled to 70 million units of energy annually from Tanakpur in the far west under the mahakali Treaty. NEA continues to be sole purchase of independent power producer (IPP) Power. To date, twenty two Power Purchase Agreements (PPA’s) totalling 228.840 MW have been concluded of which 152.613 MW have already been commissioned (as of July, 2007).

Challenges and issues on the domestic hydropower projects and perspectives on export oriented hydropower Projects.

Around 40 percent of the population has access to some form of electricity, the majority of energy consumption being in the urban areas. In a steep terrain country like Nepal with dispersed villages in the hills and mountains, electrification is very costly. This situation poses challenges in managing the financial resources to expand the electrification network.

The electricity tariff in Nepal is high, and is beyond the affordable capacity of many of the consumers. The reasons are manifold. The basic infrastructure is not well developed often includes infrastructure such as long approach roads, transmission lines and so on. The majority of equipment and materials also have to be imported, which requires foreign currency and transportation overland for a long distance from the port. The major share of the financing for the projects is from external loans and investments which are to be paid back in foreign currency escalate the tariff further. The challenges lie in developing cheap and reliable hydropower projects so as to keep the tariff within the reach of every one. Nepal government is, therefore, undertaking power sector reform measures with a view to bring about improvements to remedy the situation.

It is encouraging to note that the private sector is gradually entering the power market. The local banking sector's interest in forming consortiums with private developers as in the case of Puluwa, Indrawati, and small Sunkoshi and Khudi projects also heralds a new dawn on the horizon despite present security situation. The main challenge to the private sector is the transfer of technical knowhow and easy access to the international markets for financing mechanisms.

Nepal's own resources both in the public and private sector cannot meet the financial investment needed for hydropower development. A large investment is required from foreign development agencies and private sector entrepreneurs. Although significant foreign investment has been attracted in recent years, much still remains to be invested for meeting both internal demand and the significant potential for the export of power.

Lastly, Mr. Pradhan has concluded that:

- Nepal with its tremendous potential of hydropower, has not been able to get rid of chronic problem of load shedding during winter whereas excess energy during summer seasons. This situation will be eradicated, if Nepal power system is synchronized with the Indian power system. The recent agreement between NEA and IL &FS for development of Nepal- India high voltage power interconnections will be a milestone.
- More generation projects on joint venture mode of public private partnership to be developed, so as to justify the high voltage interconnection between Nepal and India.
- In the medium/long term scenario Nepal should focus on meeting India's Hydropower generation targets around, 50,000 MW needed by 2011-12 via, displacement of capacity 5000 MW to 10,000 MW from large scale hydropower projects in Nepal.
- More high voltage transmission lines to be developed within Nepal in the constrained corridors so as to interconnect the generation centers with the synchronized system with India. For this purpose 400 KV Transmission line from East to West of Nepal is to be planned and discussion between NEA and IL&FS has been already initiated.

In the Journal '**Hydro Nepal**' (issue2, January 2008), **Mr. Anil Kumar Shah** has viewed on his article entitled "Banker's Perspectives on hydropower Development in Nepal: Problems and Prospects". He has written now it is a great opportunity to invest in the development of Nepalese hydropower sector and traced out on the possibilities and problems associated with it. In his Words "The financial sector has identified hydropower development as a lucrative financing opportunity. The success stories of few hydropower projects developed by independent power producers in the recent past have also helped to create positive market interest and response. On the other hand, the risk is relatively high in this sector due to its technical nature, the necessity of huge funds and longer gestation as well as repayment periods. The financial sector is entering the energy sector gradually by taking some exposure, preferring to share the risk amongst various banks and developing consortium financing.

The funds available in the local market are able to support projects with a capacity of 20-50 mw only; for mega projects we will have to seek help from foreign institutional investors. As such, a new market for debentures, bonds or even mutual funds will open up. This will spread the return to mass. In the event of an open market, by the year 2010 international banks will also enter

Nepal. This, in turn, will increase the capacity of financial sector. Therefore, now is the right time to start lending in the sector to gain required experience and hold in the market.

Nepalese Banks have also started to make alliances with Indian counterparts who will not only increase their capacity to lend but will provide the technical expertise. Recently PTC India Ltd. has agreed to enter into an agreement to work together with Nabil Bank Ltd for power purchase sector development in Nepal. They have further appointed Nabil Bank Ltd to liaise with other local banks to enter into similar agreements, which they intend to sign up with Nabil Bank Ltd. This has opened up a new avenue for sharing of expertise and has also increased the total capacity to lend.

In the Magazine **New Business Age** (Vol.7, No. 12, Bhadra 2065), **Mr. Gyanendra Lal Pradhan** has written an article entitled “Hydropower Development and Private Sector” in this article he has focused on the Role of private sectors and key issues of hydropower development in Nepal. Mr. Pradhan is a hydropower entrepreneur of Nepal. About role of private sector, he said that, “Global experiences have reaffirmed the notion that the invisible hand of the market would always contribute to accelerate growth process in a sustained manner. Market oriented development strategies encourage private sector involvement, limiting the government’s role to a facilitator and developer of the private sector through creating an environment conducive for private sector development. Since the enactment of Hydropower Development policy in 1992, Electricity act in 1992 and Electricity Regulations in 1993, entry of independent power producers (IPPs) in Nepal’s power sector through non resource financing has been noticeable and the position of NEA has been replaced from a sole monopoly to one of the licenses with the responsibility to buy the privately generated power. But this is not adequate to attract increased investment from the private parties in this sector”.

The 55-60 billion rupees of liquidity believed to be present now in the Nepali capital market is not enough to generate more than 400 MW of hydro electricity. It is, therefore, very practical for the state to expect increased participation from the private sector. Since Nepal has adequate space to entertain private sector investments not only from Nepal but also from the rest of the world, the state should give specific responsibilities to the Nepali private sector in this regard.

For example, the Nepali private sector can be entrusted the sole responsibility to meet the energy needs of the domestic market. For this, the state should take a proactive role to create and foster congenial environment for the private sector to help construct every year hydropower project (s) of 50 MW. Since the risk factor in investing on energy infrastructure is negligibly low, it would be feasible for the private sector to invest around 7-10 billion rupees every year.

Mr. G.L. Pradhan, has focusing on key issues of hydropower development in Nepal, has written as “analyze the key issues and challenges facing the power sector in Nepal, especially the generation segment, prominent ones are the discouragement to the private sector’s participation and the volume of investment. First, there has been no significant additional investment from donors as well as from the private sector either in the expansion of generation capacity or transmission facilities. Whatever investment is being made for this is coming from the government only.

Second, the current trend of private sector investment in only small capacity plants of 1-5 MW range does not provide any substantial relief to meet the growing needs of the country’s power system. The pace of capacity addition from private sector is far behind what is required to cope with the growing demand of the country, which is increasing by more than 10% annually. In other absence of private sector interest in this, the country faces considerable defleets in near future, unless NEA takes leading role in bringing in such projects in the system.

One of key technical issue or challenge facing the power sector in Nepal, especially the generation segment, is the dominance of run-off-the-river (ROR) and daily pondage hydropower plants. These are set up at a considerable cost but they are not able to generate power throughout the year. The tariff based on average generation from these plants has been partially responsible for the current high power tariff to the consumer. Attempts by NEA to amend its present tariff structure to introduce seasonal tariff in certain consumer categories to encourage demand side management is yet to be approved by authorities concerned.

Also the power evacuation issue has emerged as a very important issue as it has been impeding speedy conclusion of PPA. Investment has to be made for expansion of the transmission network

in tandem with creation of new generation capacity. The state does not have adequate wherewithal to make these investments and therefore the investment needs to be brought in either from domestic private sector participation or multilateral funding route.

NEA is considering developing some major hydropower projects in joint-venture with private developers. It is also looking for mobilizing local resources through the issuance of power bond in local market. In this context, it had concluded a number of studies in the past, which showed good appetite in Nepali financial market for such opportunities due to limited alternative investment opportunities. But to attract such investment, appropriate investment instrument need to be developed. At the same time, NEA should continue to persuade its traditional partners and multilateral donors, to provide financial support to NEA to take up large and medium hydropower projects.”

Mr. Pradhan has further added that, Investment in hydropower generation is considered the best investment due to the low risk associated with this. But only three hydropower companies are listed and traded in the Nepal stock exchange, namely: National Hydropower Co Ltd. (7, 000,000 units of total amount: Rs. 700,000,000); Butwal power company Company Limited (8,390,577 units of total amount: RS. 839,057,700) and Chilime Hydropower Co. Ltd. (7,296,000 units of total amount: Rs 729,600,000). However, the hydropower sector accounts for only 13.4 percent of the total shares traded, according to the NEPSE data for the month of April, 2008.

Investment in hydropower is lucrative. Once the dam is built, hydropower projects provide dividends to the investors forever. Revenues from dams are considered inert as a lead weight. Projects can sell the power to utilities on long- term contracts, which might span 30 or 50 or more years. Revenues from hydroelectric power plants are virtually free from the panic at NEPSE or during recession. So why not invest in hydropower?

The answer is that the private sector is discouraged to invest. Ant liberalisation propaganda and treating liberalisation as an end in it are to blame for this. The aim of liberalisation is to make the private sector the main actor in the economy. The private sector can inject more capital, acquire new and modern technology, generates additional resources for development and alleviate

poverty. Private sector has to play a key role in the integration of the national economy with global economy. In the process of such integration there are various opportunities and challenges. The complex challenges have to be dealt with in a joint effort of the government and private sector through appropriate institutional mechanism.

2.2.2. Review of Related Acts/Plans

2.2.2.1. Hydropower Development Policy, 1992

Regarding different models of investors' participation for the hydropower development in Nepal, the Government of Nepal has formulated the hydropower development policy, 1992. In this policy, the GON has declared as –investment may be made for the projects relating to generation, transmission and distribution of hydroelectricity as follows.

- Sole or joint venture of one or more private national investors.
- Joint investors.
- Joint venture of the government and one or more national or foreign investors.
- Hundred percent investments of one or more than one foreign investors.
- Joint venture of the national or foreign investors.

Hydropower development policy, 1992 has made a provision of exemption of income tax to the newly established hydropower companies for certain years to inspire and facilitate them in the field of hydropower generation. In this regard, the provisions made by the hydropower Development policy, 1992 are as follows:

- An exemption of income tax shall be given to the projects of private sector generating and distributing electricity from the hydroelectric project up to the capacity of 1,000 KW.
- Hydroelectric project, constructed under to investment of private sector, producing more than 1000 KW shall be granted exemption from income tax for a period of fifteen years starting from the date of its commercial production.
- Any private entrepreneur, who constructs electric substation, and transmits and extends the distribution lines be granted exemption from income tax for a period of ten years.
- If the private companies take on contract for purpose the operation, maintenance and management of the hydroelectric plant or transmission and distribution lines under the

ownership of Nepal Government, such companies shall be granted exemption from income tax for a period five years.

- The income tax shall be less than ten percent of the corporate income tax which the government imposes from time to time.
- If the investor reinvests in the hydroelectric project in order to diversity the project or to expand its established capacity by twenty- five percent or more, or to modernize the technology or to develop the subsidiary industry, such investor may deduct an amount of fifty percent of the new additional fixed asset, from the taxable income of such hydroelectric projects. Such deduction may be at a time or from time within three years.

2.2.2.2. “Electricity Development Policy -2058 (2001)”

Government of Nepal envisaged achieving the following by 2007 in its “Electricity Development policy- 2058”

- A dominant private sector contributing 75 percent of total investment in hydropower;
- Boosting of industrial consumption’s by 125 Percent;
- Establishment of power development fund and infrastructure development banks;
- Boosting of hydro capacity to meet a demand of 820 MW of which 70 MW to be Export:
- Privatization of NEA.

“Electricity Development Policy- 2058” is imposed with the following Objectives:

- To utilized the existing water resources of the country and produce electricity at a low cost;
- To make the electricity service dependable, reliable, and extend qualitative service within the whole kingdom at a reasonable rate;
- To tie up the electrification with the economic activities;
- To extend the rural electrification in order to support rural economic development;
- To develop hydropower as an exportable commodity;

“Electricity Development Policy- 2058” adopts the following policies to achieve above objectives:

- Efforts shall be made to maximize the use of country’s hydropower potential in order to meet the domestic demand of electricity.

- Construction and implementation of hydropower projects shall be encourage to promote on the principles of build-operate transfer (BOOT)
- For making the electricity service dependable, reliable and extension of qualitative service delivery within the kingdom at reasonable cost; the exiting public sector institutions shall be restructured to promote the participation by creating competitive environment of community/ corporations, institutions, local agencies and private sector in hydropower production, transmission and distribution.
- Small and medium hydropower projects shall be developed and promoted for domestic use in order to strengthen the situation of domestic power supply. The priority shall be given to develop hydropower projects on a competitive basis suitable to the electricity.
- The hydropower projects shall be identified for export purpose. The private sector shall export the electricity by developing such projects.
- The major multipurpose storage projects shall be developed in a way to render the maximum downstream benefit to the country.
- The electrification program in the rural areas shall be encouraged.
- The rural electrification program shall be expanded in order to make the electricity services available to maximum people. A “Rural Fund Electrification” shall be established for this purpose.
- The rural electrification development program shall be based on mobilization of people’ participation.
- To deliver reliable and dependable electricity services and, make it easily available to consumers proper attention shall be given to safeguard their interests.
- For supplying the electrical energy at a reasonable rate, the electricity tariff fixations process shall be made transparent and reasonable.
- The unauthorized leakage of electricity shall be controlled. For this purpose necessary technical measures shall be adopted and legal arrangements shall be formulated besides these measures, emphasis shall be given to mobilized people participation to control the leakages.
- Incentives shall be provided for the proper utilization of electrical energy. In this context, incentives shall be provided for the use of electrical energy for village water supply, irrigation, industry and tourism sectors when electricity demand is low (when supply is in excess of demand).

- The appropriate incentive provisions shall be made to attract national and foreign investment for the development of hydropower and transparent process shall be followed.
- Capital market shall be operated for investment in the electricity sector.
- The use of local labour and skill shall be given priority in implementing the hydropower projects.
- The industry producing the construction materials and equipments to be used in the electricity sector shall be encouraged to develop the industry.
- Proper Arrangements shall be made to cover the risks arising in hydropower projects.
- Arrangements shall be made to provide appropriate benefits at the local level while operating hydropower projects.
- The adverse effects on environmental shall be minimized caused due to the development and operation of hydropower projects and proper arrangements shall be made to resettle the displaced families.
- Hydropower shall be developed to replace the biomass and thermal energy in order to contribute towards environmental conservation.
- Regarding multi- purpose projects, the government could become a partner with private sector looking at the possibility of irrigation development.

2.2.2.3 Tenth Five Year Plan (Electricity Development)

Of the total population, 48.5 percent was expected to have access to electricity services by the end of the tenth plan. Prior to the tenth plan, electricity was available to 58 municipalities and 1600 VDCs in the country. A total of 2100 VDCs were expected to have access to electricity services, at least partially, by the end of the tenth plan. Electricity supply has been expanded to cover 59 districts in the country. In the community rural electrification program, initiated during the tenth plan period, people's participation in the expansion of electricity supply has been encouraging. The per capita electricity demand of 426 MW towards the end of ninth plan increased to 648 MW towards the end of tenth plan period.

a. Objectives

The following objectives have been set for the electricity sector to reduce poverty in a sustainable manner in the tenth plan.

- To produce electricity at low cost harnessing the existing water resources.
- To supply reliable and high quality electricity at reasonable price throughout the kingdom by integrating economic activities.
- To expedite rural electrification so that it could contribute to the rural economy.
- To develop hydroelectricity as an exportable item.

b. Quantitative Targets

The following targets have set achieving the objectives of the tenth plan.

- Hydropower projects will be constructed to supply 842 Megawatt electricity, out of which 70 Megawatt could be exported.
- Additional 10 percent people will be supplied electricity through the national grid for which power will be supplied to 2600 Village Development Committees through the national grid and additional 5 percent people will be supplied power through alternatives sources of energy.
- Per capita electricity consumption will be raised to 100 kilowatt- hour.

2.2.2.4. Interim Three Year Plan (Electricity and Energy Development)

The importance and contribution of electricity in the development of agriculture, tourism and industries, and other social and economic sectors, is well established. The studies undertaken to date have shown that the feasible potential is 83,000 MW. Of this development of 42,000 MW has been considered as technically and economically viable. The actual generation capacity of hydropower is only 556.4 MW; this is 0.67 percent of feasible generation potential. Of this public sector contribution is 408.1 MW and 148.3 MW comes from the private sector.

Private sector investment in the development of electricity was significant in the ninth plan period. In the tenth plan period, however, the investment of the private sector was not encouraging. The government sector also failed to make investment in this sector during the plan period. The capacity of electricity power generation is not sufficient to meet even the domestic demand in the absence of effective investment plan, at present. In this context, the possibilities of

hydropower export and its contribution to overall economic development of the country, Continuities to remain as the major challenge. The three year interim plan intends to develop the hydropower potential of the country as an export commodity, expanding hydropower to the rural areas and providing quality services with low investment, within the framework and perspectives of the hydropower Development policy, 2001 and the National water plan ,2005.

a. Objectives

To create an environment conducive to domestic and foreign investment in the development of hydropower and to ensure reliable, quality and easily accessible electricity services for majority of the rural areas of the country, considering hydropower as an important base for the comprehensive economic, development of the country.

b. Long Term Vision

The vision of the hydropower sector is to develop hydropower based on optimal utilization of water resources to meet the domestic power demand and export the surplus while expanding the development and services in order to contribute to the livelihood improvement of Nepalese people.

Based on the perspective of National water plan, 2005, the target set for this sector in the long-term (up to 2027) are:

- Generation of 4,000 MW of electricity to meet the domestic demand.
- Expansion of services of electricity in such a way as to ensure coverage of 75 percent of the population through national grid, 20 percent of the population through non-grid (Small and Micro hydropower) system and 5 percent of the population through alternative energy sources.
- Per capita electricity consumption to be increased to 400 KWH.
- Significant export of electricity to contribute to national remittance earnings.

c. Quantitative Targets

- Completion of the construction of ongoing hydropower projects adding 105MW, and initiating the construction of new hydropower projects shall be taken up for additional 2,115 MW.

- Additional 10 percent of the population shall be covered in the electricity services through the national grid. To attain this electricity services shall be expanded to cover additional 500 VDCs in the national grid.
- Per capita electricity consumption will be expanded to 100 KWH.

d. Strategies

- To arrange for effective regulation of generation, transmission and distribution of electricity and the businesses thereto.
- To make the single door system effective in order to encourage domestic and foreign investments in the survey, studies and other promotional activities for the hydropower development.
- To coordinate and make consistent efforts in the expansion of electricity generation potential and in doing so, taking into account the domestic consumption as well.
- To develop the electricity transmission capacity, contributing to the overall economic development and in doing so, to take the possibilities of inland electricity export into account.
- To strengthen and expand the electricity distribution system for social and geographic inclusion and to support the rural economy.

e. Problems, challenges and opportunities

Problems

The rate of implementation of hydropower projects under the initiative of the private sector has not taken place at the pace of finalization of the purchase agreement of electricity with the Nepal electricity Authority. The tendency of acquiring license for hydropower development and not undertaking the production and distribution, which needs to be discouraged, is being continued. Single door system has not performed as expected. This is believed to inhibit the accelerated development of power industry in the private sector. Consistent lowering of investments from the public sector has also been a cause for inadequate development of hydropower. As a result of this, load shedding is continuing in a country known for its enormous hydropower potential. Similarly, the other constrains now appearing are: lack of public and private sector investments in the development of the transmission and distribution system, and amendment in the existing

Electricity Act, 1992, implementation of the Hydropower Development Policy, 2001, has not been taken up efficiently. This is constraining the development of hydropower. The rate of collection of electricity bills has been consistently lowering due to the country. The backlog bills payable by the government agencies and organizations and municipalities have constantly been increasing.

Challenges

The electricity and power sector has been facing the following challenges.

- To ensure supply to meet the ever increasing demand for electricity.
- To make coordinated efforts for the development of hydropower and alternate energy sources in order to provide electricity in the rural areas.
- To control the leakage of electricity.
- To rationalize the electricity tariff on time.

Strengths and Opportunities

- Encouraging people's participation in the community Rural Electrification program.
- Enhanced support of the people, based on the opinion that utilization of water resources of the country is the only means for Nepal's development. This has also created impetus for increased people's participation in the development of water resources.
- Increasing investment of private investors and the domestic capital market in the hydropower sector.
- Manual for the hydropower development prepared to ensure unified approach and quality control in undertaking feasibility studies and construction works.
- Electricity development fund instituted under the support received from the World Bank, under the policy to encourage private sector investment in hydropower development.

2.3. Review of Related Thesis

Various research works have been done by MBS students in different aspects of banking, NEA and hydropower companies such as financial performance, fund management, cost volume profit analysis etc. Studies and reviews on financial performance, fund management, cost volume profit

analysis of other organization and their recommendation are relevant to this study. In this context, some reviewed previous thesis is as follows.

Amatya (2005), conducted a research study on the title of “**An Evaluation of financial Performance of Nepal electricity Authority**” has examined the financial strength and weakness of NEA based on its liquidity, activity, profitability, and leverage ratios.

The main objectives of her study are as follows:

- To analyze the financial performance of NEA through financial analysis taking relevant variables.
- To identify major weakness and strengths of NEA.
- To find out the past and present challenges undergone by NEA.
- To provide some suggestions and recommendation based on the findings for the improvement of financial performance.

Major Findings of her Study Were:

- The current assets are not been used in the profitable manner; the excess of the current assets utilization has increased the opportunity loss.
- Long terms as well as short –term debt utilization has increased the opportunity loss.
- Long terms as well short term debt utilization are also seen more irrational in the sense that their turnover ratio is not satisfactory.
- Capital employed according to profitability is not seemed to be reasonable as there is negative relationship between these variables.

Miss. Amatya has drawn following recommendation from her Research Work:

1. Adoption of effective mechanism to improve liquidity position:

The corporation’s liquidity position is not very satisfactory. Though the current ratio is satisfactory, the analysis of quick ratio shows the problem in the liquidity position. This indicates that the NEA must show some seriousness to improve its liquidity position by adopting effective mechanism.

2. Development of efficient system of revenue collection:

NEA has a large number of customers ranging from domestic, industrial to government and public undertakings. While serving to such large number of customers, NEA requires an efficient system of revenue collection so that revenues do not remain tied up in the bills receivables. The receivables are unproductive and pose implications in reduction of volume profits. The collection system should treat equally to all customers and should not be influenced by political pressure. Revenue accounting should be given adequate importance like expenditure accounting by budget center chief and responsible personnel should be appointed to handle this section.

3. Efficient Utilization of assets:

NEA has not achieved success in the management of its assets within the organization. Efficient utilization of assets can generate additional income without additional cost. Therefore, NEA should pay attention to improve the utilization factor of its assets. This is more important in case of future acquisition of assets. Assets with higher capacity utilization factor should be selected to improve the earning capacity.

Khatiwada (2007), conducted a research study on the title of “**Financial performance analysis of Butwal power Company**” examines the financial strengths and weakness of BPC based on its ratio analysis, income and expenditure analysis and least square trend analysis. He has also used statistical tools.

The main objectives of his research are as Follows:

- To highlight about Butwal power Company like objective, policy, growth etc.
- To study the trend of financial performance and analyze the related financial indicators.
- To analyze financial strength and weakness of Butwal power Company.
- To provide recommendation and suggestions on the basis of study and findings.

Major Findings of his Research are:

- The current ratio indicates that the company is using excessive current assets in the first 3 fiscal years. It is maintaining the current ratio in the later 3 years near to its normal standard. It reveals that the company is in perfect liquidity position. The firm is in strong credibility position.

- The debtors' turnover ratio reflects that debtor's turnover ratio of Butwal Power Company is fluctuating each year but is better in last two years study period than the first two year.
- Fixed assets turnover ratio shows that Butwal Power Company utilized its fixed assets in better way in later years in comparison to previous years except in 2059/060. Increment in fixed assets turnover ratio indicates the improved work efficiency and financial condition. It shows the efficiency of a concern on utilizing its fixed assets.
- The total assets turnover ratio of BPC in the study period is not good, it shows the increment in ratio but increment is not satisfactory. Higher ratios indicate better utilization of total assets of the organization. To improve the total assets turnover ratio BPC should utilize total efficiency. But the company is improving efficiency utilization of total assets.
- The non operating income to total income ratio shows in 2060/61 the non operating income took a high percentage in the total income. Likewise in the year 2057/58 and 2061/62, the non operating income covers a high percentage in total income. It explains that the income of the company is diversified a lot which can help the company to sustained in hard times.
- The local sales to bulk sales ratios shows that the BPC has extended the sales system to the local and Nepal Electricity Authority by power purchase agreement. This helps the company that the dependency of power selling is not constraint and diversified selling process helps to mange hard times. The company sells to local sales and to Nepal electricity Authority as bulk sales.

The recommendations are as follows:

- The company (BPC) is in strong credibility position. It should enjoy capital of less cost by burrowing fund.
- The company has kept very high liquidity ratio. The investment in current assets is excessive which should be controlled.
- Debtors' turnover ratio of the company should be improved and made higher which can help the company to encash its sales in proper time to avoid cash shortage.
- Fixed assets turnover ratio shows the utilization of the assets in percentage. The finding shows that the fixed assets are utilized properly and efficiently. It helped to improve financial condition of the company.

- Total assets turnover ratio is not found satisfactory. To improve the total assets turnover ratio BPC should utilize its total efficiency. It is found that the company is improving its efficiency of utilizing total assets.
- The trend analysis revealed that the company has done better in total sales but worse in operating income. It should improve the trend of operating income in increasing order.

Dahal (2007), conducted a research study on the title of “**Cost –Volume Profit Analysis of Public Enterprises and Private Company Ltd. (A Comparative analysis between NEA and BPC)**”. He was concerned with profit and cost analysis of NEA and Butwal Power Company Limited. He used secondary data of annual reports of their companies.

The Main Objectives of his Study were as Follows:

- To study and analyze existing position of costs of NEA and BPC Pvt. Ltd.
- To identify breakeven point of both enterprises for avoiding losses.
- To compare and analyze P/V ratio, BEP and volume of these Enterprises.
- To examine problems being faced by these two enterprises and recommend for solving these problems on the basis of study results.

Major Findings of his study were:

- Sales of the BPC are increasing every year in fluctuating rate while sales has increased in lower rate than BPC. BPC forecasted sales for FY 2064/65 is Rs 575.73 million and forecasted sales for NEA for FY 2064/65 is Rs 14518.6 million. The sales plan of both BPC and NEA are not systematic. So it is difficult to achieve their target of increasing operating income.
- Variable cost of BPC is less compare to its fixed cost. Contribution margin ratio of NEA is very less while it is satisfactory in place of BPC.
- BPC is running in profit while NEA is suffering from loss. BPC has earned reliable profit and has made it able to stand as one of the most successful enterprise of the country. In other hand, loss of NEA is gradually increasing. No any systematic plans have been implanted for preventing the loss and improve profit by NEA.

- BPC has high P/V ratio which reduces the breakeven level of the company but in the case of NEA P/V ratio is very less which increase the BEP sales of the authority.
- BPC's margin of safety is in average above 50 percent which indicates the safety of the company. But NEA's margin of safety is negative due to higher BEP sales than actual sales or there is no safety margin in NEA.

Based on Above Findings, Mr. Dahal has recommended that:

- In Nepal most of enterprises have no practice of CVP analysis in systematic manner. So, it is suggested that every enterprises should apply or practice CVP analysis.
- CVP analysis shows the relationship among the variables related to cost, revenue and profit. Study of relationship between these variables helps improve the business condition. So, this tool is very much too every organization.
- BPC and NEA have many expert and skilled manpower but these enterprises have ignored the practice of CVP analysis. They have not classified or segregated various types of costs into fixed and variable. It is essential to classify the costs which help in controlling cost.
- Cost plan of both enterprises are not systemately maintained. So cost of every sector should plan properly. It is necessary to establish cost control program in these enterprises. It will maintain the discipline on cost control.
- NEA is operating in monopoly situation, strength, weakness, threats, and opportunity should properly analyze to gain future opportunities.
- Sales revenue of both enterprises is in increasing trend but it is not sufficient to cover the cost and earn desired profit. The variable cost of NEA is very high which is required to reduce in future make profit. Sales plan of these enterprises should clearly maintain and improve to catch market opportunity.
- BPC and NEA should consider BEP analysis while preparing sales plan, production plan, and setting price of its products.

Subedhi (2008) conducted a research study on the title of **“Fund Management of Hydropower companies (With Special reference to Chilime Hydropower Company Limited, Butwal power Company Limited and National Hydropower Ltd)”**. He was concerned with fund

management of these companies analyzing various ratios and of the five years. He used secondary data of balance sheet and profit and loss a/c of these companies.

The Main Objectives of his Study were as Follows.

- To draw the overviews of the development of private and public hydropower companies in Nepalese hydropower sector.
- To evaluate the fund management and financial positions of public hydropower companies with the help of various financial tools.
- To analyze the present trends of public hydropower companies.
- To suggest and recommend possible guidelines on the basis of major findings.

Major Findings of his Study Were as Follows:

- Current ratio of CHPCL, BPCL and NHPL were in fluctuating trend throughout the study period. The mean ratio of BPCL was higher than CHPCL and NHPL. Likewise CV of NHPL was lower than CHPCL and BPCL, which means that CHPCL and BPCL had more fluctuation in ratios as compared with NHPL. Mean ratio shows the highly liquid position of BPCL, which shows the hydropower company did not have proper investment plan. CHPCL and NHPL had lower mean ratio than that of BPCL but these hydropower companies may face the problem of working capital if they need to pay current liabilities at demand. Current ratios were in slightly fluctuating trend for CHPCL, BPCL and NHPL. All three hydropower companies could not maintain the conventional standard of 2.1. However the average ratio of BPCL was greater than that of CHPCL and NHPL, which signifies that BPCL was more capable of meeting immediate liabilities in contract to CHPCL and NHPL.
- Return on shareholder's equity ratio measures the return on shareholder's investment in hydropower companies. The average ratio of CHPCL for the return on shareholders' equity was higher than that of BPCL and NHPL. Likewise the CV CHPL was lower. The ratios of BPCL and NHPL were increasing trend throughout the study period. But the ratios of CHPCL were in fluctuating trend. Average return on shareholders' equity ratio of CHPCL was fluctuating trend.
- Long-term debt to net worth ratio showed CHPCL and NHPL had higher long-term debt for the beginning years and it was in decreasing trend. It shows that both companies were

repaying their debt and they were in sound position for the settlement of solvency. Average ratio in NHPL was higher than that of CHPCL.

- In the beginning two years, the hydropower companies applied higher funds on investing activities because they had to acquire fixed assets and set up their business at that period. After the commercial operation started, CHPCL and NHPL applied their higher funds on financing activities for the repayment of long –term loan.
- Mr. Subedhi has Drown Following recommendations:
- CHPCL and NHPL both hydropower companies have very low liquidity position because the both current and quick ratios are below the standard. Both hydropower companies cannot pay short- term liability at the time of their creditor’s demand. It may create difficult situation in future. So, both hydropower companies should keep sufficient level of current and quick assets to maintain their liquidity position.
- Profitability position of NHPL was weaker than that of CHPCL and BPCL. It should improve overall efficiency by investing its fund in more returnable assets. I.e. risky area through proper risk analysis tec hniques.
- Debt servicing capacity of NHPL appeared weak. So, it is better to search more profitable investments by utilizing its capital and revolving fund. The capital adequacy position of NHPL seems to be less satisfactory than that of CHPCL. So, it needs to raise the net worth.
- Earning of NHPL could not grow proportionately because of high cost bearing outsiders’ fund i.e. debt capital. Therefore, NHPL is suggested to increase the equity financing and minimize the debt capital.
- Government should formulate plans and policies to attract private as well as public investors for the growth of hydropower companies creating investment friendly environment and focusing on their security in the hydropower development.

CHAPTER- III

RESEARCH METHODOLOGY

3.1. Introduction

Research is a systematic and organizes effort to investigate a specific problem that needs a solution. This process of investigation involves a serious of well- thought- out activities of gathering, recording, analyzing and interpreting the data with the purpose of finding answers to the problem, thus the entire process by which we attempt to solve problems or search the answers to questions is called research (Wolf and Pant: 4).

A suitable and simple research methodology is followed in order to achieve the stated objectives of the study and as well as to make it easier in visualizing the total study clearly. This chapter includes research design, sources and types of data. Data gathering instruments and procedures and tools for analysis.

3.2. Research Design

Research design is the plan, structure and strategy of investigation conceived so as to obtain answer to research questions and to control variable. The plan is the overall scheme or program of the research. It includes an outline of what the investigator will do from writing the hypothesis and their operational implications to the final analysis of data. The structure of the research is more specific. It is the outline, the scheme, the paradigm of the operation of the variables. Research design is the plan of attack: what approach to the problem will be taken? What methods will be used? And what strategies will be most effective (Wolf & Pant, 2007:92).

The Comparative evaluation of HPL and HPL, descriptive and analytical approaches were used to evaluate the financial performance of these hydropower companies. Descriptive approach is utilized for conceptualization, problem identification, conclusion and suggestion of the study where as analytical approach will be followed the presentation and analysis of data. The data have been analyzed on the basis of standard financial formulas used in the books of financial management.

3.3. Population and Sample

Total Number of Private – Public Company Operated in Hydropower Sectors of Nepal Are Population. In Current Situation There are 16 Company in Operation (The Name of the Population are Listed Below). Among them I select Two Company as a sample of study by using random sampling Method.

Name of the Private & public sectors Hydropower Companies, which are connected to INPs

1. Himal power Limited (HPL)
2. Butwal Power Company Limited (BPC)
3. Bhotekoshi Power Company Private Limited (BKPC)
4. Chilime Hydropower Company Limited (CHPCL)
5. National Hydropower Company Limited (NHPC)
6. Khudi Hydropower Limited (KHP)
7. Arun Valley Hydropower Company Private Limited (AVHP)
8. Sanima Hydropower Company Private Limited (SHPC)
9. ThoppaKhola Hydropower Company Limited (THP)
10. Alliance Power Nepal Private Limited (APN)
11. Unique Hydrel Company Private Limited (UHC)
12. Khoranga Hydropower Company Limited (KHPC)
13. Gautam Buddha Hydropower Company Limited
14. Rairang Hydropower Development Company Private Limited (RHPD)
15. Kathmandu Small Hydropower (KSHP)
16. Sange Bidyut Company Limited (SBC)

(Source: Annual Report of NEA Fiscal Year 2008/09)

Name of the Sample Companies;

1. Butwal Power Company Limited (BPC)
2. Himal Power Limited (HPL)

3.4. Sources of Data

The main sources of data for the purpose of this study are the published financial statements of HPL and BPC. The study is thus mainly based on the secondary data. It constitution mostly the

annual reports which comprises Balance sheet and profit and loss account statement. Information has also been from various publication of NEA.

Though the study has basically covers the secondary data, however, in some case primary data were also obtained through conversation with the engineers and managerial officials of both companies. All their available published and unpublished materials concerning the study as well as some journal abstracts have also been used. In addition to that, a number of relevant websites were visited to ensure the availability of information across borders regarding the operation of companies.

3.5. Data Collection Procedure/ Techniques

For purpose of this study, following methods/ techniques are used:

Secondary Data: The Secondary data are collected from published accounting statements of Himal Power Limited, Butwal power Company Limited, Nepal Electricity Authority, Report of National Planning Commission. The review of theory relating to this study is based on textbooks, official publication, journals, previous research studies and websites of related Companies, NEA and National Planning Commission.

Primary Data: Descriptive analysis is made with the help of primary data. Primary data are collected by questionnaire and meeting with concern people. To get reliable information discussion was also conducted with staff of HPL and BPC.

3.6. Data Processing

Data obtained from the various sources cannot be directly used in their original form. Further they need to be verified and simplified for the purpose of analysis. Data information, figures and facts so obtained need to be checked, rechecked, edited and tabulated for computation. According to the nature of data, they have been inserted in meaningful tables. Homogenous data have been sorted in understandable manner, odd data excluded from the table. Using financial and statistical tools, data have been analyzed and interpreted.

3.7. Data Analysis Tools

3.7.1. Tools for Secondary Data Analysis

3.7.1.1. Financial Tools

Financial Tools are those, which are used for the analysis and interpretation of financial data. They attempt to explore the financial state of a business and convey the strengths and weakness of its policies and strategies. Ratio analysis is used as the basic tool for this study in order to summarize the quantitative judgements about the companies, financial performance. The importance of ratio analysis lies in the fact that it presents facts on a comparative basis and enables the drawing of inference regarding the performance of a company (Khan & Jain, 1999: 4.33).

The following ratios are used for evaluating the performance of selected sample companies:

i. Liquidity Ratios

Liquidity Ratios measure the firm's ability to satisfy its short- term commitments out of current or liquid assets. These ratios focus on current assets and liabilities and are used to ascertain the short-term solvency position of a firm. The two primary test of liquidity are current ratio and quick ratio.

a) Current Ratio (CR)

A current Ratio (CR) is the quantitative relationship between current assets (CA) and Current Liabilities (CL). So this ratio is calculated by dividing Current Assets by Current Liability.

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liability}}$$

Current assets include cash and those assets that can be converted into cash within a year. This study accumulates stock, current work-in-progress, debtors and receivable cash and bank and advance and deposit to produce the current assets. Similarly creditors and payables Provisions, and advance and deposit have been pulled together to produce current liabilities.

If Current ratio <2.1 (The company is not good in solvency)

If Current ratio = 2.1 (The company is in adequate condition in solvency)

If Current ratio > 2.1 (The Company may have an excessive investment in current Assets)

b) Quick Ratio (QR)

Quick Ratio (QR), also termed as acid- test ratio or liquid ratio, is another measure of short-term solvency of a firm. Quick ratio is defined as the quantitative relationship between quick assets and current liabilities. It is calculated as follows:

$$\text{Quick Ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}}$$

Though advance and deposits are considered less liquid in accounting terms, in this study, they have been found to be convertible into cash quite simply. Therefore, only inventory has been left out of current assets to compare quick assets.

ii. Activity/ Efficiency/ Assets Management Ratio

Assets management Ratios are also known as turnover ratios or activity ratios or efficiency ratios. These ratios look at the amount of various types of assets and attempt to determine if they are too high or too low at current operating levels. They provide the measure for how effectively the firm's assets are being managed. If too many funds are tied up in certain types of assets that could otherwise be employed more productively elsewhere, the firm is not as profitable as it should be. Following ratios are calculated to measure how efficiently a firm employs the assets.

a) Fixed Assets Turnover Ratio

This ratio is calculated by dividing sales by net fixed assets i.e.

$$\text{Fixed Assets Turnover} = \frac{\text{Sales}}{\text{Net Fixed Assets}}$$

Net fixed assets are defined as the gross fixed assets minus depreciation. This study accumulates fixed assets. Capital work-in progress and investment in new project to produce Net fixed assets.

b) Total Assets Turnover Ratio

Total assets turnover Ratio shows the relationship between sales and total assets. So this ratio is calculated by dividing sales by total assets i.e.

$$\text{Total Assets Turnover} = \frac{\text{Sales}}{\text{Total Assets}}$$

Total assets constitute the fixed assets as well as current assets and investment of the company. This study accumulates fixed assets, work in progress, and investment in new project, current assets and differed revenue expenditure to produce the net current assets.

c) Average Collection Period

Average collection period is calculated by dividing sales by debtor's turnover ratio i.e.

$$\text{Average Collection period} = \frac{\text{Sales}}{\text{Debtor's turnover Ratio}}$$

This defines time period for the collection of credit sales. The duration of credit should be shortening for the organization. So less ACP is better for the company.

d) Debtor's Turnover ratio

Debtor's turnover Ratio is calculated by dividing sales by closing debtors. i.e.

$$\text{Debtor's Turnover Ratio} = \frac{\text{Net Sales}}{\text{Closing Debtors}}$$

This defines times debtors converted into cash. Higher ratio is better for the organization.

e) Capital Employed Turnover Ratio

This ratio is calculated by dividing sales by Capital employed i.e.

$$\text{Capital Employed Turnover} = \frac{\text{Sales}}{\text{Capital employed Relationship}}$$

The ratio measures the relationship between sales and capital employed. Higher ratio indicates better utilization of capital employed resulting in higher profit.

iii. Profitability Ratio

Profitability is the end of result of a number of corporate policies and decisions. It measures how effectively the firm is being operated and managed. Besides owns and managers, creditors are also interested to know the financial soundness of the firm. Owners are eager to know their returns where as manager are interested in their operating efficiency. So they calculate profitability ratios because expectations of both owners and managers are evaluated in terms of

profit earned by the firm. Following are the major ratios used to measure the profitability of a firm.

a) Net profit Margin

Net profit Margin is the Ratio between net income and sales of a firm. It shows the firm's ability to generate net income per rupee of sales and is calculated as:

$$\text{Net Profit Margin} = \frac{\text{Net Income}}{\text{Sales}}$$

This ratio explains the relationship between net profit after tax and sales. Higher ratio denotes higher profitability of the enterprises. Lower ratio indicates increase in indirect expenses, incapable management and lower income sources.

b) Gross Profit Margin

This Ratio is calculated by dividing gross profit by sales, i.e.

$$\text{Gross Profit Margin} = \frac{\text{Gross Profit}}{\text{Sales}}$$

This ratio reflects the profitability of a company and measures the ability to get profit. This ratio should be able to cover all indirect expenses at least. Higher ratio is favourable to the organization. Lower ratio reflects unfavourable purchase Policy, lighter production cost, lower selling price or higher investment in fixed assets.

c) Operative Expenses Ratio

Operating Expenses Ratio is calculated by dividing total operating expenses by sales, i.e.

$$\text{Operative Expenses Ratio} = \frac{\text{Total Operating Expenses}}{\text{Sales}}$$

This study accumulates power plant expenses, distribution expenses and consultancy service expenses to produce operating expenses.

d) Return on Assets

The Return on Assets (ROA), which is often called the firm's return on total assets, measure the overall effectiveness of management in generating profit with its available assets. The higher the firm's return on assets, the better it is doing in operation and vice versa. It is calculated as follows:

$$\text{Return on Total Assets} = \frac{\text{Net Profit after tax+interest}}{\text{Total Assets}}$$

e) Return on share holders' equity (ROSHE)

Return on shareholder's equity measures the return earned by the shareholders i.e. owners of the company. To analyze whether the company been able to provide higher return on investment to the owner or not, this ratio necessary. This ratio can be calculated by using following formula:

$$\text{Return on Shareholders' equity} = \frac{\text{Net Profit after tax}}{\text{Shareholders' Equity}}$$

The higher the ratio is desirable from the point of view of the owners of the firm and represents the higher profitability of the firm and vice versa.

iv. Leverage/ Capital Structure Ratio

The leverage or capital structure Ratio may be defined as financial ratios which throw light on the long-term solvency of a firm as reflected in its ability to assure the long- term creditors with regard to (i) periodic payment of interest during the period of the loan and (ii) repayment of principal on maturity or in predetermined instalments at the due dates. This ratio indicates the mix of fund provided by owners and lenders. As a general rule, there should be an appropriate mix of debt and owners' equity in financial mix of the companies' assets (Khan and Jain, 1999:10).

a) Debt-Equity Ratio (D/E Ratio)

Debt to Equity Ratio is calculated dividing total debts by total shareholders' equity. This ratio shows the relationship between debt capital and equity capital.

$$\text{Debt to Equity Ratio} = \frac{\text{Total Debt}}{\text{Shareholders Equity}}$$

This study accumulates equity and, reserve and surplus to produce shareholders equity.

b) Debt to Total Assets Ratio (DTAR)

Debt to Total Assets Ratio is calculated dividing total debts by total assets. This ratio shows the relationship between debt capital and total assets.

$$\text{Debt to Total Assets Ratio} = \frac{\text{Total Debt}}{\text{Total Assets}}$$

v. Invisibility Ratio

An analysis of invisibility Ratios helps the investors to know about the performance of the company. Therefore following ratios have been calculated to rest earning capacity.

a) Earnings Per Share (EPS)

This ratio is calculated dividing net profit after Taxes (EAT) by number of equity share outstanding. The profitability of a company from the point of view of ordinary share holders is the earning per share (EPS). EPS calculations made over years indicate whether or not the company's earnings power on per share has changed over that period. EPS shows the amount earning attributes to each equity share. If earning per share is high market price of the share may be increased in the market and vice versa. High ratio shows the sound profitability position of the components.

$$\text{Earning Per Share} = \frac{\text{Net Profit after tax}}{\text{Number of Share Outstanding}}$$

b) Dividend Per Share (DPS)

The dividend per share (DPS) is the per share earnings distributed to the shareholders. It can be calculated by following formula:

$$\text{Dividend per Share} = \frac{\text{Total Dividend Distributed}}{\text{Number of Share Outstanding}}$$

This ratio shows per rupee earnings actually distributed to common stockholders per share held by them. High ratio is favourable for the shareholders.

c) Dividend Payout Ratio

This Ratio is the ratio between dividends per share (DPS) to earning per share (EPS) is known as Dividend Payout Ratio. It can be computed by the following way.

$$\text{Dividend Payout Ratio} = \frac{DPS}{EPS}$$

It determines the portion of per share dividend paid out of per share earning. The higher ratio is better to the shareholders. It builds faithfulness of the company.

3.7.1.2. Statistical Tools

Statistical tools present the relationship among certain variables based on past trend and help predict future values of one or more variable given the change in other associated variables. These tools are useful to researcher in order to draw liable financial consumptions from data available. The following statistical tools are used in this study for evaluating the performance of selected companies.

I. Arithmetic Mean

Arithmetic Mean (A.M) is the most commonly used of all the average. This is due to the simplicity of its calculation and other advantage. It is used to calculate the average value of quantitative data closed end class intervals and when the distribution does not have very large and very small items. It is also used to obtained average value of distribution having closed ended class intervals and having non- extreme items.

Arithmetic Mean of given set of observation is their sum divided by the number of observations. In general, if $X_1, X_2, X_3, \dots, X_n$ are the given observations and N being number of observations, then arithmetic mean usually denoted by \bar{X} is given by:

$$\bar{X} = \frac{X_1 + X_2 + X_3 + \dots + X_n}{N} = \frac{\sum X}{N}$$

II. Coefficient of Variation (CV)

Coefficient of Variation is method of meaning risk. It is the standardized measure of the risk per unit of return. It is the percentage variance in the mean. Standard deviation being considered as the total variation in the mean. It is one of the relative measures of dispersion that is useful in comparing the amount of variation in data group with different mean. Coefficient of variation, denoted by CV is given by:

$$CV = \frac{\sigma}{\bar{X}} \times 100\%$$

Where, $\sigma = \sqrt{\frac{\sum X^2}{n} - \left(\frac{\sum X}{n}\right)^2}$

Comparing the variability of two distributions we compute the coefficient of variation for each distribution. A distribution with smaller CV is said to be more homogenous or uniform or less variable than other.

III. Co-efficient of Correlation (r)

It is a Statistical tool for measuring the intensity of the magnitude of linear relationship between two series. Karl Pearson's correlation coefficient measures the degree of linear association between two variables. Let X and Y are two variables. Karl Pearson's Correlation coefficient between X and y is generally Denoted by r_{xy} or simply r only. It is also called Product Moment Correlation Coefficient or Simple Correlation Coefficient or simply a Correlation. It is defined as Follows:

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

Where,

N = Number of observation

$\sum X$ = Sum of observation in Series X

$\sum Y$ = Sum of observation in Series Y

$\sum X^2$ = Sum of squared observation in Series X

$\sum y^2$ = Sum of squared observation in Series Y

$\sum XY$ = Sum of the product of observation in Series X and Y

Values of r lies between -1 and +1, r = 1 implies that there is a perfect correlation between the variables. The variables are said to be perfectly negatively correlated if r = -1 and, perfectly positively correlated if r = +1. If r = 0, the variables are not correlated at all except other than in form of logarithm. Quadratic or exponential.

IV. Probable Error of Correlation Coefficient (PE)

Probable Error of the Correlation Coefficient is an old measure of testing the reliability of an observed value of correlation coefficient. It is calculated to find the extent to which correlation coefficient depends upon the condition of random sample. Probable error of correlation coefficient denoted by PE(r) is obtained by:

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

Where, $\frac{1-r^2}{\sqrt{N}}$ = Standard Error

Reason for taking 0.6745 is that in a normal distribution, 50% of observations lie in the range $p = \pm 0.6745$.

PE is used to test if an observed value of sample correlation coefficient is significant of any correlation in the population. If $r > 6 PE$, correlation is significant otherwise not.

V. Least Square Linear Trend

Trend Analysis is very useful and commonly applied tool to forecast the future event in quantitative term, On the basis of the tendencies in the dependent variable in the past period. The straight line trend implies that irrespective of the seasonal and cyclical as well as irregular fluctuation, the trend values increase by absolute in arithmetic Progression.

Mathematically $Y = a + bX$

Where, Y= Value of the dependent Variable

a = Y- intercept

b = slope of the trend line

X = Value of the independent Variable

Normal equations fitting above equation are:

$$\sum Y = Na + b\sum X$$

$$\sum XY = a\sum X + b\sum X^2$$

$$\text{Since, } \sum X = 0, a = \frac{\sum Y}{N}, \text{ and } b = \frac{\sum XY}{\sum X^2}$$

3.7.2. Tools for Primary Data Analysis

The Chi- square (χ^2) test is designed to work with nominal data. It provides the researcher with a mathematical way of examining a classification table to see whether the arrangement of values within that table is unusual in some way. In performing this test, the mathematical process will be looking for a significant difference between the observed and expected frequencies. The Chi-square test involves a comparison of two or more responding groups (Wolf and Pant, 2005:287).

Since Chi- square test does not make any assumption about population parameters. It is called distribution free test. This test is good for normal or ordinal scale of measurement. Chi-square test is also used for analysis of quantitative variables, such as opinions of people, religious affiliation, smoking habits and so on. Chi-square test is a test that describes the magnitude of difference between observed and expected (theoretical) frequencies under certain assumptions. In other words, it describes the magnitude of the discrepancy between theory and observation.

It is defined as:

$$\text{Chi-square, } \chi^2 = \sum \frac{(O-E)^2}{E}$$

Where, O =Observed Frequency

E = Expected Frequency

$$\text{Expected Frequencies} = \frac{RT \times CT}{N}$$

Where, N =Number of observations

RT = Row Total

CT = Column Total

Note: 5% level of significant have been used for all tests.

3.8. Research Variables

The research Variables are mainly related with the financial statements of BPC and HPL. Profit and loss account, balance sheet, cash flow statement and time period are the main research variable of the study, these variables are measured in terms of various components of ratios.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

In this Chapter, the data have been analyzed and interpreted using financial and statistical tools following the research methodology dealt in the third chapter. In the part of analysis, various tables have been inserted in the required tables according to their homogenous nature. This chapter is divided into three sub heads as presentation of data from secondary sources, presentation of the data from Primary Sources and major findings of the study.

4.1 Presentation and Analysis of Data from Secondary Sources

This Section includes the data related with the study from secondary sources. Secondary sources mean the data of the private-public sectors hydropower companies derived from their annual reports, webpage and other already published sources. The presentation and analysis of these numerical dates include ratio analysis and correlation analysis.

4.1.1 Liquidity Ratio

Liquidity Ratios are used to judge the company's ability to meet the short term obligations. These ratios involve the relationship between current Assets and Current Liabilities and measured by current ratio and quick ratio.

a) Current Ratio

Current Ratio measures the liquidity position of the company. The standard current ratio should be 2:1 and it is also defined by the nature of the company. The current ratio of different sampled years has been presented in the table No. 4.1 below.

Table No 4.1
Calculation of Current Ratio

(In, 000)

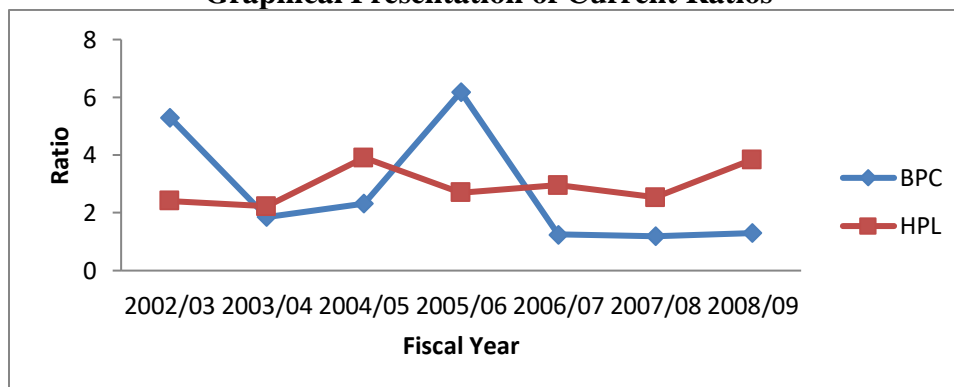
Fiscal Year	Current Assets		Current Liabilities		Ratio (Times)	
	BPC	HPL	BPC	HPL	BPC	HPL
2002/03	286,201	2104,519	54,012	873,979	5.30	2.41
2003/04	520,987	2417,624	280,166	1086,310	1.86	2.23
2004/05	481,833	1894,736	207,655	485,105	2.32	3.91
2005/06	335,582	2182,303	54,172	809,554	6.19	2.70
2006/07	543,416	2326,983	433,619	784,873	1.25	2.96
2007/08	670,674	2230,147	562,584	881,517	1.19	2.53
2008/09	776,080	1703,231	595,871	443,000	1.30	3.84
Mean (\bar{X})					2.77	2.94
Standard Deviation (σ)					1.936	0.63
Coefficient of Variation (CV) %					69.89	21.43

Sources: Annual Report of BPC &HPL (F/Y 2002/03-2008/09)

Looking over the trend of current ratio of BPC over 7 Years, it can be observed that other than last three years, the company's current ratio has remained satisfactory. Increased creditors and payables of BPC is the reason for decreased current ratio in last three years. On the Contrary, Current ratio of HPL has Remained Satisfactory.

In Current ratio, BPC has fluctuating trend of current ratio, but in average mean of Current ratio of 2.77 seems to be over than the conventional standard of 2.1 which suggest the sound liquidity position. Similarly Current ratio of HPL is stable than BPC. Every year, the Current ratio of HPL is over standard 2.1 and Average Mean has also over Standard 2.1 (2.94>2.1). Likewise BPC has a Higher CV than That of HPL which means that BPC has more Fluctuations in ratio than HPL. So Both Companies Current ratio position is Satisfactory but to compare each other the position of HPL is better than BPC.

Figure No 4.1
Graphical Presentation of Current Ratios



In graphical presentation of current ratio shows that the current ratio of BPC has more fluctuate since F/Y 2004/05 to 2006/07. It has drastically increases in F/Y 2005/06 and drastically decreases in F/Y 2006/07. In contract, the current ratio of HPL has been slightly increasing or decreasing trend since starting year to ending year.

b) Quick Ratio

The Quick Ratio is more accurate guide to measure the liquidity position of any company. Generally a quick ratio of 1:1 (Quick Assets equal to Current Liabilities) is considered satisfactory as it means a company can easily meet all current claims.

**Table No 4.2
Calculation of Quick Ratio**

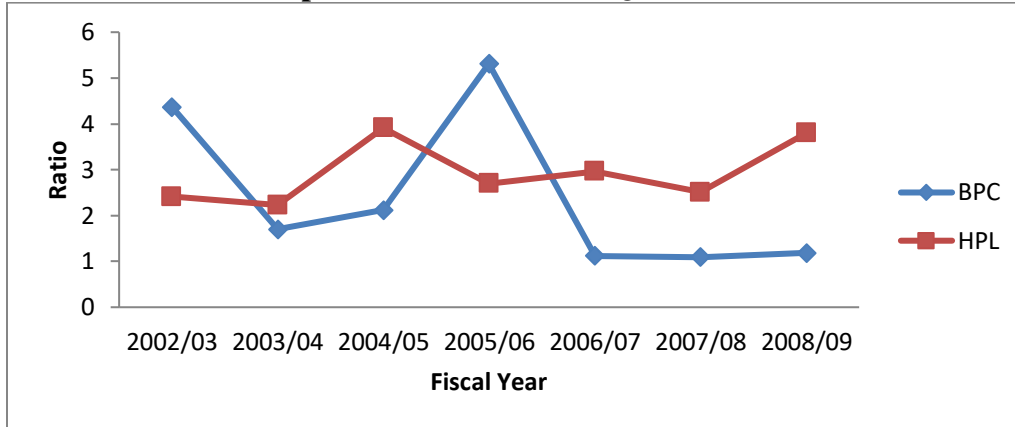
(In, 000)

Fiscal Year	Quick Assets		Current Liabilities		Ratio (Times)	
	BPC	HPL	BPC	HPL	BPC	HPL
2002/03	236,064	2104,033	54,012	873,979	4.37	2.41
2003/04	477,002	2417,624	280,166	1086,310	1.70	2.23
2004/05	440,067	1894,736	207,655	485,105	2.12	3.91
2005/06	287,544	2182,303	54,172	809,554	5.31	2.70
2006/07	485,793	2326,983	433,619	784,873	1.12	2.96
2007/08	611,778	2215,154	562,584	881,517	1.09	2.51
2008/09	701,432	1683,337	595,871	443,000	1.18	3.80
Mean (\bar{X})					2.41	2.93
Standard Deviation (σ)					1.60	0.63
Coefficient of Variation (CV) %					66.39	21.50

Sources: Annual Report of BPC &HPL (F/Y 2002/03-2008/09)

Above table reveals a fluctuating but satisfactory trend of quick ratio of BPC with a mean of 2.41. Similarly quick ratio of HPL is also satisfactory with a mean of 2.93. Standard deviation and CV of BPC is 1.60 and 66.39. In contrast Standard deviation and CV of HPL are .63 and 21.50 it means that risk of BPC is higher than HPL.

Figure No 4.2
Graphical Presentation of Quick Ratios



The graphical presentation of quick ratios shows that the quick ratio of BPC experienced a fluctuating in F/Y 2004/05 and since F/Y 2005/06 it has been decreasing gradually. In contrast, the current ratio of HPL has been slightly increasing and decreasing over study period.

4.1.2 Activity/ Efficiency/ Assets Management Ratios

Assets management Ratios are also known as turnover ratios or activity ratios or efficiency ratios. These ratios look at the amount of various types of assets and attempt to determine if they are too high or too low at current operating levels. They provide the measure for how effectively the firm's assets are being managed. If too many funds are tied up in certain types of assets that could otherwise be employed more productively elsewhere, the firm is not as profitable as it should be. Following ratios are calculated to measure how efficiently a firm employs the assets.

a) Fixed Assets Turnover Ratio

Fixed Assets Turnover Ratio measures the efficiency with which the company is utilizing its investment in its various net fixed assets. Generally high fixed assets turnover ratio indicates efficient utilization of fixed assets while inefficiency in utilization is shown by low fixed assets turnover ratio.

Table No 4.3
Calculation of Fixed Assets Turnover Ratio

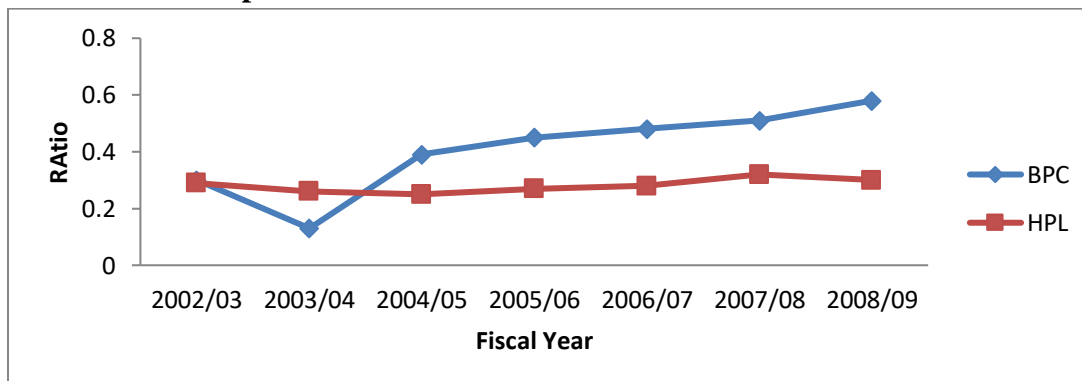
(In, 000)

Fiscal Year	Sales		Fixed Assets		Ratio (Times)	
	BPC	HPL	BPC	HPL	BPC	HPL
2002/03	236,278	2171,039	778,913	7548,112	0.30	0.29
2003/04	96,364	2193,850	763,484	8570,394	0.13	0.26
2004/05	283,167	2092,032	727,340	8213,644	0.39	0.25
2005/06	323,134	2104,124	714,016	7908,173	0.45	0.27
2006/07	358,419	2121,897	743,605	7551,062	0.48	0.28
2007/08	379,769	2307,461	743,893	7203,678	0.51	0.32
2008/09	421,687	2132,995	725,742	7002,613	0.58	0.30
Mean (\bar{X})					0.406	0.281
Standard Deviation (σ)					0.139	0.026
Coefficient of Variation (CV) %					34.24	9.25

Sources: Annual Report of BPC &HPL (F/Y 2002/03-2008/09)

In above table, we can find that, Fixed Assets turnover ratio of BPC is increasing trend except F/Y 2003/04. BPC has used its fixed assets quite adequately; generally an overall mean sale of Rs 0.406 out of each rupee invested in fixed assets. Similarly Fixed assets turnover ratio of HPL is slightly decreasing From F/Y 2003/04 to 2004/05, then slightly increasing since F/Y 2005/06 to F/Y 2007/08 and last year has decreasing. Average mean sale of HPL is Rs 0.281 out of each rupee invested in fixed assets. CV of HPL is 9.25% which is less than the CV of BPC 34.24% thus the volatility of ratio is lower in HPL but HPL has not used its fixed assets quite adequately than BPC.

Figure No 4.3
Graphical Presentation of Fixed Assets Turnover Rat



The graphical presentation of fixed assets turnover ratios shows that the FATOR of BPC experienced a bulky drop in F/Y 2003/04 and after recovery the New Year, since then it has been increasing steadily. In contrast, the FATOR of HPL has slightly decreases in First three years then slightly decreases in next 3 years and at last increases but stable trend.

b) Total Assets Turnover Ratio

Total Assets Turnover Ratio indicates the sales generated per rupee of investment in the total assets. Generally higher turnover ratios show efficiency in utilization of companies' scarce resources and vice versa.

**Table No 4.4
Calculation of Total Assets Turnover Ratio**

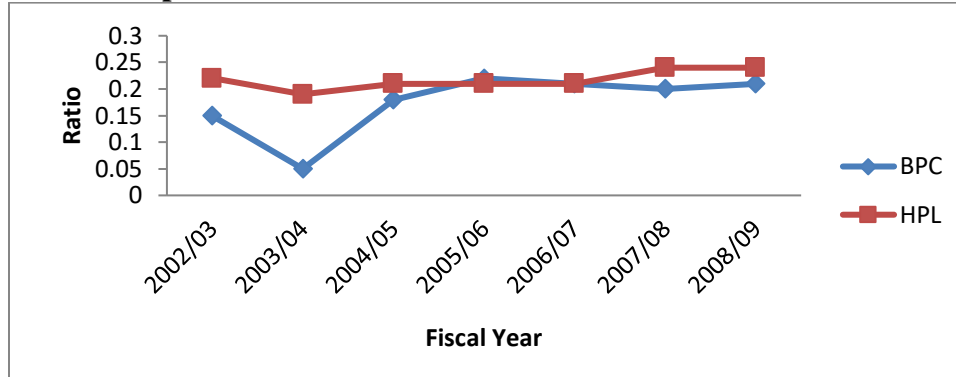
(In, 000)

Fiscal Year	Sales		Total Assets		Ratio (Times)	
	BPC	HPL	BPC	HPL	BPC	HPL
2002/03	236,278	2171,039	1622,165	9679,770	0.15	0.22
2003/04	96,364	2193,850	1825,464	10999,525	0.05	0.19
2004/05	283,167	2092,032	1579,195	10110,846	0.18	0.21
2005/06	323,134	2104,124	1439,238	10098,600	0.22	0.21
2006/07	358,419	2121,897	1744,447	9897,922	0.21	0.21
2007/08	379,769	2307,461	1882,271	9454,424	0.20	0.24
2008/09	421,687	2132,995	1986,926	8728,710	0.21	0.24
Mean (\bar{X})					0.174	0.217
Standard Deviation (σ)					0.056	0.017
Coefficient of Variation (CV) %					32.18	7.83

Sources: Annual Report of BPC &HPL (F/Y 2002/03-2008/09)

Above table reveals a fluctuating and unsatisfactory trend of TATOR of BPC with a mean of 0.174. In contrast, HPL has better TATOR mean of 0.217 and a rather incremental trend except F/Y 2003/04. HPL also has less volatility in TOTAR with compared to BPC which is indicated by its CV. Considering the result of TATOR, in can be concluded that BPC is utilizing its current assets inefficiency or in other words, it has heavily invested in current assets. However this also indicates that HPL has a weaker liquidity position with compared to BPC.

Figure No 4.4
Graphical Presentation of Total Assets Turnover Ratios



The graphical presentation of TOTARs shows that the TATOR of BPC experienced a big drop in F/Y 2003/04 and after increasing rapidly for next two years. It has again dropped in F/Y 2006/07 and F/Y 2007/08 and at last F/Y 2008/09 also slightly increased. In contrast the TATOR of HPL has been drop in F/Y 2003/04 then after increasing steadily.

c) Debtors Turnover Ratio/ Receivable Turnover Ratio

The Debtors Turnover Ratio specifies the amount of transaction with debtors within a specified time period. This ratio indicates the velocity of debt collection of a company. In other words, it indicates the number of times average debtors are turned over during a year. Generally high Debtor's turnover is the indication of good receivable management. Debtor's turnover ratio is calculated by dividing sales by closing Debtors/ Receivable.

Table No 4.5
Calculation of Debtor's Turnover Ratio

(In, 000)

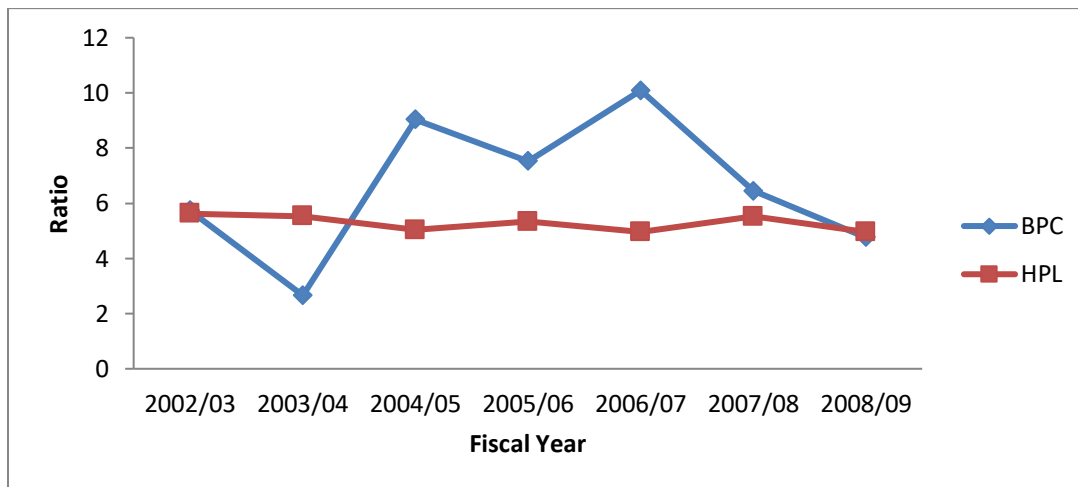
Fiscal Year	Sales		Closing Debtors		Ratio (Times)	
	BPC	HPL	BPC	HPL	BPC	HPL
2002/03	236,278	2171,039	41,190	386,388	5.74	5.62
2003/04	96,364	2193,850	36,224	396,465	2.66	5.53
2004/05	283,167	2092,032	31,309	416,028	9.04	5.03
2005/06	323,134	2104,124	42,921	393,674	7.53	5.34
2006/07	358,419	2121,897	35,512	428,146	10.09	4.96
2007/08	379,769	2307,461	58,918	417,834	6.45	5.52
2008/09	421,687	2132,995	88,407	430,109	4.77	4.96
Mean (\bar{X})					6.611	5.28
Standard Deviation (σ)					2.350	0.269
Coefficient of Variation (CV) %					35.55	5.09

Sources: Annual Report of BPC &HPL (F/Y 2002/03-2008/09)

Above table reveals a fluctuating trend of DTR of BPC except last fiscal year and slightly increasing and decreasing trend of DTR of HPL. Due to considerably increased amount of debtors or receivable, The DTR of BPC and HPL have dropped to 4.77 and 4.96 respectively after experiencing a high turnover last year.

The mean DTR of BPC is slightly higher than that of HPL but HPL seems to have a much stable trend of ratios with compared to BPC which is reflected by their corresponding standard deviation of ratios. The CV with respect to DTR of BPC and HPL are 35.55% and 5.09% respectively.

Figure No 4.5
Graphical Presentation of Debtors Turnover Ratios



The graphical presentation of DTRs shows that the DTR of BPC has experienced rapid ups and downs through the study period. In contrast, the DTR of HPL has slightly decreased from first F/Y to 3rd F/Y then slightly increased in F/Y 2005/06 then slightly decreased or increased through the study period.

d) Average Collection Period (ACP)

The average Collection Period provides the average turnover day’s receivable and outstanding the average times. It takes to convert them into cash. Short average collection period shows the timely payment of debt and long average collection period indicates inefficiency of the company in collection of receivables.

Table No 4.6
Calculation of Average Collection Period

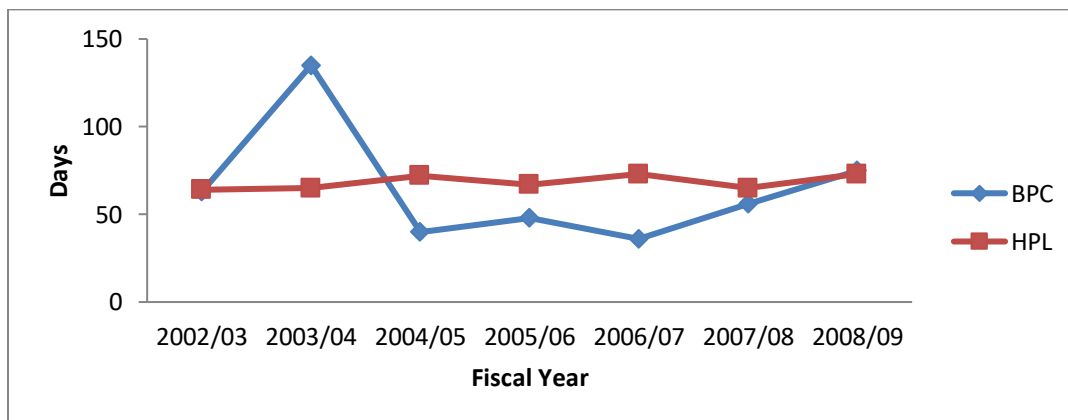
(In, 000)

Fiscal Year	Days in a Year	Debtors Turnover Ratio		Average Collection Period (Days)	
		BPC	HPL	BPC	HPL
2002/03	360	5.74	5.62	63	64
2003/04	360	2.66	5.53	135	65
2004/05	360	9.04	5.03	40	72
2005/06	360	7.53	5.34	48	67
2006/07	360	10.09	4.96	36	73
2007/08	360	6.45	5.52	56	65
2008/09	360	4.77	4.96	75	73
Mean (\bar{X})				65	68
Standard Deviation (σ)				30.659	8.527
Coefficient of Variation (CV) %				47.17	12.54

Sources: Annual Report of BPC &HPL (F/Y 2002/03-2008/09)

Above table reveals a very fluctuating trend of ACP of BPC with a mean of 65 days. Except F/Y 2008/09, last four fiscal years of BPC present a very recovering trend of ACP and more enthusiastic than that of HPL. ACP of HPL is 3 days more than BPC but Stable trend of ACP. It has less volatility in ratios presented by CV of 12.54%. In contrast, BPC has a CV of 47.17% which indicates its instable trait of receivable management.

Figure No 4.6
Graphical Presentation of Average Collection Periods



The Graphical presentation of ACPs shows that ACP of BPC experienced rapid ups and down for the first 3 years of study and since then it has remained considerably consistent. In Contrast, the ACP of HPL has slightly increasing or decreasing trend over the study period.

e) Capital Employed Turnover Ratio

Capital employed is the amount entrusted by the owner and long term loan financiers to the firm. It includes the amount of owner’s equity and debentures, bond and long-term loan. The amount of capital employed represents the net current assets and long term assets of the firm. Capital employed turnover ratio is calculated to know the effectiveness in utilizing the capital employed by dividing sales by capital employed. The high ratio indicates better utilization of capital employed resulting in high profit.

Table No 4.7
Calculation of Capital Employed Turnover Ratio

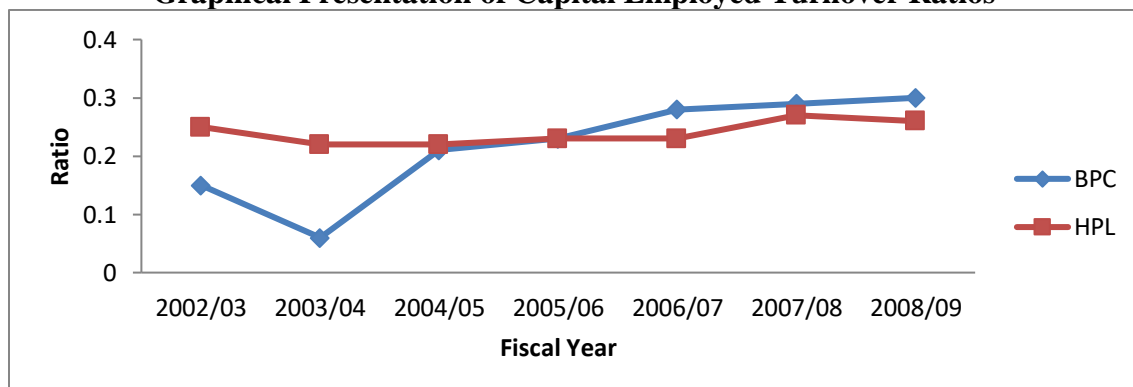
(In, 000)

Fiscal Year	Sales		Capital Employed		Ratio (Times)	
	BPC	HPL	BPC	HPL	BPC	HPL
2002/03	236,278	2171,039	1568,153	8805,791	0.15	0.25
2003/04	96,364	2193,850	1545,298	9913,215	0.06	0.22
2004/05	283,167	2092,032	1345,784	9625,740	0.21	0.22
2005/06	323,134	2104,124	1380,528	9289,046	0.23	0.23
2006/07	358,419	2121,897	1300,568	9113,048	0.28	0.23
2007/08	379,769	2307,461	1294,863	8572,907	0.29	0.27
2008/09	421,687	2132,995	1395,820	8285,711	0.30	0.26
Mean (\bar{X})					0.217	0.24
Standard Deviation (σ)					0.081	0.017
Coefficient of Variation (CV) %					37.33	7.08

Sources: Annual Report of BPC &HPL (F/Y 2002/03-2008/09)

Above table, depicts that the Capital Turnover ratio of BPC is increasing trend except F/Y 2003/04. In contrast the capital turnover ratio of HPL is decreasing in F/Y 2003/04 and stable in 2004/05 then slightly increasing trend except F/Y 2008/09. Coefficient of variation (CV) of BPC is more (37.33) then HPL (7.08) because of low average mean and high fluctuation in 2003/04. CETR of HPL is satisfactory trend.

Figure No 4.7
Graphical Presentation of Capital Employed Turnover Ratios



The Graphical presentation of Capital Employed ratios shows that capital employed ratio of BPC experience rapid down in 2003/04 and rapidly increase in 2004/05 then slightly increase since 2004/05 to 2008/09. In contrast, the Capital employed turnover ratio of HPL has slightly increased or decreased the study period.

4.1.3 Profitability Ratio

Profitability Ratios measure the success of the company in earning a net return on sales or on investment. These ratios give the decision about how effectively the company is being managed. It is true that higher the profitability ratios better the financial position and vice versa.

a) Net Profit Margin

The Net Profit margin is the Ratio between in Net income and sales of a firm. It shows the firm's ability to generate net income per rupee of sales.

Table No 4.8
Calculation of Net Profit Margin

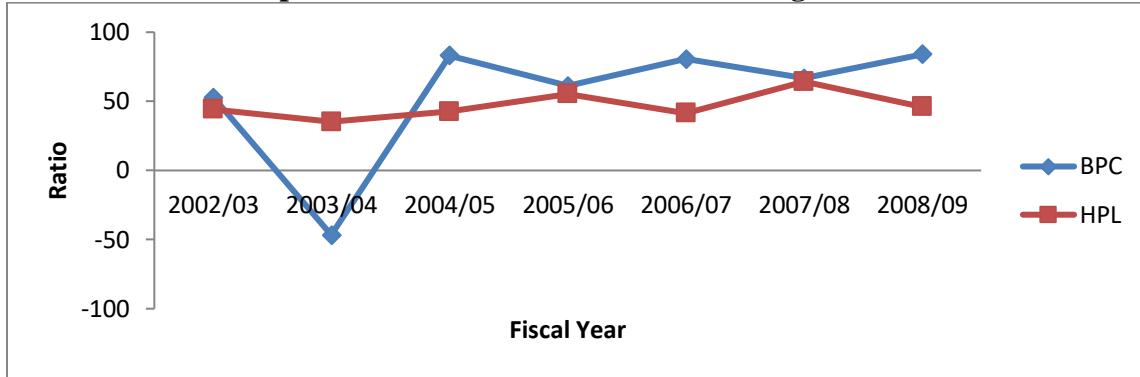
(In, 000)

Fiscal Year	Net Profit After Tax		Sales		Ratio %	
	BPC	HPL	BPC	HPL	BPC	HPL
2002/03	124,626	960,034	236,278	2171,039	52.75	44.22
2003/04	(44,944)	773,597	96,364	2193,850	-46.64	35.26
2004/05	235,418	893,285	283,167	2092,032	83.14	42.70
2005/06	197,761	1162,551	323,134	2104,124	61.20	55.25
2006/07	288,419	878,986	358,419	2121,897	80.47	41.42
2007/08	252,840	1482,560	379,769	2307,461	66.58	64.25
2008/09	353,879	981,533	421,687	2132,995	83.92	46.02
Mean (\bar{X})					54.49	47.02
Standard Deviation (σ)					34.71	8.94
Coefficient of Variation (CV) %					63.70	19.01

Sources: Annual Report of BPC &HPL (F/Y 2002/03-2008/09)

Above table reveals a fluctuating trend of BPC. In F/Y 2003/04, BPC has suffered a loss of 64.64% due to decreased sales. However, the NPR has remained admirable in later years with an overall mean ratio of 54.49%. In contrast, NPR of HPL has increasing or decreasing trend over study period but stable then BPC. Mean of HPL has not better 47.02% but HPL has less volatility because of low fluctuation trend of NPR then BPC. The CV with respect to NPR of BPC and HPL are 63.70% and 19.01% respectively.

Figure No 4.8
Graphical Presentation of Net Profit Margin Ratios



The graphical presentation of NPR shows that after experiencing a massive drop in F/Y 2003/04 and rapid recovery the following year, the NPR of BPC since then, has been experiencing ups and downs in its NPR to a range of 20%. In contrast, the NPR of HPL has been decreasing and increasing in its NPR to a range of 4 to 18%

b) Operating Profit Ratio

Operating Profit Ratio expresses the relationship between operating profits and is usually expressed in percentage. The operating profit should adequate to cover operating expenses and to provide fixed charges, to pay dividend and build up reverses, operating profit ratio is calculated by dividing operating profit by net sales as follows.

Operating Profit Ratio of BPC and HPL for different sampled years has been presented in the table below:

Table No 4.9
Calculation of Operating Profit Ratio

(In, 000)

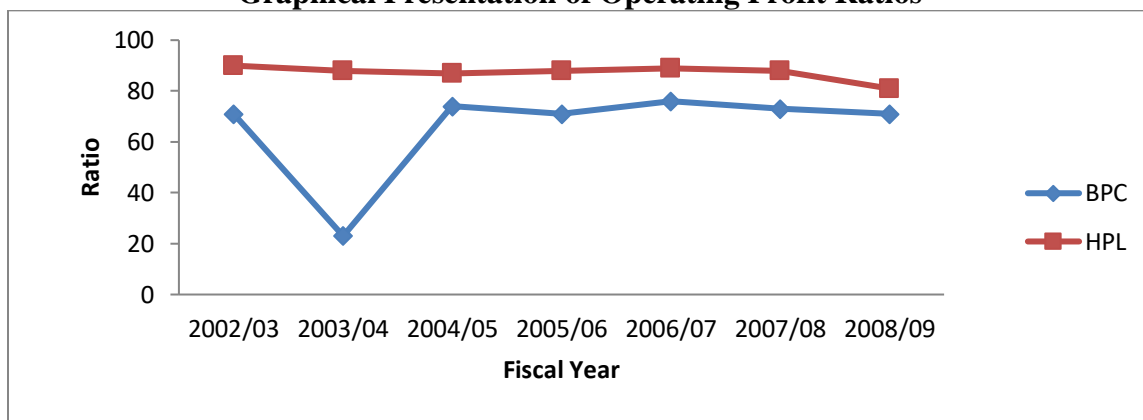
Fiscal Year	Operating Profit		Sales		Ratio %	
	BPC	HPL	BPC	HPL	BPC	HPL
2002/03	167,142	1944,732	236,278	2171,039	71	90
2003/04	22,123	1927,893	96,364	2193,850	23	88
2004/05	209,373	1828,348	283,167	2092,032	74	87
2005/06	230,695	1843,544	323,134	2104,124	71	88
2006/07	272,809	1895,080	358,419	2121,897	76	89
2007/08	276,296	2033,076	379,769	2307,461	73	88
2008/09	299,046	1736,457	421,687	2132,995	71	81
Mean (\bar{X})					66	87
Standard Deviation (σ)					15.77	7.56
Coefficient of Variation (CV) %					23.89	8.69

Sources: Annual Report of BPC &HPL (F/Y 2002/03-2008/09)

Table 4.10 depicts that the operating Profit Ratio of BPC has stable except fiscal year 2003/04. Slightly increasing or decreasing trend over study period. Similarly the operating profit ratio of HPL has better and stable, slightly increasing or decreasing trend over study period. CV of BPC and HPL are 23.89% and 8.69% respectively.

The operating profit ratio of BPC and HPL seems to be better. Generally a 40% ratio is supposed good and only in F/Y 2003/04 has less than 40% of BPC but, HPL Maintain better OPR all over study period.

Figure No 4.9
Graphical Presentation of Operating Profit Ratios



The Graphical presentation of operating profit ratios shows that operating profit ratio of BPC has rapidly drop in F/Y 2003/04 and rapidly recovered in F/Y 2004/05 then increasing trend before last fiscal year 2008/09 and slightly decreased in 2008/09.

Similarly, operating profit ratios of HPL has slightly increasing and decreasing trend over the study period, slightly decreasing trend in first three year. Increasing in next two years then decreasing in last two years but stable.

c) Operating Expenses Ratio (OER)

Operating Expenses Ratio is the yardstick of operating efficiency. The calculation of this ratio comprises computation of all operating cost of goods sold and general administrative expenses. In general higher operating ratio is inefficient due to higher operation cost in terms of sales. Lower operating ratio is favourable, as it will generate higher operating income, which will be sufficient to meet interest, dividend and other expenses of the company.

Table No 4.10

Calculation of Operating Expenses Ratio

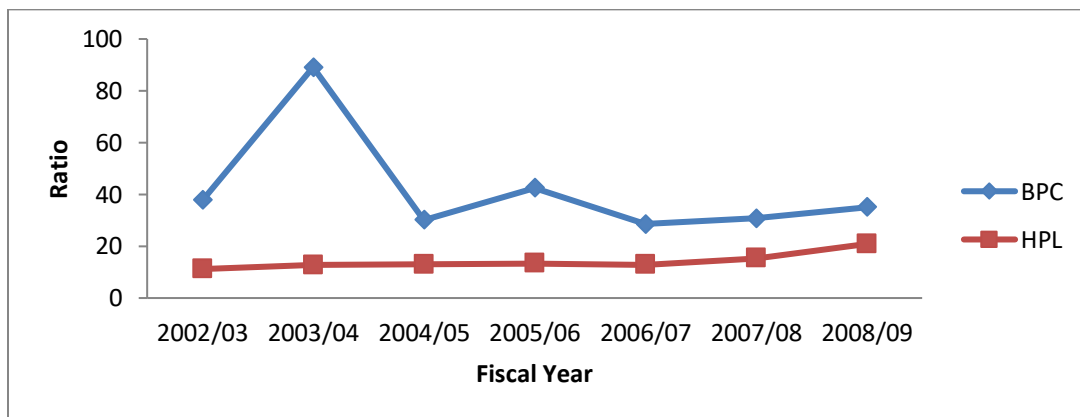
(In, 000)

Fiscal Year	Operating Expenses		Sales		Ratio %	
	BPC	HPL	BPC	HPL	BPC	HPL
2002/03	89,303	242,951	236,278	2171,039	37.80	11.19
2003/04	85,856	280,076	96,364	2193,850	89.10	12.76
2004/05	85,485	271,344	283,167	2092,032	30.19	12.97
2005/06	104,799	280,733	323,134	2104,124	42.43	13.34
2006/07	102,461	271,626	358,419	2121,897	28.59	12.80
2007/08	116,642	353,751	379,769	2307,461	30.71	15.33
2008/09	147,685	445,106	421,687	2132,995	35.02	20.87
Mean (\bar{X})					40.55	14.18
Standard Deviation (σ)					20.03	2.95
Coefficient of Variation (CV) %					49.40	20.80

Sources: Annual Report of BPC &HPL (F/Y 2002/03-2008/09)

Above table a shows a fluctuating trend of Operating Expenses Ratio of BPC with a range of 60.51% and mean ratio of 40.55%. After fiscal year 2003/04, BPC has been able to maintain a decreasing trend of operating expenses ratio around 30%. In Contrast, HPL has maintained an admirably low and consistent trend of OER with a mean ratio of 14.18% and CV of 20.80%. These ratios indicate that BPC has considerably high operating costs with compared to HPL. The rate of fluctuation in ratios is also high in BPC with a CV of 49.40%

Figure No 4.10
Graphical Presentation of Operating Expenses Ratios



The graphical presentation of OERs shows that after a huge increase in F/Y 2003/04, the OER of BPC dropped massively the following year and since, then it has been experiencing small ups

and downs in its OER. In contrast, the OER of HPL has remained much stable since the first year of its operation.

d) Return On Total Assets (ROTA)

Return on Total Assets (ROTA) which is often called the firm's return on total assets, measure the overall effectiveness of management in generating profit with its available assets. The higher the firms return on assets the better it is doing in operation and vice versa.

**Table No 4.11
Calculation of Return on Total Assets Ratio**

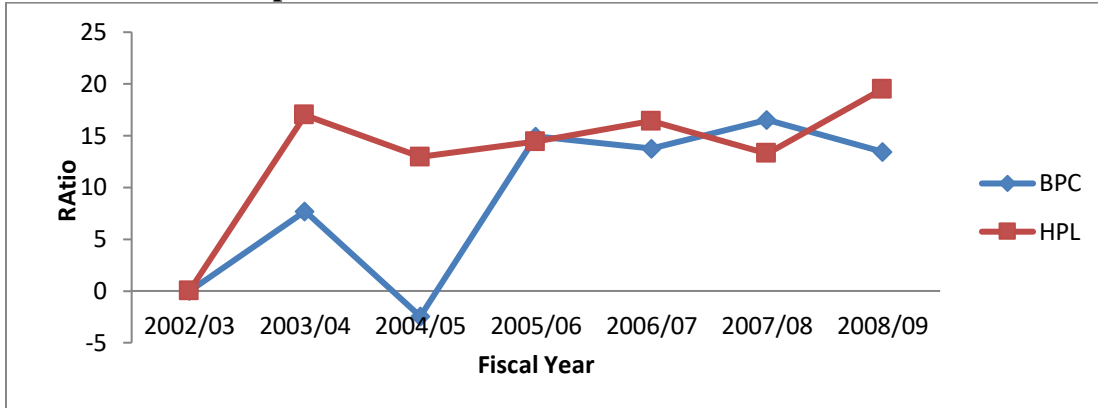
(In, 000)

Fiscal Year	Net Profit + Interest		Total Assets		Ratio %	
	BPC	HPL	BPC	HPL	BPC	HPL
2002/03	124,626	1644,573	1622,165	9679,770	7.68	16.99
2003/04	(44,944)	1423,961	1825,464	10999,525	(2.46)	12.95
2004/05	235,418	1458,182	1579,195	10110,846	14.91	14.42
2005/06	197,761	1655,154	1439,238	10098,600	13.74	16.39
2006/07	288,419	1315,243	1744,447	9897,922	16.53	13.29
2007/08	252,840	1843,439	1882,271	9454,424	13.43	19.50
2008/09	353,879	1255,597	1986,926	8728,710	17.81	14.38
Mean (\bar{X})					11.66	15.42
Standard Deviation (σ)					6.36	2.14
Coefficient of Variation (CV) %					54.55	13.88

Sources: Annual Report of BPC &HPL (F/Y 2002/03-2008/09)

Above table reveals a fluctuating trend of ROTA of BPC with a mean ratio of 11.66%. BPC does not carry loan burden therefore does not include interest calculation while computing ROTA. In F/Y 2003/04, BPC has suffered a negative ROTA of 2046% due to a loss of Rs 44,944. However, thereafter, the ROTA has been satisfactory. In contrast, HPL has maintained stable trend of ROTA. It has slightly fluctuation with an overall mean ratio of 15.42. ROTA of HPL has slightly increased in one year then slightly decreased in another year and it also more stability in ratios which is indicated by a CV of 13.88%. BPC, with a lower mean ratio of ROTA and higher CV of ratios Proves to be less attractive than HPL to investors and lenders.

Figure No 4.11
Graphical Presentation of Return on Total Assets



The Graphical presentation of ROTA ratios shows that the ROTA of BPC dropped in F/Y 2002/03; however it recovered profusely the following year. Since F/Y 2003/04, the ROE of BPC has been experiencing small ups and downs in ROTA. In contrast, the ROTA of HPL has been slightly increased or decreased over 7 year study period except F/Y 2007/08.

e) Return on Shareholders' Equity (ROSHE)

Return on Shareholders' Equity measures the return earned by the shareholder's i.e. owners of the company. To analyze whether the company been able to provide higher return on investment to the owner or not, this ratio necessary. Higher ROE is Favourable as it indicates higher return for shareholders at each rupee of investment.

Table No 4.12
Calculation of Return on Shareholders' Equity

(In, 000)

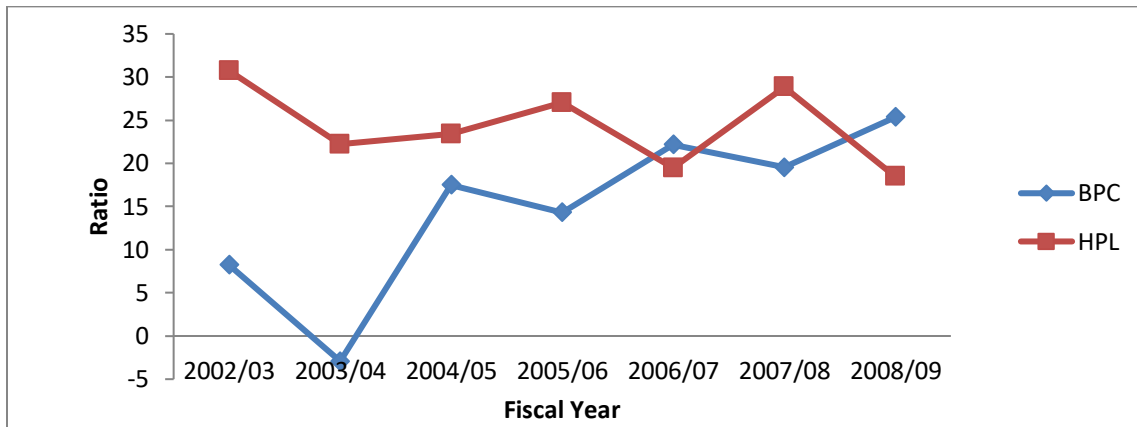
Fiscal Year	Net Profit After Tax		Shareholders' Equity		Ratio %	
	BPC	HPL	BPC	HPL	BPC	HPL
2002/03	124,626	960,034	1515,075	3123,889	8.23	30.73
2003/04	(44,944)	773,597	1537,645	3483,863	(2.92)	22.21
2004/05	235,418	893,285	1345,784	3818,257	17.49	23.39
2005/06	197,761	1162,551	1380,528	4302,006	14.32	27.02
2006/07	288,419	878,986	1300,568	4514,727	22.18	19.47
2007/08	252,840	1482,560	1294,863	5140,056	19.53	28.84
2008/09	353,879	981,533	1395,820	5317,483	25.35	18.46
Mean (\bar{X})					14.88	24.30
Standard Deviation (σ)					9.24	4.36
Coefficient of Variation (CV) %					62.10	17.94

Sources: Annual Report of BPC &HPL (F/Y 2002/03-2008/09)

Above table reveals a fluctuating trend of BPC with a mean ratio of 14.88%. In F/Y 2003/04, BPC has suffered a negative RPE of 2.92%, due to loss of Rs 44,944. However, after that the

ROE has been satisfactory revolving around 20%. In Contrast, HPL has maintained considerable higher trend of ROE with an overall mean ratio of 24.30% and CV of 17.94%. HPL has also slightly fluctuated since fiscal year 2005/06 but higher ROE then BPC. BPC with a lower mean ratio of ROE and higher CV of ratios proves to be less attractive than HPL to shareholders.

Figure No 4.12
Graphical Presentation of Return on Shareholders Equity



The Graphical Presentation of ROE ratios that the ROE of BPC dropped in F/Y 2003/04: however it recovered profusely the following year and at last year BPC has maintain higher ROE. Similarly ROE of HPL has slightly fluctuated since F/Y 2003/04 but HPL has maintained higher ROE than BPC.

4.1.4 Leverage/ Capital Structure Ratios

Leverage Ratio also called as Capital Structure Ratios are calculated to judge the long term financial position of the company. This ratio indicates the mix of fund provided by owners and lenders.

a) Debt-Equity Ratio (D/E Ratio)

Debt to shareholders Equity is calculated dividing total debts by Total Shareholders equity. This ratio shows the relationship between debt and equity capital.

b) Debt-To Total Assets Ratio (DTAR)

Debt to Total Assets Ratio is calculated dividing total debt by total assets. This ratio shows the relationship between debt capital and total assets.

**Table No 4.13
Calculation of Leverage Ratios**

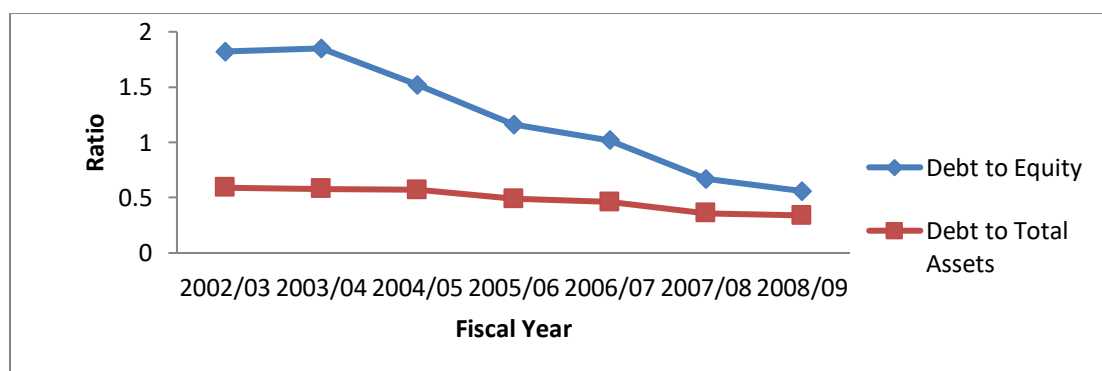
(In, 000)

Fiscal Year	Total Debt Of HPL	Shareholders Equity of HPL	Total Assets Of HPL	Leverage Ratios Of HPL	
				Debt to Equity	Debt to Total Assets
2002/03	5681,902	3123,889	9679,770	1.82	0.59
2003/04	6429,352	3483,863	10999,525	1.85	0.58
2004/05	5807,484	3818,257	10110,846	1.52	0.57
2005/06	4987,040	4302,006	10098,600	1.16	0.49
2006/07	4598,322	4514,727	9897,922	1.02	0.46
2007/08	3432,851	5140,056	9454,424	0.67	0.36
2008/09	2968227	5317,483	8728,710	0.56	0.34
Mean (\bar{X})				1.23	0.48
Standard Deviation (σ)				0.48	0.12
Coefficient of Variation (CV) %				39.02	25

Sources: Annual Report of BPC &HPL (F/Y 2002/03-2008/09)

Above table reveals a decreasing trend of leverage ratios of HPL. The debt to shareholders equity ratio has fallen from 1.85 to 0.56 in last six years due to continuously decrease in long- term debt except F/Y 2003/04 and increase in shareholders equity. Similarly, the debt to total assets ratio has fallen from 0.59 to 0.34 in last 7 years.

**Figure No 4.13
Graphical Presentation of Leverage Ratios**



The Graphical presentation of leverage shows that the leverage ratios of HPL have been decreased gradually through study period.

4.1.5 Invisibility Ratio

An analysis of invisibility ratios helps the investors to know about the performance of the company. Therefore following ratios have been calculated to rest earning capacity.

a) Earnings Per Share (EPS)

This ratio is calculated dividing net profit after tax by number of equity share outstanding. The profitability of a company from the point of view of ordinary share holders is the earning per share (EPS). EPS calculations made over years indicate whether or not the companies earning power on per share has changed over that period. EPS shows the amount of earning attributes to each equity share. If earning per share is high market price of the share may be increased in the market and vice versa. High ratio shows the sound profitability of the components.

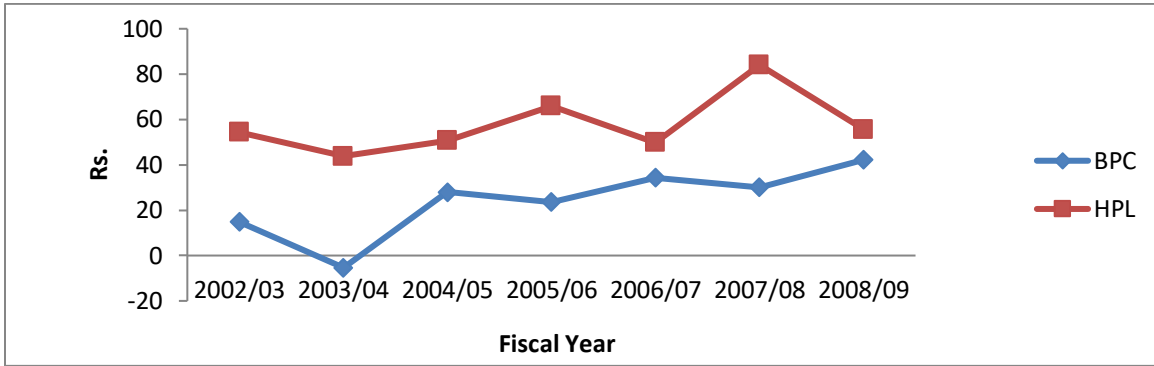
Table No 4.14
Calculation of Earnings Per Share

Fiscal Year	Earning After Tax		No of Equity Share		Rs	
	BPC	HPL	BPC	HPL	BPC	HPL
2002/03	124,626,123	960,034,374	8390,580	17641,439	14.85	54.42
2003/04	(44,944,141)	773,597,416	8390,580	17641,439	(5.36)	43.85
2004/05	235,418,698	893,285,038	8390,580	17641,439	28.06	50.64
2005/06	197,761,775	1162,550,597	8390,580	17641,439	23.57	65.90
2006/07	288,418,689	878,985,535	8390,580	17641,439	34.37	49.82
2007/08	252,839,960	1482,560,083	8390,580	17641,439	30.13	84.04
2008/09	353,879,380	981,532,807	8390,580	17641,439	42.18	55.64
Mean (\bar{X})					23.97	57.76
Standard Deviation (σ)					14.05	12.41
Coefficient of Variation (CV) %					58.61	21.49

Sources: Annual Report of BPC &HPL (F/Y 2002/03-2008/09)

We can find huge difference between the fluctuating trends of EPS of BPC and HPL. While BPC is yielding a satisfactory mean EPS of Rs 23.97. HPL is yielding on better mean EPS of Rs 57.76. In F/Y 2003/04, BPC has suffered a negative EPS of Rs 5.36 due to a loss of Rs 44,944,141. However, thereafter the EPS of BPC has been much better revolving around of Rs 30. HPL has less Variability in ratios, because of its High EPS. The CV with respect to EPS of BPC and HPL are 58.61% and 21.49% respectively.

Figure No 4.14
Graphical Presentation of Earning Per Share



The Graphical presentation of EPS ratios shows that the EPS of BPC dropped in F/Y 2003/04: however it recovered profusely the following years. Since, F/Y 2004/05, the EPS of BPC has been experiencing small ups and downs in its EPS. In contrast, the EPS of HPL has been experiencing bigger ups and downs since F/Y 2005/06 in its EPS.

b) Dividend Per Share (DPS)

The Dividend per Share (DPS) is the per share earnings distributed to the shareholders. It can be calculated total Dividend Distributed divided by No of share outstanding. This ratio shows per rupee earnings actually distributed to common stock holders per share held by them. High ratio is favourable for the Shareholders.

Table No 4.15
Calculation of Dividend per Share

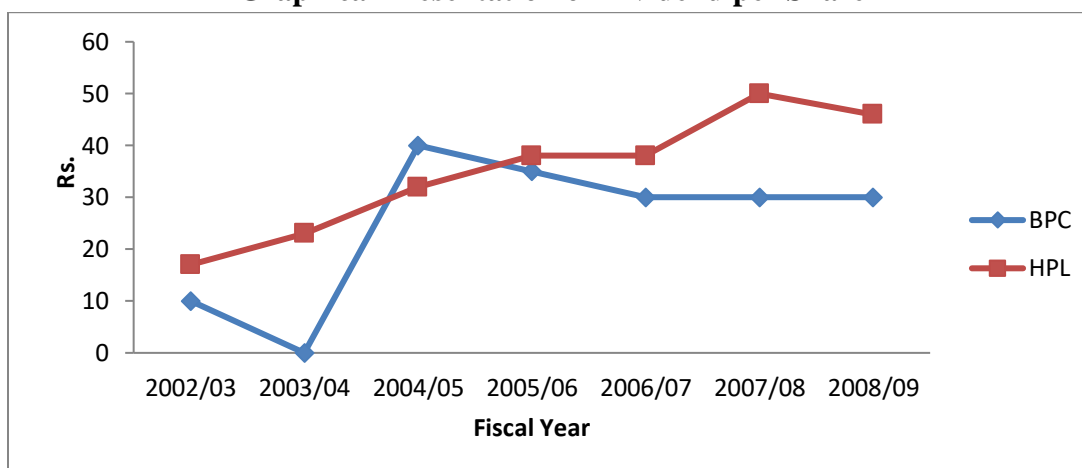
Fiscal Year	Total Distributed dividend		No of Equity Share		Rs	
	BPC	HPL	BPC	HPL	BPC	HPL
2002/03	83,905,800	293,358,000	8390,580	17641,439	10	17
2003/04	0	413,623,000	8390,580	17641,439	0	23
2004/05	335,623,200	558,891,200	8390,580	17641,439	40	32
2005/06	293,670,300	678,801,400	8390,580	17641,439	35	38
2006/07	251,718,000	666,265,000	8390,580	17641,439	30	38
2007/08	251,635,000	887,760,000	8390,580	17641,439	30	50
2008/09	251,717,300	804,105,000	8390,580	17641,439	30	46
Mean (\bar{X})					25	34.86
Standard Deviation (σ)					13.36	10.95
Coefficient of Variation (CV) %					53.44	31.41

Sources: Annual Report of BPC &HPL (F/Y 2002/03-2008/09)

Above table reveals fluctuating trend of DPS of BPC in Fiscal Year 2003/04, BPC has not distributed any dividend due to ma loss of Rs 44,944, While DPS of BPC of last 3 years is constant i.e. Rs 30. In Contrast, the DPS of HPL is increasing trend except last year. DPS of HPL

is better than BPC. The Mean DPS of BPC and HPL are Rs 25 and Rs 34.86 respectively. The CV with respect to DPS of BPC and HPL are 53.44% and 31.41% respectively which indicates high fluctuations in DPS of BPC rather than HPL.

Figure No 4.15
Graphical Presentation of Dividend per Share



The graphical presentation of DPS ratios shows that BPC have been experiencing highly fluctuating DPS ratios through the beginning of the study period. The EPS of BPC dropped 0 % in F/Y 2003/04; however it jumped on 40% the following year then the DPS ratios of BPC can be stable in last 3 years. In contrast DPS ratios of HPL has stable and increasing trend from starting study period to 6 years and slightly decreased in F/Y 2008/09.

c) Dividend Payout Ratio (DPR)

This ratio is the ratio between Dividends per Share (DPS) to Earning per Share (EPS) is known as Dividend Payout Ratio. It determines the portion of per share dividend paid out of per share earning. The higher ratio is better to the share holders. It builds faithfulness of the company.

Table No 4.16
Calculation of Dividend Payout Ratio

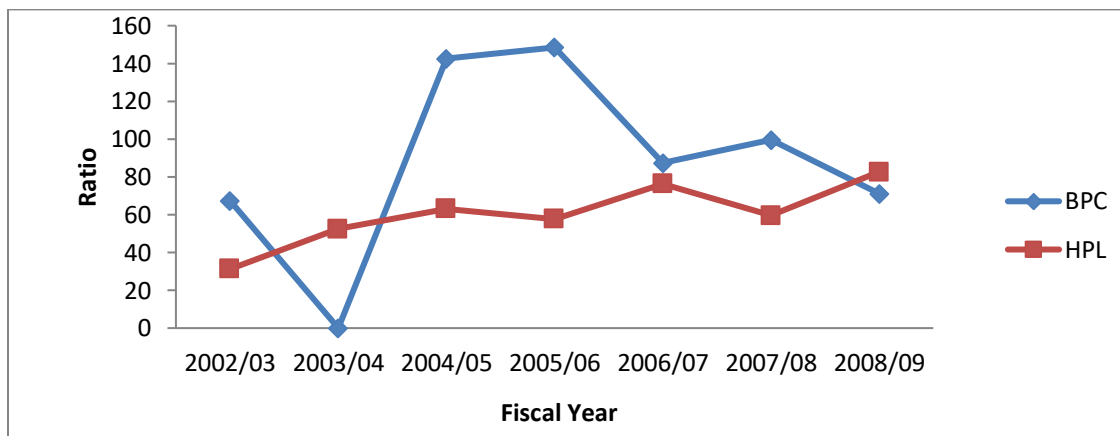
Fiscal Year	Dividend Per Share		Earning Per Share		Ratios %	
	BPC	HPL	BPC	HPL	BPC	HPL
2002/03	10	17	14.85	54.42	67.34	31.24
2003/04	0	23	(5.36)	43.85	0	52.45
2004/05	40	32	28.06	50.64	142.55	63.19
2005/06	35	38	23.57	65.90	148.49	57.66

2006/07	30	38	34.37	49.82	87.29	76.27
2007/08	30	50	30.13	84.04	99.57	59.50
2008/09	30	46	42.18	55.64	71.12	82.67
Mean (\bar{X})					88.05	60.43
Standard Deviation (σ)					46.64	15.46
Coefficient of Variation (CV) %					52.97	25.58

Sources: Annual Report of BPC &HPL (F/Y 2002/03-2008/09)

Above table reveals fluctuating trend of DPR of both Companies but higher in BPC. In F/Y 2003/04, BPC has not distributed any dividend due to loss of Rs 44944. The DPR of F/Y 2004/05, 2005/06 & 2006/07 has been much luring to the investors of BPC revolving around 120%. In contrast, HPL shows the lower DPR than BPC but it has stable compared then BPC. The CV with respect to DPR of BPC and HPL are 52.97% and 25.58%. Due to high fluctuation, CV of BPC is higher than HPL.

Figure No 4.16
Graphical Presentation of Dividend Payout Ratios



The Graphical presentation of DPR ratios shows that BPC has been experiencing highly fluctuating DPR through the study period. The DPR of BPC dropped to 0% in F/Y 2003/04; however it jumped on 142% the following year. The DPR ratio of HPL has lower than BPC in overall study period but it can be considered much stable than that of BPC.

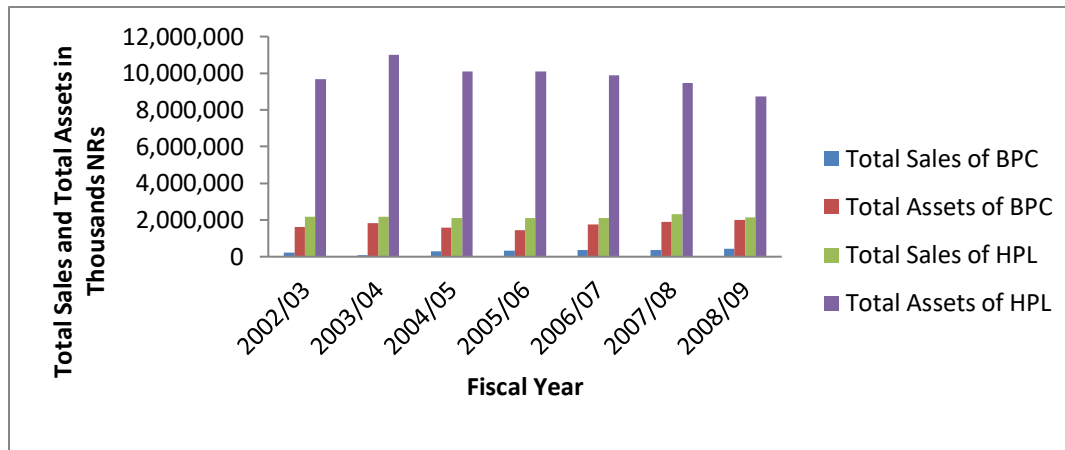
4.1.6 Correlation Analysis

Karl Pearson's coefficient of correlation is most widely used in practice to measure the degree of relationship between two variables of the company. So, it measured by using the following formula.

D) Correlation between Total Sales and Total Assets

The coefficient of Correlation between total sales and total Assets of both companies for the different sampled years has been calculated in Appendix A.

Figure No 4.17
Graphical Presentation of Correlation between Total Sales and Total Assets



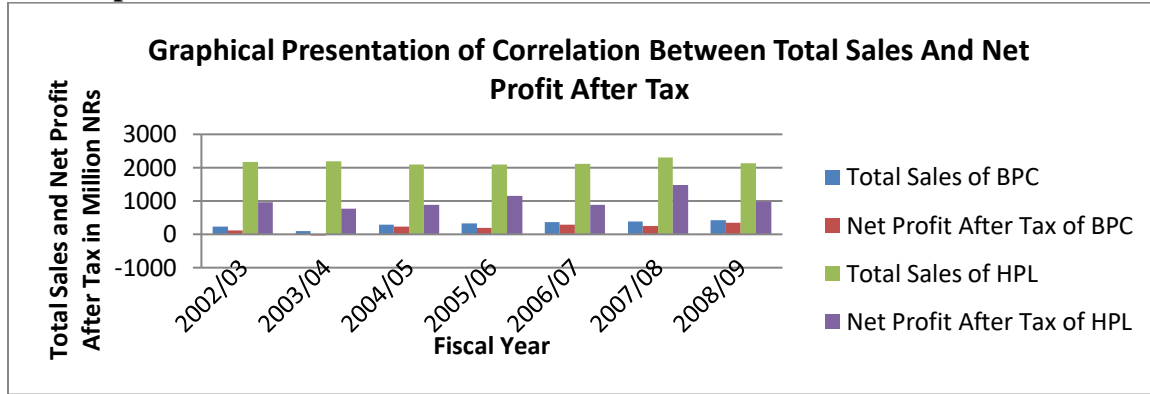
The coefficient of correlation between Sales (X) and Total Assets (Y) of BPC and HPL came to be 0.221 and -0.079 respectively. This suggests that that the two variables have positive relation to each other in BPC and Negative relation to each other in HPL.

However, coefficient of correlation in BPC appeared less than 6 times of PE i.e. $0.221 < 6 \times 0.242$ which implies that the relation between sales and total assets is not at significant level. Similarly coefficient of correlation in HPL also appeared less than 6 times of PE i.e. $-0.079 < 6 \times 0.253$, which implies that the relation between sales and total assets is not at significant level.

II) Correlation between Total Sales and Net Profit After Tax

The coefficient of correlation between Total Sales and Net profit after Tax of both companies for different sampled years has been calculated in Appendix A.

Figure No 4.18
Graphical Presentation of Correlation between Total Sales and Net Profit after Tax



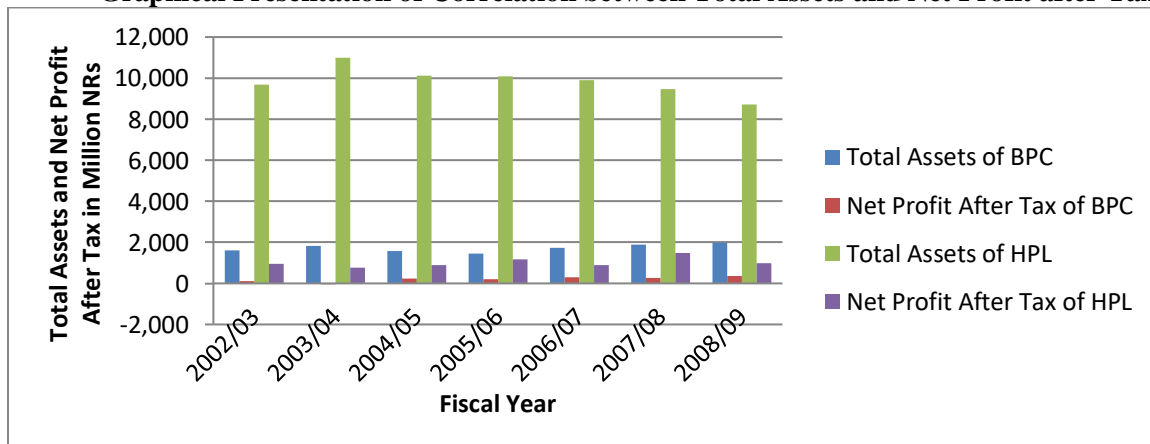
The Coefficient of Correlation between Sales (X) and Net Profit after Tax (Y) of BPC and HPL to 0.970 and 0.629 respectively, this suggests that the two variables have positive relation to each other.

Coefficient of Correlation in BPC appeared greater than 6 times of PE i.e. $0.970 > 6 \times 0.015$ which implies that the relation between sales and net profit after tax is positive at significant level. Similarly, Coefficient of Correlation in HPL appeared less than 6 times of PE i.e. $0.629 < 6 \times 0.154$ which implies that the relation between sales and net profit after tax is positive but not significant level.

III) Correlation between Total Assets and Net Profit After Tax

The coefficient of correlation between Total Assets and Net profit after Tax of both companies for different sampled years has been calculated in Appendix A.

Figure No 4.19
Graphical Presentation of Correlation between Total Assets and Net Profit after Tax



The Coefficient of correlation between Total Assets (X) and Net Profit after Tax (Y) of BPC came to be 0.196. This suggests that the two variables have positive relation to each other. Similarly the coefficient of correlation between total Assets (X) and Net Profit after Tax (Y) of HPL came to be -0.423, this suggests that the two variables have negative relation to each other and , it is likely that decrease in total assets is associated to increase in net profit after tax of HPL.

However, the coefficient of correlation in BPC appeared less than six times of PE i.e. $0.196 < 6 \times 0.245$ which implies that the relation between total assets and net profit after tax is not a significant level. Similarly, the coefficient of correlation in HPL also appeared less than six times of PE i.e. $-0.423 < 6 \times 0.209$ which implies that the relation between total assets and net profit after tax is not a significant level.

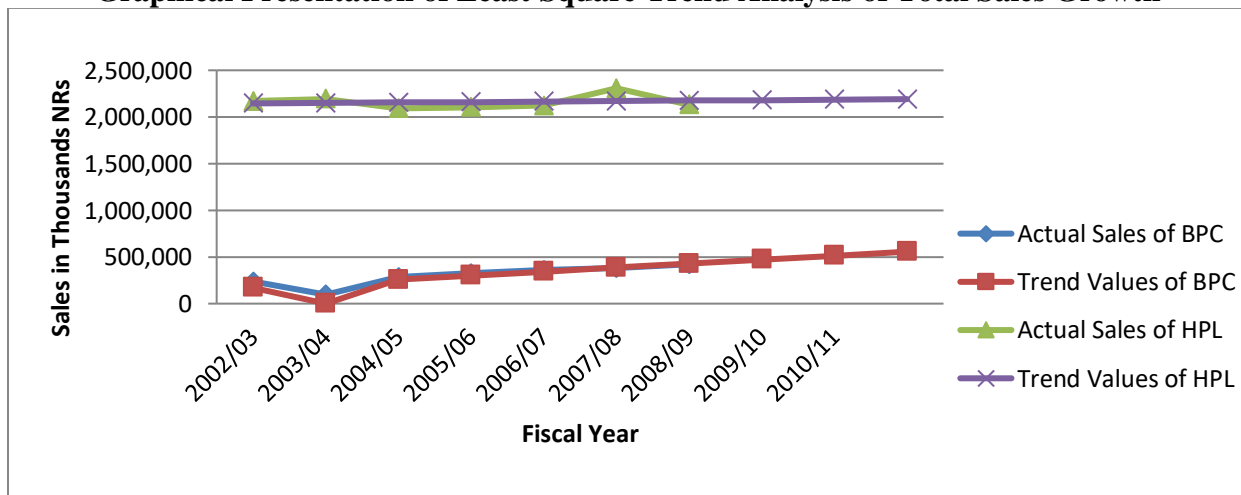
4.1.7 Least Square Linear Growth Trend Analysis

Trend Analysis is a mathematical method which is widely used to find out future tendencies based on past findings and present assumption. Furthermore it is applied for findings out a trend line for those series which change periodically in absolute amount.

D) Least Square Trend Analysis of Total Sales Growth

Least Square Trend Analysis of Total Sales Growth of both Companies for the different sampled years has been calculated in Appendix B.

Figure No 4.20
Graphical Presentation of Least Square Trend Analysis of Total Sales Growth



The Y-intercept (a) and slope of the trend line (b) of total sales of BPC remained to be Rs 299,831.14 and Rs 42796.04 respectively. During the study period, total sales of BPC exposed an increasing trend. The trend equation of total sales is given by:

$$Y_c = 299,831.14 + 42,796.04X$$

According to the above trend equation, the forecasted value of total sales of BPC for coming three years would be Rs 471,015.3, 513,811.34 and Rs 556,607.38 thousand respectively.

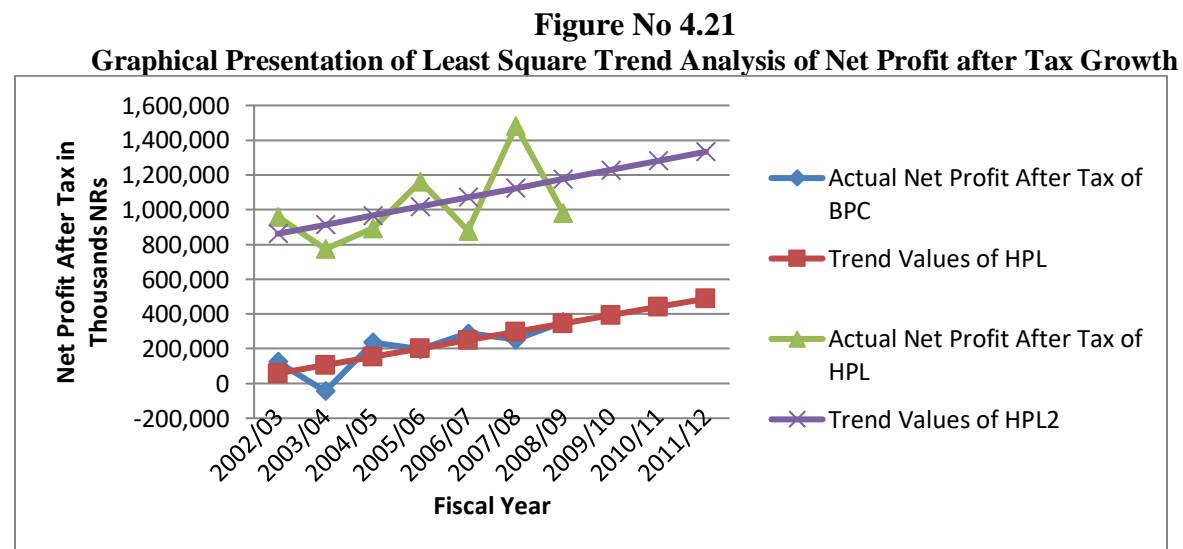
Similarly, the Y-intercept (a) and slope of the trend line (b) of total sales of HPL remained to be Rs 2160,485.43 and Rs 5105.53 respectively. During the study period, total sales of HPL exposed an increasing trend. The trend equation of total sales is given by:

$$Y_c = 2160,485.43 + 5105.53X$$

According to the above trend equation, the forecasted value of total sales of HPL for coming three years would be Rs 2180,907.55, Rs 2186,013.08 and Rs 2191,118.81 thousand respectively.

II) Least Square Trend Analysis of Net Profit After Tax Growth

Least Square Trend Analysis of Net Profit after Tax Growth of both Companies for the different sampled years has been calculated in Appendix B.



The Y-intercept (a) and slope of the trend line (b) of Net Profit after Tax of BPC remained to be Rs 201,142.71 and Rs 47,726 respectively. During the study period, Net Profit after Tax of BPC exposed an increasing trend. The trend equation of Net Profit after Tax is given by:

$$Y_c = 201,142.71 + 47,726X$$

According to the above trend equation, the forecasted value of Net Profit after tax of BPC for coming three years would be Rs 392,046.71, Rs 439,772.71 and Rs 487,498.71 thousand respectively.

Similarly, the Y-intercept (a) and slope of the trend line (b) of Net Profit after Tax of HPL remained to be Rs 1018,935.14 and Rs 52,433 respectively. During the study period, Net Profit after Tax of HPL exposed an increasing trend. The trend equation of Net Profit after Tax is given by:

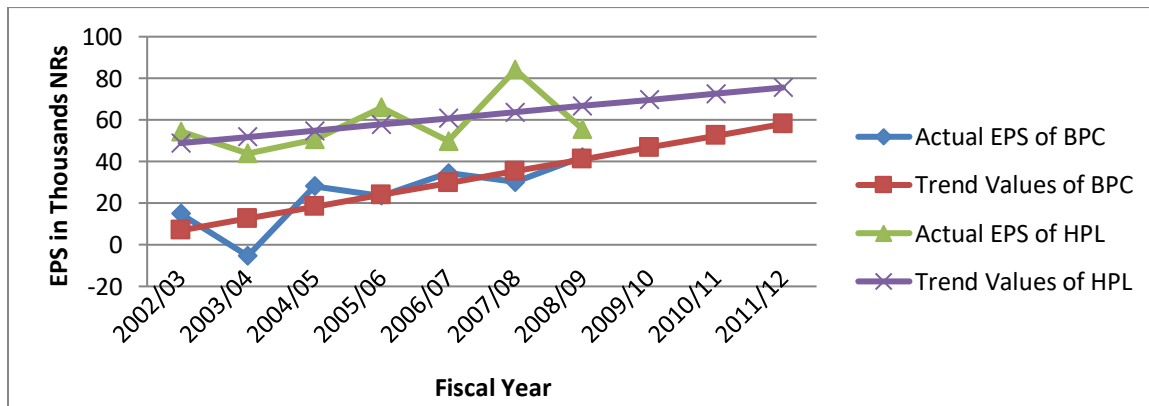
$$Y_c = 1018,935.14 + 52,433X$$

According to the above trend equation, the forecasted value of Net Profit after Tax of HPL for coming three years would be Rs 1228,667.14, Rs 1281,100.14 and Rs 1333,533.14 thousand respectively.

III) Least Square Trend Analysis of Earning Per Share Growth

Least Square Trend Analysis of Earning per Share Growth of both Companies for the different sampled years has been calculated in Appendix B.

Figure No 4.22
Graphical Presentation of Least Square trend Analysis of EPS Growth



The Y-intercept (a) and slope of the trend line (b) of Earning per Share of BPC remained to be Rs 23.97 and Rs 5.69 respectively. During the study period, Earning per Share of BPC exposed an increasing trend. The trend equation of Earning per Share is given by:

$$Y_c = 23.97 + 5.69X$$

According to the above trend equation, the forecasted value of Earning per Share of BPC for coming three years would be Rs 46.73, Rs 52.42 and Rs 58.11 respectively.

Similarly, the Y-intercept (a) and slope of the trend line (b) Earnings per Share of HPL remained to be Rs 57.76 and Rs 2.97 respectively. During the study period, Earning per Share of HPL exposed an increasing trend. The trend equation of EPS is given by:

$$Y_c = 57.76 + 2.97X$$

According to the above trend equation, the forecasted value of EPS of HPL for coming three years would be Rs 69.64, Rs 72.61 and Rs 75.58 thousand respectively.

4.2 Presentation and Analysis of Data from Primary Sources

This Section includes the information related with the study from primary sources. Primary data were obtained through questionnaire made with the managerial officials and engineers of both companies. In this section I have taken as 25 Respondents. The presentation and analysis of these primary data are given below.

4.2.1 Performance Evaluation Through Ratio Analysis

To take the respondents view of ratio analysis used to measure performance in the selected companies, a question was asked “Do you agree that the ratio used to measure performance in your Companies?”

The responses provided by respondents are tabulated below

Table No 4.17

Group	Agree	Disagree	Total
Executive	10	0	10
Non-executive	11	4	15
Total	21	4	25

Sources: Primary Data Collection 2066

Above question was asked and analyzed through Chi-square method. In chi-square test two hypotheses should be taken and accordingly these two hypotheses were set.

- Null Hypotheses (H_0): Ratio analysis is used to measure performance in the selected Companies.
- Alternative Hypotheses (H_1): Ratio analysis is not used to measure performance in the selected Companies.

Test statistics: Under H_0 the test Statistics is: $\chi^2 = \sum \frac{(O-E)^2}{E}$

Row, Column	O	E	O-E	(O-E) ²	(O-E) ² /E
1,1	10	8.4	1.6	2.56	0.30
1,2	0	1.6	-1.6	2.56	1.6
2,1	11	12.6	-1.6	2.56	0.20
2,2	4	2.4	1.6	2.56	1.07
Total					3.17

Here calculated $\chi^2 = 3.17$

Degree of Freedom = $(r-1)(c-1) = (2-1)(2-1) = 1$

$\alpha = 5\%$

Tabulated Value of $\chi^2 = 0.05(1) = 3.841$

Conclusion: Since calculated value of χ^2 is less than tabulated value of χ^2 , H_0 is accepted, which means that ratio analysis is used to measure performance in the selected companies. From above test we can conclude that personal think that ratio analysis is used to measure performance in the selected companies.

4.2.2 ROE as a Measure of Performance

To know the respondents' view of ROE shows the performance of the selected companies, a question was asked "Do you agree that ROE show the performance of your Company?"

The responses provided by respondents are tabulated below:

Table No 4.18

Group	Agree	Disagree	Total
Executive	9	1	10
Non-executive	12	3	15
Total	21	4	25

Sources: Primary Data Collection 2066

Above question was asked and analyzed through Chi-square method. In chi-square test two hypotheses should be taken and accordingly these two hypotheses were set.

- Null Hypotheses (H_0): ROE shows the performance of the selected Companies
- Alternative Hypotheses (H_1): ROE does not shows the performance of the selected companies.

Test statistics: Under H_0 the test Statistics is: $\chi^2 = \sum \frac{(O-E)^2}{E}$

Row, Column	O	E	O-E	(O-E) ²	(O-E) ² /E
1,1	9	8.4	0.6	0.36	0.043
1,2	1	1.6	-0.6	0.36	0.225
2,1	12	12.6	-0.6	0.36	0.029
2,2	3	2.4	0.6	0.36	0.15
Total					0.447

Here calculated $\chi^2 = 0.447$

Degree of Freedom = $(r-1)(c-1) = (2-1)(2-1) = 1$

$\alpha = 5\%$

Tabulated Value of $\chi^2 = 0.05(1) = 3.841$

Conclusion: Since calculated value of χ^2 is less than tabulated value of χ^2 , H_0 is accepted, which means that ROE shows the performance of the selected companies. From above test we can conclude that personnel think that ROE shows the performance of the selected Companies.

4.2.3 Total Sales are used in the proper way to maximize the profit

To know the respondents' views of Total sales are used in the proper way to maximize the profit, a question was asked "Do you agree that total assets are used in the proper way to maximize the profit in your Companies?"

The responses provided by respondents are tabulated below

Table No 4.19

Group	Agree	Disagree	Total
Executive	7	3	10
Non-executive	9	6	15
Total	16	9	25

Sources: Primary Data Collection 2066

Above question was asked and analyzed through Chi-square method. In chi-square test two hypotheses should be taken and accordingly these two hypotheses were set.

- Null Hypotheses (H_0): Total sales are used in the proper way to maximize the profit of these companies.
- Alternative Hypotheses (H_1): Total sales are not used in the proper way to maximize the profit of these companies.

Test statistics: Under H_0 the test Statistics is: $\chi^2 = \sum \frac{(O-E)^2}{E}$

Row, Column	O	E	O-E	(O-E) ²	(O-E) ² /E
1,1	7	6.4	0.60	0.36	0.056
1,2	3	3.6	-0.60	0.36	0.10
2,1	9	9.6	-0.60	0.36	0.0375
2,2	6	5.4	0.60	0.36	0.067
Total					0.26

Here calculated $\chi^2 = 0.26$

Degree of Freedom = (r-1) (c-1) = (2-1) (2-1) = 1

$\alpha = 5\%$

Tabulated Value of $\chi^2 = 0.05(1) = 3.841$

Conclusion: Since calculated value of χ^2 is less than tabulated value of χ^2 , H_0 is accepted, which means that Total sales are used in the proper way to maximize the profit of these companies. We can conclude that personal think that sales are used in the proper way to maximize the profit of these companies.

4.2.4 Comparison of the present Return and Expectation of Investors

To compare the expected and actual earning status of the investors from the share investment, a question was asked “Do you agree that the level of return you are presently getting is higher than your expectation from share investment?”

The responses provided by respondents are tabulated below:

Table No 4.20

Group	Agree	Disagree	Total
Executive	6	4	10
Non-executive	10	5	15
Total	16	9	25

Sources: Primary Data Collection 2066

Above question was asked and analyzed through Chi-square method. In chi-square test two hypotheses should be taken and accordingly these two hypotheses were set.

- Null Hypotheses (H_0): The level of return presently obtained from these companies is higher than the expectation of investors.
- Alternative Hypotheses (H_1): The level of return presently obtained from these companies is not higher than the expectation of investors.

Test statistics: Under H_0 the test Statistics is: $\chi^2 = \sum \frac{(O-E)^2}{E}$

Row, Column	O	E	O-E	(O-E) ²	(O-E) ² /E
1,1	6	6.4	-0.4	0.16	0.025
1,2	4	3.6	0.4	0.16	0.044
2,1	10	9.6	0.4	0.16	0.017
2,2	5	5.4	-0.4	0.16	0.029
Total					0.115

Here calculated $\chi^2 = 0.115$

Degree of Freedom = $(r-1)(c-1) = (2-1)(2-1) = 1$

$\alpha = 5\%$

Tabulated Value of $\chi^2 = 0.05(1) = 3.841$

Conclusion: Since calculated value of χ^2 is less than tabulated value of χ^2 , H_0 is accepted, which means that the level of return presently obtained from these companies is higher than the expectation of investors. From above test we can conclude that personnel think that the level of return presently obtained from these companies is higher.

4.2.5 Role of operating expenses in the performance of companies

To know the view point of respondents about the role of operating expenses in the performance of companies, a question was asked, “Do you agree that, operating expenses affected the performance of companies?”

The responses provided by respondents are tabulated below:

Table No 4.21

Group	Agree	Disagree	Total
Executive	10	0	10
Non-executive	13	2	15
Total	23	2	25

Sources: Primary Data Collection 2066

Above question was asked and analyzed through Chi-square method. In chi-square test two hypotheses should be taken and accordingly these two hypotheses were set.

- Null Hypotheses (H₀): Operating expenses affect the performance of companies.
- Alternative Hypotheses (H₁): Operating expenses does not affect the performance of companies.

Test statistics: Under H₀ the test Statistics is: $\chi^2 = \sum \frac{(O-E)^2}{E}$

Row, Column	O	E	O-E	(O-E) ²	(O-E) ² /E
1,1	10	9.2	0.8	0.64	0.070
1,2	0	0.8	-0.8	0.64	0.08
2,1	13	13.8	-0.8	0.64	0.046
2,2	2	1.2	0.8	0.64	0.533
Total					1.449

Here calculated $\chi^2 = 1.449$

Degree of Freedom = (r-1) (c-1) = (2-1) (2-1) = 1

$\alpha = 5\%$

Tabulated Value of $\chi^2 = 0.05(1) = 3.841$

Conclusion: Since calculated value of χ^2 is less than tabulated value of χ^2 , H₀ is accepted, which means that the operating expenses affect the performance of companies. From above test we can conclude that personnel think that the operating expenses affect the performance of companies.

4.2.6 Comparison of Financial performance between private and Public Companies

To know the view point of respondents about the performance between private and public companies, a question was asked “Do you agree that, private sectors performance is better than public sectors?”

The responses provided by respondents are tabulated below:

Table No 4.22

Group	Agree	Disagree	Total
Executive	5	5	10
Non-executive	9	6	15
Total	14	11	25

Sources: Primary Data Collection 2066

Above question was asked and analyzed through Chi-square method. In chi-square test two hypotheses should be taken and accordingly these two hypotheses were set.

- Null Hypotheses (H₀): Private sectors performance is better than public sectors.
- Alternative Hypotheses (H₁): Private sectors performance is not better than public sectors.

Test statistics: Under H₀ the test Statistics is: $\chi^2 = \sum \frac{(O-E)^2}{E}$

Row, Column	O	E	O-E	(O-E) ²	(O-E) ² /E
1,1	5	5.6	-0.6	0.36	0.064
1,2	5	4.4	0.6	0.36	0.082
2,1	9	8.4	0.6	0.36	0.043
2,2	6	6.6	-0.6	0.36	0.055
Total					0.244

Here calculated $\chi^2 = 0.244$

Degree of Freedom = (r-1) (c-1) = (2-1) (2-1) = 1

$\alpha = 5\%$

Tabulated Value of $\chi^2 = 0.05(1) = 3.841$

Conclusion: Since calculated value of χ^2 is less than tabulated value of χ^2 , H₀ is accepted, which means that the private sectors performance is better than public sectors. From above test we can conclude that personnel think that, private sectors have maintained good performance rather than public sectors.

4.3 Major Findings of the Study

From the above analysis and interpretation of data, the following findings have been drawn.

4.3.1 Major Findings from Secondary Sources

Current ratio of BPC in fluctuating trend throughout the study period but current ratio of HPL is stable than BPC. The mean ratio of HPL is higher than BPC. Likewise CV of HPL is lower than BPC, which means that BPC has more fluctuation in ratios as compared with HPL. Mean ratio

shows the highly liquid position of BPC and HPL, which shows the hydropower company did not have proper investment plan. Both companies could maintain the conventional standard of 2:1. However the average ratio of HPL is greater than that of BPC, which signifies that HPL is more capable of meeting immediate liabilities in contrast to BPC.

The CV of BPC for quick ratio is greater than HPL, which shows more fluctuation in quick position. Quick ratio of HPL is more stable than BPC throughout the study period. Both companies could maintain the conventional standard of 1:1 the coverage ratio of HPL is greater than BPC, Which means that HPL is more successful in maintaining the liquidity position.

Mean ratio of fixed assets turnover ratio of BPC is higher than HPL. It indicates that BPC has efficient utilization of fixed assets. But CV of BPC has higher than that of HPL because of its higher fluctuating turnover ratios.

The total assets turnover ratios of both companies in the study period are not good. It shows the increment in ratio but increment is not satisfactory. To compare each other, the mean ratio of total assets turnover ratio of HPL is higher than BPC. It indicates that HPL has efficiency in utilization of companies' scarce source. Similarly CV of BPC is higher than HPL. It shows that, HPL has less volatility.

Average DTR of BPC and HPL are 6.611 and 5.28, it indicates that BPC has maintain good receivable management but CV of BPC is higher than HPL ($35.55\% > 5.09\%$) because of high fluctuation of DTR of BPC.

Mean ratio of Average collection period of BPC and HPL are 65 days and 68 days respectively. It indicates that, BPC has maintained more efficiency in collection of receivable. Similarly both companies receivable period was fluctuating trend but HPL has less volatility. So, CV of BPC is also higher than the CV of HPL.

The mean ratio of Capital employed turnover ratio of BPC and HPL are 0.217 and 0.24 respectively. It indicates that the capital employed ratio of both companies in the study period

does not seem good, but compare each other HPL has better utilization of capital employed. Similarly CV of Capital employed ratio of BPC and HPL came to be 37.33% and 7.08%, it indicates that BPC has more fluctuating trend in capital employed ratios.

The mean of NPRs of BPC and HPL came to be 54.49% and 47.02% respectively, it indicates that both companies has maintain good net profit ratio. Because the average standard net profit ratio is 12% but to compare each other BPC has better to generate net income per rupee of sales. Similarly, CV of NPRs of BPC and HPL came to be 63.70% and 19.01%, it indicates that BPC has more fluctuate in NPRs or HPL has less volatility throughout study period.

The mean of operating profit ratio of BPC and HPL are 66% and 87% respectively, it reveals that both companies' ratios seem to be better. To compare each other operating profit ratio of HPL has higher than that of BPC. Similarly CV of operating profit ratio of BPC and HPL came to be 23.89% and 8.69%, it indicates that HPL ratios have less variability than BPC.

Mean of OERs of BPC and HPL came to be 40.55% and 14.18% respectively. BPC has high operating expenses because of higher ratio in F/Y 2003/04. Similarly CV of OERs of BPC and HPL has 49.40% and 20.80% respectively, it reveals that the OERs of BPC has high fluctuating trend rather than HPL.

Return on total assets of BPC is more fluctuating trend than HPL. So CV of ROAs of BPC is higher than HPL i.e. $54.55\% > 13.88\%$. Similarly mean of ROAs of BPC and HPL came to be 11.66 and 15.42 respectively; it indicates that HPL made better return to use its total assets rather than BPC.

Return on shareholders' equity ratio measures the return on shareholders' investment in the hydropower companies. The average ratios of BPC and HPL for the return on shareholders' equity are 14.88% and 24.30% respectively i.e. the average ratio of HPL for the return on shareholders' equity is higher than BPC. Likewise the CV of HPL is lower than BPC ($62.10\% > 17.94\%$), which indicates that HPL ratios is less volatility than that of BPC.

Debt to equity ratio of HPL is slightly increasing and decreasing trend over the study period. Its mean ratio and CV came to be 1.23 and 39.02% respectively. Similarly debt to assets ratio of HPL is decreasing trend throughout the study period. Its mean ratio and CV came to be 0.48 and 25% respectively, which is less than debt to equity ratio. In contrast there was not debt capital in BPC and it was fully financed by equity.

Mean ratio of EPS of BPC and HPL are Rs 23.97 and Rs 57.76 respectively, it reveals that HPL made higher EPS than BPC. Similarly, CV of EPS of BPC and HPL came to be 58.61% and 21.49% respectively. In the cause of higher fluctuate in EPS. The CV of BPC is higher than HPL.

Mean ratio of DPS of BPC and HPL came to be Rs 35 and Rs 34.86 respectively. Similarly CV of DPS of BPC and HPL are 53.44% and 31.41% respectively. In above ratio and percentage says that the position of HPL is better than BPC.

Dividend payout ratio of both companies seem to be fluctuating trend but higher in BPC. Mean ratio of BPC and HPL came to be 88.05% and 60.43% respectively. To compare each other the dividend payout ratio of BPC is better than HPL but higher fluctuate in DPRs of BPC. The CV of DPRs of BPC is higher than HPL.

The coefficient of correlation between sales and total assets of BPC and HPL came to be 0.221 and -0.079 respectively. This value of correlation indicates the positive relation to each other for BPC and negative relation to each other for HPL. However, considering the probable error of BPC and HPL, since the Value of r is less than 6 PE, the correlation is not at significant level.

The coefficient of correlation between sales and net profit after tax of BPC and HPL came to be 0.970 and 0.629 respectively. This value suggests that the two variables have positive relation to each other. Considering the probable error of BPC, since the value of r is greater than 6 PE so the correlation is at significant level. But, the probable error of HPL, the value of r is less than 6 PE so the correlation is not at significant level.

The coefficient of correlation between total assets and net profit after tax of BPC came to be 0.196. This suggest that the two variable have positive relation to each other but value of r is less than 6 PE i.e. $0.196 < 6 \times 0.245$ so, the correlation is not at a significant level. Similarly, the coefficient of correlation between total assets and net profit after tax of HPL came to be -0.423, this suggests that the two variable have negative relation to each other and the value of r is less then 6 PE i.e. $-0.423 < 6 \times 0.209$, so the correlation is not at a significant level.

According to the trend equation , the forecasted value of total sales of BPC for coming three years would be Rs 471,015.3, Rs 513,811.34 and Rs 556,667.38 thousand respectively. Similarly, the forecasted values of total sales of HPL for coming three years would be Rs 2180,907.55, Rs 2186,013.08 and Rs 2191,118.61 thousand respectively.

According to the trend equation , the forecasted value of net profit after tax of BPC for coming three years would be Rs 392,046.71, Rs 439,772.71 and Rs 487,498.71 thousand respectively. Similarly, the forecasted values of net profit after tax of HPL for coming three years would be Rs 1228,667.14, Rs 1281,100.14 and Rs 1333,533.14 thousand respectively.

According to the trend equation, the forecasted value of EPS of BPC for coming three years would be Rs 46.73, Rs 52.42 and Rs 58.11 respectively. Similarly, the forecasted values of EPS of HPL for coming three years would be Rs 69.64, Rs 72.61 and Rs 75.58 respectively

4.3.2 Major Findings from the Primary Sources

Out of 25, 21 respondents agreed that ratio analysis was used to measure the performance of their company and since, calculated value of χ^2 is less than tabulated value of χ^2 , H_0 is accepted which means that ratio analysis is used to measure performance in the selected companies.

Out of 25, again 21 respondents agreed that ROE did show the performance of their company and since, calculated value of χ^2 is less than tabulated value of χ^2 , H_0 is accepted which means that ROE shows the performance of the selected companies.

Out of 25, 16 respondents agreed that total sales are used in the proper way to maximize the profit in these companies and since, calculated value of χ^2 is less than tabulated value of χ^2 , H_0 is accepted which means that total sales are used in the proper way to maximize the profit in selected companies.

Out of 25, 16 respondents agreed that the level of return presently obtained from these companies were higher than the expectation of investors and since, calculated value of χ^2 is less than tabulated value of χ^2 , H_0 is accepted which means that the level of return presently obtained from these companies is higher than the expectation of investors.

Out of 25, 23 respondents agreed that operating expenses affected the performance of These companies and since, calculated value of χ^2 is less than tabulated value of χ^2 , H_0 is accepted which means that operating expenses affected the performance of these companies.

Out of 25, 14 respondents agreed that the private sectors performance is better than public sectors and since, calculated value of χ^2 is less than tabulated value of χ^2 , H_0 is accepted which means that the private sectors performance is better than public sectors.

CHAPTER –V

SUMMARY, CONCLUSION & RECOMMENDATIONS

This chapter shows the final report of the study; this chapter is divided into three subheads. First subhead deals with the summary of the study in which result of calculations that is found in previous chapter is presented in short manner. The second subhead is related with the conclusion of the study in which overall decisions made under the study are presented. The third subhead of this remedies or recommendations of the study.

5.1. Summary

Power projects of Nepal's gushing, mountain rivers could meet the energy needs of this Himalayan country and its giant southern neighbour, India .But the foaming waters are yet to be even partly harnessed, because of a shortage of funds and opposition to big multi-million dollar hydroelectric projects from a strong, environmental lobby.

In august 1995, the Arun III project, which dam planners claimed would cover the country's power needs well into the next century, had to be shelved when the world Bank pulled out from the dollar 1 billion scheme for environmental reasons. A surge in energy demand was already creating long power shortage in the capital city, Kathmandu. The government, left with little choice but to explore alternative power projects to meet the demand, gave the go-ahead to a number of projects that were in scale but easier to finance and build.

There has been a gradual change in local and global energy markets providing ample space for both the private and public sectors. It is now increasing evident that the participation of private-public enterprises in the power sectors can lead to better mobilization of resources to meet the ever-increasing domestic and regional power demand. The establishment of a few small and medium sized hydropower plants within the last decade has laid the foundation for private-public sectors participation in Nepal.

The continuing interest shown by both the domestic and foreign private sectors investors is encouraging for Nepal's power sectors although the current interest of the private sector is

limited to small plants of capabilities less than 10 MW only, probably because of the much higher investment needs of larger projects. The increasing demand of electricity can however be met only through a combination of small and medium- sized projects. It is therefore pertinent for NEA to take up several medium sized schemes for implementation in the public sector with donor assistance.

Although the demand for power is rising every year, generation have not been implemented in tandem. The delays experienced in middle Marsyandi, the only public sectors project presently under operation, is an example of the uncertainties faced even after a project enters the construction phase. Public sector generation projects take considerable preparation time before execution. The process of mobilization of resources for generation and other projects is also very time consuming and uncertain. Decision for taking up such projects should therefore be made well in advance so that power plants come into operation in a timely fashion as per the system requirements. The identification and implementation of projects involving relatively low investments in the key to providing affordable electricity to the people of Nepal.

Butwal Power Company was established in 1996 when total capacity of the power in the country was only 3.45 MW. BPC with assistance from the United Mission to Nepal, developed Tinau Project in 1967 to light up town of Butwal and promote industrial development in the area. BPC not only involved in design and construction work but also owns and operates the 12 MW Jhimruk Hydropower plant and the 5.1 MW Andhikhola Hydropower plant. The company supplies power to the national electricity grid besides lighting up nearly 23,000 local households. BPC is currently the largest public supplier in Nepal.

The Khimti-I Hydropower project is the first private sector power project in Nepal, Based on a Build-Own-Operate-Transfer (BOOT) Structure. The power plant is owned and operated through the company Himel Power Limited (HPL).

Himel Power Limited was established in 2049 B.S (1993) when Butwal Power Company (BPC) together with the Norwegian companies statkraft SF, Alstom Power a.s (Formerly ABB kraft), and GE Energy a.s (Formerly Kvaerner Energy) registered HPL under Nepal's Company Act 2021 B.S.

In addition to the investors, the International Finance Corporation (IFC), the Asian Development Bank (ADB), Eksport Finans a.s. the Norwegian agency for development Cooperation (NORAD) and the Nordic Development Fund (NDF) have contributed to the financing of HPL.

As this study is related to the financial Evaluation of BPC and HPL, a number of financial and statistical tools have been used to meet the prescribed objectives. Ratio analysis being the primary financial tool includes all five categories namely, Liquidity ratio, Activity ratio, Profitability ratio, Leverage ratio and Invisibility ratio. To further analyze the financial data, a number of statistical tools have been used such as arithmetic mean, standard deviation, coefficient of variation, coefficient of correlation, probable error of correlation coefficient and least square trend line.

With respect to ratio analysis five different categories have been used with their sub divisions according to these ratios the following fact has been discovered.

The liquidity ratios of the companies seem to be inconsistent. BPC and HPL both have maintained proper liquidity position. The mean and CV of current ratios of BPC came to be 2.77 and 69.89%, the mean and CV of current ratios of HPL came to be 2.94 and 21.43%. Similarly the mean and CV of quick ratio of BPC came to be 2.41 and 66.39%, the mean and CV of quick ratio of HPL came to be 2.93 and 21.50%.

Except that of DTRs all other activity ratios of BPC present fairly consistent trends for the last four years. Whereas, HPL holds less variation in all activity ratios as compared to BPC, the mean and CV of FATORs of BPC came to be 0.406 and 34.24%. Similarly, the mean and CV of FATORs of HPL came to be 0.281 and 9.25%. Similarly, the mean and CV of TATORs of BPC came to be 0.174 and 32.18%, the mean and CV of TATORs of HPL came to be 0.217 and 7.83%. Similarly, mean and CV of DTRs of BPC came to be 6.611 and 35.55%, the mean and CV of DTRs of HPL came to be 5.28 and 5.09%. Similarly the mean and CV of ACPs of BPC came to be 65 days and 47.17%, the mean and CV of ACPs of HPL came to be 68 days and 12.54%.

Due to loss incurred in F/Y 2003/04, BPC present fluctuating trends of profitability ratios. Unlike BPC, HPL has considerably low OERs and shows rather consistent trends of profitability ratios. But it has lower NPRs than BPC. The mean and CV of NPRs of BPC came to be 54.49% and 63.70%, the mean and CV of NPRs of HPL came to be 47.02% and 19.01%. Similarly the mean and CV of Operating profit ratios of BPC came to be 66% and 23.89%, the mean and CV of operating profit ratio of HPL came to be 87% and 8.69%. Similarly, the mean and CV of OERs of BPC came to be 40.55% and 49.40%, the mean and CV of OERs of HPL came to be 14.18% and 20.80%. Similarly, the mean and CV of ROTA ratio of BPC came to be 11.66% and 54.55%, the mean and CV of ROTA of HPL came to be 15.42% and 13.88%. Similarly, the mean and CV of ROE of BPC came to be 14.88% and 62.10%, the mean and CV of ROE of HPL came to be 24.30% and 17.94%.

While BPC is all equity financed, the leverage ratios HPL reveal decreasing risk of insolvency each year. Except debt to equity in F/Y 2003/04, While the mean and CV of debt to shareholders equity of HPL came to be 1.23 and 39.02%, the mean and CV of debt to total assets ratios of HPL came to be 0.48 and 25%.

The invisibility ratio of both companies present fluctuating trends but though HPL has higher trend of EPS and DPS ratios and DPRs remain lower as compared to BPC. The mean and CV of EPS ratio of BPC came to be Rs 23.97 and 58.61%, the mean and CV of EPS of HPL came to be Rs 57.76 and 21.49%. Similarly, the mean and CV of DPS ratios of BPC came to be Rs 25 and 53.44%, the mean and CV of DPS of HPL came to be 34.86 and 31.41%. Similarly, the mean and CV of DPRs of BPC came to be Rs 88.05 and 52.97%, the mean and CV of DPRs of HPL came to be Rs 60 and 25.58%.

The coefficient of correlation between sales and total assets of BPC shows positive and insignificant relation. Similarly the coefficient of correlation between sales and total assets of HPL show negative but insignificant relation. The coefficient of correlation between these two variables of BPC and HPL came 0.221 and -0.079 respectively. Similarly, the probable errors of BPC and GPL came 0.242 and 0.253 respectively.

The coefficient of correlation between sales and net profit after tax of BPC shows positive relation and significant relation. Similarly, the coefficient of correlation between sales and net profit after tax of HPL shows positive relation but not significant relation. The coefficient of correlation between these two variables of BPC and HPL came 0.970 and 0.629 respectively. Similarly, the probable errors of BPC and HPL came to 0.015 and 0.154 respectively.

The coefficient of correlation between total assets and net profit after tax of BPC shows positive relation and not a significant level. Similarly, the coefficient correlation between total assets and net profit after tax of HPL shows the negative relation but not a significant level. The coefficient of correlation between these two variables of BPC and HPL came to be 0.196 and -0.423 respectively. Similarly, the probable error of BPC and HPL came to be 0.245 and 0.209 respectively.

According to the trend equation , the forecasted value of total sales of BPC for coming three years would be Rs 471,015.3, Rs 513,811.34 and Rs 556,667.38 thousand respectively. Similarly, the forecasted values of total sales of HPL for coming three years would be Rs 2180,907.55, Rs 2186,013.08 and Rs 2191,118.61 thousand respectively.

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Out of 25, 21 respondents agreed that ratio analysis was used to measure the performance of their company and since, calculated value of χ^2 is less than tabulated value of χ^2 , H_0 is accepted which means that ratio analysis is used to measure performance in the selected companies.

Out of 25, again 21 respondents agreed that ROE did show the performance of their company and since, calculated value of χ^2 is less than tabulated value of χ^2 , H_0 is accepted which means that ROE shows the performance of the selected companies.

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5.2. Conclusion

As per the analysis and interpretation of data the following conclusions have been derived.

- Both companies have maintained proper liquidity position. Which means both companies average ratios are above standard level, but incapability of BPC to meet current liabilities as compared HPL.
- The fixed assets turnover ratios of both companies are satisfactory and somewhat consistent. However, both companies have not been able to utilize its current assets appropriately as the total assets turnover ratio remains vulnerable against that of HPL. Though the debtor's

turnover ratios are almost, equivalent, considering the average collection period. It can conclude that BPC suffers less the problem of outstanding debt collection.

- Though BPC has considerably high operating expenses ratio and inconsistent trend in its net profit ratios. The overall performance with respect to profitability is not far behind to HPL. However, considering the return on shareholders' equity and return on total assets, it is obvious that one would preferably invest in HPL rather in BPC.
- BPC is all equity financed and thus the risk of insolvency is minimized for this company. The risk of insolvency of HPL has been decreasing each year with the decrease in its leverage ratios.
- Though HPL has a two times higher EPS with compared to that of BPC, its tight custom of dividend payout ratio conceals the real charisma. In other hand, BPC being much liberal in distributing the earning in form of dividends. One might confuse to pick the preferable investment between BPC and HPL.
- The coefficient of correlation between sales and total assets of BPC show positive and insignificant relation. Similarly, the coefficient of correlation between sales and total assets of HPL shows negative but not significant relation. It also reveals that it is likely that decreased in total assets is associated to increase in sales of HPL more than in sales of BPC.
- The coefficient of correlation between total sales and net profit after tax of BPC and HPL show positive relation and significant relation in BPC but not significant relation in HPL. It also reveals that BPC is slightly more successful than HPL to be able to yield more uniform profit and its sales.
- The coefficient of correlation between total assets and net profit after tax of BPC show positive and insignificant relation. Similarly the coefficient of correlation between total sales and net profit after tax of HPL show negative but insignificant relation. It reveals that the net profit after tax of HPL is more reactive than of BPC to fluctuations in total assets.
- The growth trend analysis of total sales, net profit after tax and earnings per share of BPC demonstrate a higher increasing trend than that of HPL.
- From the primary data analysis, it can be concluded that ratio analysis is used to analyze the performance, ROE does show the performance of these companies, total sales are used in the proper way to maximize the profit, present return of these companies is higher than the

expectation of investors, operating expenses affected the performance of these companies and private sectors performance is better than public sectors.

**Table No. 5.1
SWOT analysis**

Companies	BPC	HPL
Strengths	<ul style="list-style-type: none"> • Availability of funds • No Loans and borrowings • Diversified sources of income 	<ul style="list-style-type: none"> • Low operating expenses • Tax subsidy and increasing profits
Weaknesses	<ul style="list-style-type: none"> • Inefficient use of resources • High operating expenses • Lack of strategies to realize financial plans 	<ul style="list-style-type: none"> • High level of fixed costs • Lack of strategies to realize financial plans
Opportunities	<ul style="list-style-type: none"> • Plenty of market availability • No competition 	<ul style="list-style-type: none"> • Plenty of market availability • No competition • Sales electricity to NEA in US dollar
Threats	<ul style="list-style-type: none"> • High research cost • Tightening power purchase agreement by NEA 	<ul style="list-style-type: none"> • High research cost • Different problems faced of local Communities

5.3. Recommendations

Based on conclusion, some recommendations are presented below:

- The liquidity of both companies is satisfactory but to BPC has to cut off current liabilities to maintain a proper liquidity position.
- Fixed assets turnover ratio of BPC is satisfactory but total assets need to be managed more effectively. Similarly, both fixed assets and total assets need to be managed more effectively in HPL. BPC needs to find better ways to control and improve its receivable.
- The profitability position of both companies is satisfactory. However HPL can do much to increase the net profit margin. And BPC can do much to increase the ROE and ROTA by better utilization of its assets. There is also a need for effective production management to control operating cost of BPC.
- Despite the availability of lucrative investment opportunities, shareholders need to be satisfied with dividends. HPL should adopt a more liberal dividend payout policy, as the earning per share is healthy to support such policy.
- The projected sales values can be met by setting production and sales plans and formulating proper policies and strategies. The private- public sectors should implement new techniques

of management such as participative management, management by objective and total quality management.

- The hydropower sectors should maintain research budgets to study new hydroelectric projects across the country. These should be proper cost control on maintenance activities.
- The hydropower sectors should introduce SWOT analysis to improve their capability of dealing with external forces and managing internal issues of strengths and weaknesses.
- The hydropower sectors should maintain a separate human resource department to make sure that there is an effective system of handling grievance of employees and conduction of management development and training programs.
- As per hydropower policy, 1992 the government of Nepal shall provide an exemption of income tax to the projects of private sector generating and distributing electricity from the hydroelectric project up to the capacity of 1,000 KW. Likewise, the government shall provide income tax exemption facility to the hydroelectric projects constructed under to investment of private sector producing more than 1,000 KW for a period of fifteen years starting from the date of its commercial production. So, the hydropower companies are suggested to invest in the new hydropower projects utilizing such benefits to meet the present crisis of electricity in the country.
- The hydropower sectors should follow the practices of setting financial goals for future activities and should develop major programs to accomplish them.
- Government should formulate plans and policies to attract private as well as public investors for growth of hydropower companies creating investment friendly environment and focusing on their security in the hydropower development.

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Appendix A

History of Electricity Production of Nepal

The history of electricity Production in Nepal started in 1911 A.D by the ambitious rana Prime Minister Chandra Smasher to light the Singh Durbar as a copy of European Style, Development Pharping hydropower station with a running capacity of 500 KW. The hydro electricity at the time was called Chandra Jyoti and it was used in the Kathmandu valley for only the aristocrats.

The first pioneering project of Pharping was established and built in 1911 AD whose capacity was 500 KW and second Sundarijal power project was established in 1935 AD with the capacity of 1350 KW. Until the time several industries were established in Tarai of Nepal. The Morang Hydropower Company was established in 1940 AD and then Birgung Electric supply Co. And Dharan Electric power Co. Were established (Khatiwada, 2007:7).

Nepal Electricity Authority (NEA)

Later on Bhadra 1, 2042 BS Nepal Electricity Authority (NEA) was established under Nepal Electricity Authority act 2041 an enterprise fully under taken by the government. It is the leading organization in power generation, transmission and distribution.

The primary objective of NEA is to generate transmit and distribute adequate, reliable and affordable power by planning, constructing operating and maintaining all generation, transmission and distribution facilities in Nepal's efficiency and reliable service.

In addition to achieving above objective, NEA, s Major responsibilities are:

- To recommend to Nepal Government, long term and short-term plans and policies in the power sector;
- To recommended, determine and realize tariff structure for electricity consumption with prior approval of Nepal Government;
- To arrange for training and study so as to produce skilled manpower in generation, transmission, distribution and other Sectors.

(Source: www.nea.org.np.)

The Development of electricity in Nepal has been mainly based on the development of hydropower. The development of infrastructure has been essentially carried out by the government, but the contributed a lot and set qualitatively important footing in this sector.

Private-Public Participation of Hydropower Development in Nepal

After 1990 the government initiated the process of economic liberalization and declared its sincere belief in private Ltd. Growth limiting the role of the government only to the creation of conducive atmosphere for market regulated economic decision making. Hydropower development was the most important sector opened for private public participation which until then was under the exclusive domain of NEA. The Private –Public Partanership involves both Local and international Impact.

The Following guiding policies have been promulgated for encouraging private-public sector participation especially in hydropower sectors.

- Hydro power development Policy 1992
- Water resource act 1992
- Electricity act 1992
- Electricity regulation 1993
- Water resource regulation 1993

The existing hydropower Companies/ Plants Operated by private public Sectors are listed below:

1. Butwal Power Company owns 5,100 KW Andhikhola hydropower plant and 12,000 KW Jhimruk Power plant.
2. Himal power limited owns 60,000 KW khimtikhola power plant.
3. Bhotekoshi Power Company owns 36,000 KW, Bhotekoshi power plant.
4. Chilime Power Company owns 20,000 KW, Chilime power plant.
5. National hydropower Company Owns 7,500 KW, Indrawati (iii).
6. Khudi Hydropower Company owns 3,450 KW, Khudi hydropower plant.
7. Arun Valley hydropower Company (AVHP) owns 3,000 KW, pilluwa khola hydropower plant.
8. Sanima hydropower owns 2,500KW, sunkoshi Small hydropower plant.
9. Thoppakhola hydropower owns 1,650 KW, Thoppakhola power plant.
10. APCO Owns 1,500 KW, Chakukhola power plant.
11. Unique Hydel owns 980 KW, Baramchi hydropower plant.

12. Khoranga hydropower owns 995 KW, Phemekhola plant.
13. Gautam Buddha hydropower company owns 750 KW, Sisnekhola plant
14. Rairang hydropower development (RHPD) owns 500 KW, Rairang hydropower plant.
15. Kathmandu small hydropower owns 232 KW, Salinadhi plant.
16. Sange bidyut Company owns 183 KW, Sangekhola power plant.

Total installed capacity of private public sector plants is 156,340 KW in Nepal and 6 private plants are under constructions which are:

1. Mardikhola (Gandaki HP)	-3,100 KW
2. Lower Indrawati	-4500 KW
3. Ridikhola (Ridhikhola)	- 2400 KW
4. Patikhola (Unified HP)	- 996 KW
5. Upper Hadikhola (CPDS)	- 991 KW
6. Seti II (Task HP)	- 979 KW
Total	12,996 KW

More than 14 plants of total capacity of 15, 15,079 KW are planned and proposed from private Sector.

Source: Annual Report of NEA (Fiscal Year 2007/08)

Introduction of Sample Companies

Butwal Power Company (BPC) Limited

Butwal Power Company was established in 1966 when the total capacity of the country was only 3.45 MW. BPC with assistance from the united mission to Nepal. Developed Tinau project in 1967 to light up the town of Butwal and to promote industrial development in the area.

Butwal Power Company (BPC) limited is a leading hydropower company in hydropower development of Nepal. Butwal Power Company limited becomes a public company since 1993. After the privatisation of the company in 2003, the principal shareholders are Sangri-la energy limited, Interkraft Norway and Ministry of water resource Nepal It is one of the pioneering hydropower developers in Nepal from private sector. The company owns and operates the 12 MW Jhimruk hydropower plant and the 5.1 MW Andikhola hydropower plant. Besides supplying power to the national electricity grid, the company has electrified more than 20,000 households through these power plants under its rural electrification program. It owns

14.9 percent of the shares in khimti hydropower plant (60 MW) and 48.6 percent of the shareholders in Nepal hydro and Electric Pvt. Ltd.

During the project development of Andikhola and Jhimruk, the Butwal power company has participated in the establishment of numerous organizations, including Himal hydro and general construction Ltd. In 1978, Nepal Hydro and Electric Pvt. Ltd. in 1982 and Hydro lab Pvt. Ltd. in 1999. It established an engineering consulting wing BPC Hydro consult with in BPC in 1986 to provide service in hydropower, water, irrigation and environment sector.

BPC has the vision to provide quality and Competitive Service to its Customers. Similarly the mission of the company is to supply electricity within its distribution areas in Nepal and expand its distribution to feasible areas. It will plan, build, acquire, own and operate electric power plans as well as purchase electricity to meet its electricity needs; make strategic investments to support its interests; supply affordable electricity; and render professional services in its areas of expertise.

Himal Power Limited (HPL)

The khimti I hydropower project is the first private sector power project in Nepal. Based on a Build-Own-Operate-Transfer (BOOT) structure. The power plant is owned and operates through the Company; Himal Power limited (HPL).

Himal Power limited was established in 1992 when Butwal Power Company together with Norwegian Companies Statkraft SF, ABB Energy a.s (now ABB Kraft), Kvaerner Energy a.s. (now GE Hydro) registered a company under the company Act 2021 of Nepal.

Himal power limited has been granted a fifty Year licence by Government of Nepal. As part of the power purchase agreement (PPA- valid for 20 Years), NEA will receive for free a 50 percent Share in the plant after the end of the PPA.

The Khimti I hydropower plant was constructed during the period 1996-2000 by a consortium of statkraft anlegg AS and Himal Hydro. The electro-mechanical works were done by a consortium of ABB Energy AS and Kvaerner Energy a.s. The Khimti I Hydropower Project began to the Commercial Production on July 11th 2000.

HPL, s Primary Task is to attend, and further develop, assets and interests in Nepal, especially with regard to production, maintenance and the administration of properties owned by the Company. This shall be done in both a short and long term perspective.

The strict environment criteria as set out by the lenders (IFC, Norfund, NDF) make it crucial for HPL to set a high Priority on environmental issues as this pertains to the production and operation of the Khimti I hydropower Plant.

As HPL,s Shareholders in Norway have strictly defined frameworks for all their activities abroad, HPL will strive to make such frameworks operational in a Nepalese foreign context. HPL will accordingly be careful not to come into conflict with the values and realization of goals as put forward by our institutional stakeholders.

In addition to the investors, the international finance corporation (IFC). The Asian Development Bank (ADB), Eksportfinans a.s. the Norwegian agency for development cooperation (NORAD) and the Nordic Development Fund (NDF) have contributed to the financing of HPL.

Appendix B

Computation of Correlation of Coefficient and Probable Errors

I. Correlation between Total Sales and Total Assets of BPC

(In Thousand NRs)

Year	Sales(X)	Total Assets (Y)	X ²	Y ²	X×Y
2002/03	236,278	1,622,165	55,827,293,284	2,631,419,287,225	383,281,901,870
2003/04	96,364	1,825,464	9,286,020,496	3,332,318,815,296	175,909,012,896
2004/05	283,167	1,579,195	80,183,549,889	2,493,856,848,025	447,175,910,565
2005/06	323,134	1,439,238	104,441,581,956	2,071,406,020,644	465,066,731,892
2006/07	358,419	1,744,447	128,464,179,561	3,043,095,335,809	625,242,949,293
2007/08	379,769	1,882,271	144,224,493,361	3,542,944,117,441	714,828,175,399
2008/09	421,687	1,986,926	177,819,925,969	3,947,874,929,476	837,860,864,162
Total	∑X = 2098,818	∑Y = 12,079,706	∑X ² = 700,221,044,516	∑Y ² = 21,062,915,353,916	∑ X×Y = 3,649,365,546,077
Correlation(r) = 0.221			Probable Error (PE) = 0.242		

$$r = \frac{N \sum XY - \sum X \sum Y}{\sqrt{N \sum X^2 - (\sum X)^2} \sqrt{N \sum Y^2 - (\sum Y)^2}} = 0.221$$

$$P.E = 0.6745 \times \frac{1-r^2}{\sqrt{N}} = 0.242$$

II. Correlation between Total Sales and Total Assets of HPL

(In Thousand NRs)

Year	Sales(X)	Total Assets (Y)	X ²	Y ²	X×Y
2002/03	2,171,039	9,679,770	4,713,410,339,521	93,697,947,252,900	21,015,158,181,030
2003/04	2,193,850	10,999,525	4,812,977,822,500	120,989,550,225,625	24,131,307,921,250
2004/05	2,092,032	10,110,846	4,376,597,889,024	102,229,206,835,716	21,152,213,379,072
2005/06	2,104,124	10,098,600	4,427,337,807,376	101,981,721,960,000	21,248,706,626,400
2006/07	2,121,897	9,897,922	4,502,446,878,609	97,968,859,918,084	21,002,370,998,034
2007/08	2,307,461	9,454,424	5,324,376,266,521	89,386,133,171,776	21,815,714,657,464
2008/09	2,132,995	8,728,710	4,549,667,670,025	76,190,378,264,100	18,618,294,786,450
Total	∑X = 15,123,398	∑Y = 68,969,797	∑X ² = 32,706,814,673,576	∑Y ² = 682,443,797,628,201	∑ X×Y = 148,983,766,549,700
Correlation(r) = -0.079			Probable Error (PE) = 0.253		

$$r = \frac{N \sum XY - \sum X \sum Y}{\sqrt{N \sum X^2 - (\sum X)^2} \sqrt{N \sum Y^2 - (\sum Y)^2}} = -0.079$$

$$P.E = 0.6745 \times \frac{1-r^2}{\sqrt{N}} = 0.253$$

III. Correlation between Total Sales and Net profit after tax of BPC

(In Million NRs)

Year	Sales(X)	Net profit after tax (Y)	X ²	Y ²	X×Y
2002/03	236	125	55,696	15,625	29500
2003/04	96	(45)	9,216	2,025	(4320)
2004/05	283	235	80,089	55,225	66505
2005/06	323	198	104,329	39,204	63954
2006/07	358	288	128,164	82,944	103104
2007/08	380	253	144,400	64,009	96140
2008/09	422	354	178,084	125,316	149388
Total	∑X = 2098	∑Y = 1408	∑X ² = 699,978	∑Y ² = 383,348	∑ X×Y = 504,271
Correlation(r) = 0.970			Probable Error (PE) = 0.015		

$$r = \frac{N \sum XY - \sum X \sum Y}{\sqrt{N \sum X^2 - (\sum X)^2} \sqrt{N \sum Y^2 - (\sum Y)^2}} = 0.970$$

$$P.E = 0.6745 \times \frac{1-r^2}{\sqrt{N}} = 0.015$$

IV. Correlation between Total Sales and Net profit after tax HPL

(In Million NRs)

Year	Sales(X)	Net profit after tax (Y)	X ²	Y ²	X×Y
2002/03	2,171	960	4,713,241	921,600	2,084,160
2003/04	2,194	774	4,813,636	599,076	1,698,156
2004/05	2,092	893	4,376,464	797,449	1,868,156
2005/06	2,104	1,163	4,426,816	1,352,569	2,446,952
2006/07	2,122	879	4,502,884	772,641	1,865,238
2007/08	2,307	1,483	5,322,249	299,289	3,421,281
2008/09	2,133	982	4,549,689	964,324	2,094,606
Total	∑X = 15,123	∑Y = 7,134	∑X ² = 32,704,979	∑Y ² = 7,606,948	∑ X×Y = 15,478,549
Correlation(r) = 0.629			Probable Error (PE) = 0.154		

$$r = \frac{N \sum XY - \sum X \sum Y}{\sqrt{N \sum X^2 - (\sum X)^2} \sqrt{N \sum Y^2 - (\sum Y)^2}} = 0.629$$

$$P.E = 0.6745 \times \frac{1-r^2}{\sqrt{N}} = 0.154$$

V. Correlation between Total assets and Net profit after tax BPC

(In Million NRs)

Year	Total assets(X)	Net profit after tax (Y)	X ²	Y ²	X×Y
2002/03	1,622	125	2,630,884	15,625	202,750
2003/04	1,825	-45	3,330,625	2025	(82,125)
2004/05	1,579	235	2,493,241	55,225	371,065
2005/06	1,439	198	2,070,721	39,204	284,922
2006/07	1,744	288	3,041,536	82,944	502,272
2007/08	1,882	253	3,541,924	64,009	476,146
2008/09	1,987	354	3,948,169	125,316	703,398
Total	∑X = 12,078	∑Y = 1,408	∑X ² = 21,057,100	∑Y ² = 384,348	∑ X×Y = 2,458,428
Correlation(r) = 0.196			Probable Error (PE) = 0.245		

$$r = \frac{N \sum XY - \sum X \sum Y}{\sqrt{N \sum X^2 - (\sum X)^2} \sqrt{N \sum Y^2 - (\sum Y)^2}} = 0.196$$

$$P.E = 0.6745 \times \frac{1-r^2}{\sqrt{N}} = 0.245$$

VI. Correlation between Total assets and Net profit after tax HPL

(In Million NRs)

Year	Total assets(X)	Net profit after tax (Y)	X ²	Y ²	X×Y
2002/03	9,680	960	93,702,400	921,600	9,292,800
2003/04	10,999	774	120,978,001	599,076	8,513,226
2004/05	10,111	893	102,232,321	797,449	9,029,123
2005/06	10,099	1,163	101,989,801	1,352,569	11,745,137
2006/07	9,898	879	97,970,404	772,641	8,700,342
2007/08	9,454	1,483	89,378,116	2,199,289	14,020,282
2008/09	8,729	982	76,195,441	964,324	8,571,878
Total	∑X = 68,970	∑Y = 7,134	∑X ² = 682,446,484	∑Y ² = 7,606,948	∑ X×Y = 69,872,788
Correlation(r) = -0.423			Probable Error (PE) = 0.209		

$$r = \frac{N \sum XY - \sum X \sum Y}{\sqrt{N \sum X^2 - (\sum X)^2} \sqrt{N \sum Y^2 - (\sum Y)^2}} = -0.423$$

$$P.E = 0.6745 \times \frac{1-r^2}{\sqrt{N}} = 0.209$$

Appendix C

Computation of Trend Values

I. Least Square Trend Analysis of Total Sales Growth Of BPC

(In Thousand NRs)

Fiscal Year	Time	X =Time-4	Sales (Y)	X ²	X×Y	Trend Value (Y= α+bx)
2002/03	1	-3	236,278	9	-708,834	171,443.02
2003/04	2	-2	96,364	4	-192,728	214,239.06
2004/05	3	-1	283,167	1	-283,167	257,035.10
2005/06	4	0	323,134	0	0	299,831.14
2006/07	5	1	358,419	1	358,419	342,627.18
2007/08	6	2	379,769	4	759,538	385,423.21
2008/09	7	3	421,687	9	1,265,061	428,219.26
		∑X = 0	∑Y = 2098,818	∑X ² = 28	∑XY = 1,198,289	
α = 299831.14				b = 42796.04		
2009/10	8	4				471,015.30
2010/11	9	5				513,811.34
2011/12	10	6				556,607.38

Mathematically $Y = \alpha + bX$

Where, Y= Value of the dependent Variable

α = Y- intercept

b = slope of the trend line

X = Value of the independent Variable

Normal equations fitting above equation are:

$$\sum Y = N\alpha + b\sum X$$

$$\sum XY = \alpha\sum X + b\sum X^2$$

Since, $\sum X = 0$, $a = \frac{\sum Y}{N}$, and $b = \frac{\sum XY}{\sum X^2}$

II. Least Square Trend Analysis of Total Sales Growth Of HPL

(In Thousand NRs)

Fiscal Year	Time	X =Time-4	Sales (Y)	X ²	X×Y	Trend Value (Y= α+bx)
2002/03	1	-3	2,171,039	9	-6,513,117	2,145,168.84
2003/04	2	-2	2,193,850	4	-4,387,700	2,150,374.37
2004/05	3	-1	2,092,032	1	-2,092,032	2,155,379.9
2005/06	4	0	2,104,124	0	0	2,160,485.43
2006/07	5	1	2,121,897	1	2,121,897	2,165,590.96
2007/08	6	2	2,307,461	4	4,614,922	2,170,696.49
2008/09	7	3	2,132,995	9	6,398,985	2,175,802.02
		∑X = 0	∑Y = 15,523,398	∑X ² = 28	∑X×Y = 142,955	
α = 2,160,485.43				b = 5,105.53		
2009/10	8	4				2,180,907.55
2010/11	9	5				2,186,013.08
2011/12	10	6				2,191,118.61

Mathematically $Y = a + bX$

Where, Y= Value of the dependent Variable

α= Y- intercept

b = slope of the trend line

X = Value of the independent Variable

Normal equations fitting above equation are:

$$\sum Y = N\alpha + b\sum X$$

$$\sum XY = \alpha\sum X + b\sum X^2$$

Since, $\sum X = 0$, $a = \frac{\sum Y}{N}$, and $b = \frac{\sum XY}{\sum X^2}$

III. Least Square Trend Analysis of Net Profit After Tax Growth Of BPC

(In Thousand NRs)

Fiscal Year	Time	X =Time-4	Net Profit After Tax (Y)	X ²	X×Y	Trend Value (Y= α+bx)
2002/03	1	-3	124,626	9	-373,878	57,964.71
2003/04	2	-2	-44,944	4	89,888	105,690.71
2004/05	3	-1	235,418	1	-235,418	153,416.71
2005/06	4	0	197,761	0	0	201,142.71
2006/07	5	1	288,419	1	288,419	248,868.71
2007/08	6	2	252,840	4	505,680	296,594.71
2008/09	7	3	353,879	9	1061,637	344,320.71
		∑X = 0	∑Y = 1407,999	∑X ² = 28	∑X×Y = 1,336,328	
a = 201,142.71				b = 47,726		
2009/10	8	4				392,046.71
2010/11	9	5				439,772.71
2011/12	10	6				487,498.71

Mathematically $Y = \alpha + bX$

Where, Y= Value of the dependent Variable

α = Y- intercept

b = slope of the trend line

X = Value of the independent Variable

Normal equations fitting above equation are:

$$\sum Y = N\alpha + b\sum X$$

$$\sum XY = \alpha\sum X + b\sum X^2$$

Since, $\sum X = 0$, $a = \frac{\sum Y}{N}$, and $b = \frac{\sum XY}{\sum X^2}$

IV. Least Square Trend Analysis of Net Profit After Tax Growth Of HPL

(In Thousand NRs)

Fiscal Year	Time	X =Time-4	Net Profit After Tax (Y)	X ²	X×Y	Trend Value (Y= α+bx)
2002/03	1	-3	960,034	9	-2,880,102	861,636.14
2003/04	2	-2	773,597	4	-1,547,194	914,069.14
2004/05	3	-1	893,285	1	-893,285	966,502.14
2005/06	4	0	1,162,551	0	0	1,018,935.14
2006/07	5	1	878,986	1	878,980	1,071,368.14
2007/08	6	2	1,482,560	4	2,965,120	1,123,801.14
2008/09	7	3	981,533	9	2,944,599	1,176,234.14
		∑X = 0	∑Y = 7,132,546	∑X ² = 28	∑X×Y = 1,468,124	
a = 1,018,935.14				b = 52,433		
2009/10	8	4				1,228,667.14
2010/11	9	5				1,281,100.14
2011/12	10	6				1,333,533.14

Mathematically $Y = \alpha + bX$

Where, Y= Value of the dependent Variable

α = Y- intercept

b = slope of the trend line

X = Value of the independent Variable

Normal equations fitting above equation are:

$$\sum Y = N\alpha + b\sum X$$

$$\sum XY = \alpha\sum X + b\sum X^2$$

Since, $\sum X = 0$, $a = \frac{\sum Y}{N}$, and $b = \frac{\sum XY}{\sum X^2}$

V. Least Square Trend Analysis of Earning Per Share Growth Of BPC

(In Thousand NRs)

Fiscal Year	Time	X =Time-4	Earnings Per Share (Y)	X ²	X×Y	Trend Value (Y= α+bx)
2002/03	1	-3	14.85	9	-44.55	6.9
2003/04	2	-2	(5.36)	4	10.72	12.59
2004/05	3	-1	28.06	1	-28.06	18.28
2005/06	4	0	23.57	0	0	23.97
2006/07	5	1	34.37	1	34.37	29.66
2007/08	6	2	30.13	4	60.26	35.35
2008/09	7	3	42.18	9	126.54	41.04
		∑X = 0	∑Y = 167.8	∑X ² = 28	∑X×Y = 159.28	
a = 23.97				b = 5.69		
2009/10	8	4				46.73
2010/11	9	5				52.42
2011/12	10	6				58.11

Mathematically $Y = \alpha + bX$

Where, Y= Value of the dependent Variable

α = Y- intercept

b = slope of the trend line

X = Value of the independent Variable

Normal equations fitting above equation are:

$$\sum Y = N\alpha + b\sum X$$

$$\sum XY = \alpha\sum X + b\sum X^2$$

Since, $\sum X = 0$, $a = \frac{\sum Y}{N}$, and $b = \frac{\sum XY}{\sum X^2}$

VI. Least Square Trend Analysis of Earning Per Share Growth Of HPL

(In Thousand NRs)

Fiscal Year	Time	X =Time-4	Earnings Per Share (Y)	X ²	X×Y	Trend Value (Y= α+bx)
2002/03	1	-3	54.42	9	-163.26	48.85
2003/04	2	-2	43.85	4	-87.7	51.82
2004/05	3	-1	50.64	1	-50.64	54.79
2005/06	4	0	65.90	0	0	57.76
2006/07	5	1	49.82	1	49.82	60.73
2007/08	6	2	84.04	4	168.08	63.7
2008/09	7	3	55.64	9	166.92	66.67
		∑X = 0	∑Y = 404.31	∑X ² = 28	∑X×Y = 83.22	
a = 57.76				b = 2.97		
2009/10	8	4				69.64
2010/11	9	5				72.61
2011/12	10	6				75.58

Mathematically $Y = \alpha + bX$

Where, Y= Value of the dependent Variable

α = Y- intercept

b = slope of the trend line

X = Value of the independent Variable

Normal equations fitting above equation are:

$$\sum Y = N\alpha + b\sum X$$

$$\sum XY = \alpha\sum X + b\sum X^2$$

Since, $\sum X = 0$, $a = \frac{\sum Y}{N}$, and $b = \frac{\sum XY}{\sum X^2}$

Appendix D

I. Seven Year Summary of Financial Statements of Butwal Power Company Limited (BPC)

Balance Sheet

In Thousand NRs

Particulars	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09
ASSETS & PROPERTY							
Fixed Assets	756,006	763,484	727,340	714,016	743,605	743,893	725,742
Capital Work in Progress	13,907	890	5,277	318	18,576	1,111	7,247
Long Term Investment	544,426	537,648	356,906	381,505	434,481	465,705	477,858
Current Assets	286,201	520,987	481,833	335,582	543,416	670,674	776,079
Stock	50,137	43,985	41,766	48,038	57,623	58,896	74,646
Current Work in Progress	7,829	6,898	8,163	9,477	19,394	23,258	29,944
Debtors and Receivables	41,190	36,224	31,309	42,921	35,512	58,918	88,407
Cash and Bank Balance	119,186	120,645	324,349	172,240	364,373	457,035	412,635
Advance and Deposit	67,859	313,235	76,246	62,906	66,514	72,567	170,447
Deferred Revenue Expenditure	12,625	2,455	7,839	7,817	4,369	888	4,765
TOTAL	1622,165	1825,464	1579,195	1439,238	1744,447	1882,271	1991,691
CAPITAL & EQUITY							
Equity	839,058	839,058	839,058	839,058	839,058	839,058	839,058
Reserve and Surplus	676,017	698,587	506,726	541,470	461,510	455,805	556,762
Funds	53,079	7,653	-	-	-	-	-
Current Liabilities	54,012	280,166	207,655	54,172	433,619	562,584	595,871
Bank Overdraft	-	-	-	-	-	89,947	183,956
Creditor & Payables	45,893	32,983	207,271	52,318	432,012	441,779	356,934
Advance & Deposit	544	247,183	384	1,854	1,607	30,858	29,433
Provisions	7,574	-	25,756	4,538	10,260	24,824	-
TOTAL	1622,165	1825,464	1579,195	1439,238	1744,447	1882,271	1991,691

Source: Annual Report of BPC (F/Y 2002/03 -2008/09)

Profit and Loss Account

In Thousand NRs

Particulars	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09
INCOME							
Electricity Sales to NEA	213311	67954	249530	286795	318483	334166	372521
Electricity Sales to Customers	22967	28410	33637	36339	39936	45603	49166
Consultancy Service	16441	7768	8212	8831	11498	9535	18894
Total Operating Income	256445	107979	294858	335494	375270	392938	446732
Income from Other Sources	25076	165	236753	60218	116909	96403	196463
TOTAL INCOME	281521	108144	531611	395712	492179	489341	643195
EXPENDITURE							
Power Plant Expenses	39836	43702	47369	59600	57715	74565	82514
Distribution Expenses	29673	27170	27170	30296	31054	33303	48428
Consultancy Service	19794	14984	10946	14903	13692	8774	16743
Administrative Expenses	15249	25066	38371	41201	34990	37645	53508
Loss on Fixed Assets	-	73	376	-	6090	-	-
KHP Back End Payment	-	-	100075	-	-	-	-
Provision of loss of Investment	-	-	-	-	-	9479	6869
Depreciation	44770	42093	46131	47413	49959	51924	55103
Staff Bonus	3297	-	8933	4046	6791	5926	9504
TOTAL EXPENDITURE	152619	153088	279371	197459	200291	226882	279915
Net PROFIT Before Tax	128902	(44944)	252240	198253	291888	262459	363280
Income Tax Provision	4276	-	16822	492	3469	9619	9401
Net Profit After Tax	124626	(44944)	235418	197761	288419	252840	353879
Last Year Balance	423419	386166	381552	281346	185484	222131	222805
Income Tax Adjustment	(77973)	40330	-	47	(55)	(531)	(18570)
Dividend	(83906)	-	(335624)	(293670)	(251717)	(251635)	(251717)
Net Profit Transfer to B/S	386166	381552	281346	185484	222131	222805	306397

Source: Annual Report of BPC (F/Y 2002/03 -2008/09)

II. Seven Year Summary of Financial Statements of Himel Power Limited (HPL)

Balance Sheet

In Thousand NRs

Particulars	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09
ASSETS & PROPERTY							
Fixed Assets	7548112	8570394	8213644	7908173	7551062	7203678	7002613
Capital Work in Progress	27139	11507	2466	8124	19877	20599	22866
Current Assets	2104310	2417624	1894736	2182303	2326983	2230147	1703231
Account Receivable/ Debtors	204310	396465	416028	393675	428146	417834	430109
Inventories	486	-	-	-	-	14993	19894
Cash and Bank Balance	1718131	1873603	1341952	1636866	1737778	1581610	1100228
Prepaid Advances, Loan & Deposit	181592	147556	136756	151762	161062	200174	132094
Deferred Revenue Expenses	-	-	-	-	-	15536	20907
TOTAL	9679770	10999525	10110846	10098600	9897922	9454424	8728710
CAPITAL & LIABILITIES							
Equity	1764144	1764144	1764144	1764144	1764144	1764144	1764144
Reserve & Surplus	1359745	1719719	2054113	2537862	2750583	3375912	3553339
Secured Loans	5681902	6429352	5807484	4987040	4598322	3432851	2968227
Current Liabilities	873979	1086310	485105	809554	784873	881517	443000
TOTAL	9679770	10999525	10110846	10098600	9897922	9454424	8728710

Source: Annual Report of BPC (F/Y 2002/03 -2008/09)

Profit And Loss Account

In Thousand NRs

Particulars	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09
Revenue From Sale of Electricity	2171039	2193850	2092032	2104124	2121897	2307461	2132995
Other Income	16645	14209	7660	20154	3263	59	16
Interest Income	-	-	-	-	41545	79308	48553
Total Revenue	2187683	2208059	2099692	2124278	2166705	2386827	2181563
Operation & Administrative Expenses	242951	280076	271344	280733	271626	353751	445106
Profit From Operation	1944732	1927983	1828348	1843544	1895079	2033076	1736457
Interest	684539	650364	564897	492603	436257	360879	274064
Depreciation	302012	363403	390697	327661	391492	388112	330872
Foreign Exchange Gain/ Loss	(21446)	106288	(38761)	(163786)	170412	(241856)	131840
Write Off	-	18542	-	790	-	-	-
Deferred Tax	-	-	-	-	-	-	(5755)
(Profit) loss on disposal of Assets	-	-	-	-	6	13125	3872
Provision for Bonus	19593	15789	18230	23726	17938	30256	20031
Profit Before Tax	960034	773597	893285	1162551	878986	1482560	981533
Provision For Income Tax	-	-	-	-	-	-	-
Profit After Tax	960034	773597	893285	1162551	878986	1482560	981533
Balance of Profit as per Last Year	693068	1359744	1719719	2054113	2537862	2750583	3345383
Interim Dividend	-	-	(383014)	(678801)	(155320)	(330480)	(694185)
Proposed Dividend	(293358)	(413623)	(175877)	-	(510945)	(5572800)	(109920)
Balance of Profit Transfer To B/S	1359744	1719719	2054113	2537862	2750583	3345383	3522811

Source: Annual Report of BPC (F/Y 2002/03 -2008/09)

Dear Sir/ Madam

I am conducting a Research in **FINANCIAL PERFORMANCE EVALUATION OF HYDROPOWER COMPANIES IN NEPAL (A Comparison between Butwal Power Company Limited and Himal Power Limited)**. I would appreciate you providing me just few minutes of your busy schedule to answer the questions appearing in the enclosed questionnaire. Each response will be anonymous findings of the research will be fruitful to know more about how performance of BPC/HPL is in now a days. Each of your idea and opinion will be of great importance for present research.

Thank You for your Co-operation and Help.

Sincerely Yours
Prakash Khadka
Nepal Commerce Campus
Tribhuvan University

