CHAPTER-I
INTRODUCTION

1.1 General Background

In terms of scientific development, Nepal ranks low. Its science budget is just 60 million rupees (US $800,000), or 0.08 per cent of total national budget. Yet, despite poverty, poor government and ten years of insurgency, a few initiatives in Nepal's energy sector are showing how thinking small can bring big results.

While Nepal's planned 'mega' dam project have stalled, there 'micro' counterparts have been successful, with some financing local development. Solar power is illuminating remote regions. And since 1992, a small non-governmental organization has improved rural livelihood while reducing greenhouse gas emissions by using cattle dung to create fuel.

For any country, its energy supply is a limiting factor. Energy is expensive, generates pollution, but is absolutely necessary.

Many developing countries face the added conundrum of possessing natural resources that could potentially supply large amount of energy, but lacking the funds, resources and infrastructure to exploit them.

Nepal is perched high up among the Himalayan Mountains. Among the nation's greatest resources are its fast-flowing rivers, which hydropower plants could harness to generate electricity. According to the Nepal Electricity Authority, the country's total hydropower potential is up to 45,000 megawatts, 45 times what is needed to power a US city the size of Seattle.

Gigantic dams could control flood, irrigate fields and generate electricity — not only for Nepal but potentially for India too. But the costs involved are prohibitive and no Nepali

government has yet dared lunch such projects, which would mean flooding valleys and potentially moving populations.

It is 'micro' hydropower plants, built on small rivers that have been most successful. Already, 2,000 of these produce nearly one-sixth of the total electricity produced by hydroelectric plants in Nepal.

Such plant was set up on a small tributary of the Arun River five years ago by Hari Dahal, a former member of parliament, and business partners. Something nagged Dahal's conscience, and he is now working with colleges in his native town Khandbari to set up a trust that will renovate a 250-kilowatt plant destroyed by Maoist rebels five years ago.

The plan is to sell the power to the national grid and pump the profits into higher education in the district. If successful, this model could be replicated all over Nepal.

1.1.1 Investment Potential of Hydropower Business in Nepal

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 45,000MW is considered economically feasible. At presents, the installed capacity of hydro power is about 546 or MW, less than 2 percent of the total economically feasible number. Of this, 144 MW or about 26 percent, is produced by private sector independent power producers (IPPs). 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 IPP 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 (to the northern region). 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 size of the projects for FDI in Nepal right now in terms of generation schemes to 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 sizes 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 decade 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.

1.1.2 Independent Power Producers (IPPs)

An independent Power Producer is privately owned Power Producers (IPPs) from the private sector are now influential players for hydropower generation in Nepal with total installed capacity of 140.4 MW (26.5%). Besides, over a dozen small hydropower projects that are in different stages of progress have been cleared to interconnect with the NEA grid and sell all their generation to NEA.

Independent Power Association, Nepal (IPPAN) was established in the year 2001 with the intention of encouraging the private sector to work in the area of hydropower in Nepal. It is a non-profit, non-government autonomous organization. One of its main purposes is to act as link between the private sector and government organizations involved in developing hydropower in the country so that Nepalese citizens can get the maximum benefit from the development effort.

Besides this, the organization also helps exchange technology, expertise, knowledge financial and management information among the independent power produces in the country.

IPPAN is primarily a membership organization. The General Assembly comprises both institutional and individual members. The General Assembly elects the Board of Directors, which then formulates the plans and policies of the organization.

1.1.3 Power Purchase Agreement (PPA)

A power purchase Agreement, or PPA, is a long-term agreement to buy power from a company that produces electricity. A Power Purchase Agreement is also "behind" almost every power plant. A PPA is a contract involving the generation and sales of electricity-which is normally developed between the owner of a power plan generating the electricity, and the buyer of the electricity. PPA's can be quite lengthy agreements that may exceed 100 pages in length and take several months to even years to finalize (Renewable Energy Technologies, www.powerpurchaseagreemetns.com)

The basic information contained in a Power Purchase Agreement includes the following items:

a) Definitions
b) Purchase and Sale of Contracted Capacity and Energy (such a steam, hot water and /or chilled water in the case of cogeneration and trigeneration plants)

c) Operation of the Power Plant
d) Financing of the Power Plant
e) Guarantees of Performance
f) Penalties
g) Payments
h) Force Majeure
i) Default and Early Termination
j) Miscellaneous
k) T& Cs

Among various documents, mandatory to help resolve the ensuing confusion between power produces and purchasers, the power purchase agreement (PPA) is the heart of any independent power Project (IPP),. It guarantees market for power produces by the IPP and the tariff at which it would be sold to the purchaser. The PPA creates legal obligation on both the parties to perform the previously accepted tasks in a predetermined manner.

1.1.4 Nepal Electricity Authority (NEA)

Introduction

Nepal Electricity Authority (NEA) was created on August 16. 1985 (Bhadra 1, 2042) under the Nepal Electricity Authority Act, 1984., through the merger of the Department of Electricity of Ministry of Water Resources, Nepal Electricity Corporation and related Development Boards.

To remedy the inherent weakness associated with these fragmented electricity organizations with overlapping and duplication of works, merger of these individual organizations became necessary to achieve efficiency and reliable service.

Objectives

The primary 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 power system both interconnected and isolated.

Responsibility

In addition to achieving above primary objective, NEA's major responsibilities are:

- To recommend to Nepal Government, long and short-term plans and policies in the power sector;
- To recommend, 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.

Board of Directors

Management of NEA is entrusted to Board of Directors which is constituted as follows:

The Minister/State Minister of Water Resources or Person appointed by Nepal Government	: Chairman
Secretary, Ministry of Water Resources	: Member
Secretary, Ministry of Finance	: Member
One prominent person from commerce, industry, or financial sector	: Member
One person form consumers group	: Member
Two prominent persons with experience in power sector from Outside government	: Member
Managing Director, NEA	:Member Secretary
Managing Director, NEA	: Member

The Managing Director acts as member secretary as well as chief executive officer.

1.1.5 Nepal Electricity Authority and Power Purchase Agreement

Nepal Electricity Authority (NEA) is a fully government owned pubic utility and as of date the only buyer of power produced by Independent Power Producers (IPPs) in Nepal. So all the IPPs in Nepal need to enter into Power Purchase Agreement (PPA) with NEA.

An application together with detailed feasibility study of the project needs to be submitted to NEA requesting it to buy power from the project to be constructed. The power to be sold to NEA should be calculated on the basis of Q65 i.e. the design discharge should be available sixty five percent time of the year of projects up to 5 MW.

For projects bigger than 5 MW the design discharge is fixed by mutual agreement. A rate of Rs 3.9 (US$0.06) per unit for wet months (mid April to mid December) and Rs 5.52 (US$ 0.085) for dry months (mid December to mid April) is fixed by NEA as the power purchase rate from Independent Power Producers (IPPs) for projects up to 5 MW. There is no price escalation on this rate as of today. There may be one in future. For projects bigger than 5 MW the power rate is not fixed and may vary from one project to another.

1.2 Introduction to Independent Power Producers of Nepal \

1.2.1 Butwal Power Company Limited (BPC)

Butwal Power Company was established in 1966 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 the town of Butwal and to promote industrial development in the area.

BPC is one of pioneering hydropower developers in Nepal form private sector. BPC is one of the shareholders of 60 MW Khimti hydropower plants and the 5.1 MW Andhikhola 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% of the shares in Khimti I Hydropower Plant (60 MW) and 48.6% of the shares in Nepal Hydro and Electric Pvt Ltd.

Butwal Power Company was privatized in 2003. The main shareholders of BPC are Shangri-la Energy Limited, Interkraft Norway, the public and the Ministry of Water Resources of Nepal. The distributions of shares of BPC are: Shangri –La Energy Limited 68.95% , Public 10%,HMG/N 9.09% : Employ 2%: Nepal Electricity Authority 1.06% and Nepal Industrial Corporation 0.06% BPC is a very good example for being a company jointly owned by the public, private, Government and Employees

BPC has the vision to provide quality and competitive services 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 plants as well as purchase electricity to meet its electricity needs: make strange investment to support its interests: supply affordable electricity: and render professional services in its areas of expertise.

1.2.2 Chilime Hydropower Company Limited (CHPCL)

Chilime Hydropower Company Limited (CHPCL) is a subsidiary company of NEA with 51% equity ownership. The Company was established in 1996 with the object of promoting the utilization of resources within the country for the development of hydropower. Chilime Hydropower project with installed capacity of 22.1 MW and located at Rasuwa district was built and commissioned by this Company on August 25, 2003 (2060/5/8 BS). This project is now in fifty year of commercial operation. The project has delivered 528.63 GWh of electricity to NEA since August 2003. In FY 2006/07. The project was successful in delivering 104.5% of the Contract Energy to NEA. NEA has invested NRs. 489.6 million in the project and has received the shares in the FY 2003/04, 2004/05 and 2005/06 respectively. In FY 2006/07, 25% of the equity

shares were distributed to NEA staff. The shareholders received 35% dividend in that year.

CHPCL is now executing three more hydroelectricity project which is at various stages of development. The feasibility study of two projects, Upper Sanjen Hydroelectricity project (11 MW) and Sanjen Hydroelectric project (35 MW) have been completed and application has been submitted for the power purchase agreement with NEA. Both of these Projects are located upstream of the existing Chilime HEP. Local people are very eager to participate in the implementation of these Projects. A letter of Intent for financing tin Upper Sanjen HEP has already been received from Citizen Investment Trust. Construction of these two projects will be started as soon as the construction license is issued by Ministry of Water Resources.

CHPCL has also completed the feasibility study of Middle Bhotekhoshi Hydroelectric Project (80 MW) located in Sindhupalchowk district. Local people of Sindhupalchowk district and other organizations will be participating in the development of this Project. CHPCL is committed to develop more of medium and large scale hydroelectric projects in future with greater participation from various sectors in the country.

1.2.3 Himal power limited(HPL)

The Khimti 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, Himal Power Limited.

Himal Power Limited was established in 2049 BS (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 BS.

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.

1.2.4 Bhotekoshi Power Company Private Limited (BKPC)

The BhoteKoshi Power Company Pvt. Ltd. (BKPC) was incorporated under the Company Act, 2001 of His Majesty's Government of Nepal (HMGN) in July 1996, with the primary objective of generation and distribution of hydroelectric power in Nepal. The detailed objectives of BKPC are develop, construct, own an operate the Upper Bhote Koshi Hydroelectric Project (UBKHEP); sell the generated power to Nepal Electricity Authority (NEA), HMGN or its representatives, both local and foreign; and, build transmission lines to transmit power form UBKHEP to NEA power grid.

The promoters of BKPC are Panda of Nepal- a Panda Energy International, Inc. company, RDC of Nepal- a Harza Engineering International company, Himal International Power Company (HIPC) and International Power Company (HIPC), and International Finance Corporation (IFC).

1.2.5 Arun Valley Hydropower Company Private Limited (AVHPC)

Arun Valley Hydropower Development Company Ltd (AVHPC) was established in April 1997. It is a shareholders company. There are 71 shareholders in the company. The company has constructed a 3.0 MW hydropower project in Piluwa River in Sankhuwasava District, Koshi Zone, and Eastern Development Region of Nepal. The plant is in operation since September 2003. The power purchase rate is approximately $6 cents per kilowatt hour. The company is planning to construct its second project (4.5 MW) in the upstream of the existing Piluwakhola River. Similarly, the company has completed detail feasibility study report for a 2.4 MW Ridhikhola Project in Gulmi district. The company aims to construct storage type of project.

1.2.6 Sanima Hydropower Company Private Limited (SHPL)

Sanima Hydropower (P) Ltd (SHPL :) was established in March 1999 in Kathmandu Nepal with the main objective to promote hydropower sector of Nepal through the private investment as a part of contribution to the overall development of the country. Its major share holders are: a group of the non-resident Nepalese (NRNs) and Sanima Hydro and Engineering (P.) Limited represented mainly by the engineering professionals.

The 2.5 MW Sunkhoshi Small Hydropower Project (SSHP) was the first hydropower project of SHPL built under BOOT (Build, Own, Operate & Transfer) basis. The project is in commercial operation since 24 March 2005. The Engineering Department of SHPL had undertaken the revised feasibility study of the 2.5 MW SSHP, its detailed engineering design, engineering management and construction supervision and had brought the project into successful commissioning.

SHPL has in-house engineering department for the purpose of carrying out the feasibility study of small and medium hydropower projects including detailed engineering design, project management as well as construction supervision of the Projects. It also looks for the operation and maintenance issues of the power plant.

1.2.7 National Hydro Power Company Limited (NHPC)

National Hydro Power Company Limited (NHPC) operates the Idrawati HPS in Sindhupalchowk district. The project has delivered 197,031 KWh of electrical energy to NEA since October 2002.

1.2.8 Syange Bidyut Company Limited (SBC)

Lamjung Electricity Development Company (LEDCO) promoted the Syange Bidyut Company (SBC) with the objective of developing a locally owned grid connected mini hydropower Project. The 183 KWh project was designed by LEDCO. Its construction activities were also supervised by LEDCO and LEDCO is presently managing the operation of the power plant. LEDCO is one of the promoters of the Syange Bidyut Company. The Syange Bidyut Company has the neighboring VDCs and the local individuals as a majority shareholder with over 50% of the shareholding in the company. The Syange Project Company has the neighboring VDCs and the local individuals as a majority shareholder with over 50% of the shareholding in the company. The Syange Project is the first project is the first project built in Nepal after the Nepal Electricity Authority (NEA) introduced its new policies to buy power from small hydropower developers. The project was built at a cost of approximately 23.5 million rupees. The Project has delivered 3,821 KWh of electrical energy to NEA since Jan 2002.

Lamjung Electricity Development Company (LEDCO) is a community owned company dedicated to developing modern forms of energy through renewable energy technologies.

1.2.9 Rairang Hydropower Development Company Private Limited

Rairang Hydropower Development Company Private Limited (RHPD) operates the Rairang Small HPS in Dhading district. The Project has delivered 1,298 KWh of electrical energy to NEA since Dec 2004.

1.2.10 Khudi Hydro Power Limited (KHP)

LEDCO promoted the Khudi Hydropower Limited (KHL) to own, build and operate the Khudi Hydropower Project (KHP) in Lamjung district. The 3.8 MW Project required an investment of approximately 500 million rupees. LEDCO and SCP Hydro International of Canada proposed to build the project jointly through the KHL. A joint business

agreement to this effect was approved by the Depart of industry in Nepal. Presently, KHP is being implemented by a joint business of Butwal Power Company (BPC) having 60% stake, SCP Hydro 40% and LEDCO 15%. This year the project has delivered 9,320 KWh of electrical energy to NEA.

1.2.11 Unique Hydel Company Private Limited (UHC)

Unique Hydel Company private Limited (UHC) operates the Baramchi HPS in Sindhupalchowk district. This power station started its commercial operation since 115h Jan 2007 and so far has produced 2,090 KWh of electrical energy to NEA.

1.2.12 Alliance Power Nepal Private Limited (APN)

Alliance Power Nepal Private Limited (APN) operates the Chaku Khola Small HPS in Sindhupalchowk district. The Project delivered 16,313 KWh of electrical energy to NEA.

1.3 Statement of the Problem

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 country's power sector, NEA has the prime responsibility of taking necessary steps towards achieving this goal.

Considering NEA's limited resources for capital investments, financial resources available in the local market should be tapped for the equity contribution. The successful commissioning of the Chilime hydropower project under NEA-private partnership was indicative of the beginning of a new era of public-private sector cooperation in Nepal's electricity sector. This should act as s springboard for NEA to adopt an effective joint business investment policy to meet the growing demand of energy in the country.

It is very difficult to the efficiency of IPP in view of their economic as well as socio-development goals. Different objectives of various parties involved with IPPs outing to be fulfilled in a competitive environment by the management of respective IPPs. In order to realize these objectives, IPPs to be efficient in the utilization of their resources.

Finance is one of the most important functional of a business. It is concerned with generation, transmission, distribution and other function of any business including independent power producers. The problem toward which this study is directed is to identity and analyzes the financial strength and weaknesses of IPPs of Nepal, hear BPC and CHPCL. Besides the study attempts to seek answers of the following questions:

- Do the financial ratio best describe the performance of these IPPs?
- What types of contemporary steps are essential for performance improvement of Nepalese IPPs?

Financial analysis 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 position of BPC and CHPCL; and to suggest recommendation based upon it. The specific objective of this study will be:

- To analyze the financial performance of BPC and CHPCL and make financial analysis.
- To identify major strengths and weaknesses of BPC and CHPCL.
- To find out the past and present challenges undergoing by IPPs in Nepal.

1.5 Significance of the Study

Analysis of financial position and statement is a crucial part of financial decision making process of business enterprise. Poor financial management affects adversely on liquidity, turnover and profitability. It is required to measure the financial position of the business periodically in order to ensure smooth functioning of a business, big or small. CHPCL is one of the promising names in the sector of power generation business and the first and only NEA-private partnership business to date.

Nepal, as a developing country, needs more and more new energy sources to meet the ever- increasing demand for socio-economic development and industrialization of the country. In this backdrop, 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 services 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 IPPs, if any. Researchers who are interested in the study of the financial performance of similar hydro power business may find this study of use.

1.6 Limitations of the Study

In spite of the conceptualization made, analysis performed and generalization drawn regarding the financial performance, the study may have some constraints. The study will be limited by following factors.

- The study covers a period of 4 years from the first fiscal year 2003/04 to the recent fiscal year 2006/07 of CHPCL, and that of BPC is from fiscal 2000/01 to 2006/07, but the main focus is on financial factors.

- The secondary data is the 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 manly concerned with BPC and CHPCL out of 12 IPPs in operation, the conclusion drawn form the study and suggestions offered may not be applicable to any other private or public enterprise.
- This study may not be precise as it is carried out 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 IPPs, here BPC and CHPCL. The study has been divided into five chapters. Each chapter is devoted to some aspects of the study. The major chapters of the study are as follows:

Chapter One Introduction
Chapter Two Review of Literature
Chapter Three Research Methodology
Chapter Four Presentation and Analysis of Data
Chapter Five Summary, Conclusion and Recommendation

The first chapter deals with the initial proposal of the thesis incorporated with a view to explain in detail the aspect of hydropower development and a brief overview of NEA and IPPs of Nepal. It is focused on the statement of the problem; importance, objectives, limitations and organizations of the study.

Chapter Two review available literature regarding findings and recommendations of previous research work made in respect of NEA and any IPP.

Research methodology is discussed in the third chapter; which includes research design, types and sources of data, data collection procedure, methods of analysis and analytical tools used.

In the fourth chapter, data collected through various sources have been presented. It mainly contains the analysis and presentations of collected data and information through definite course of research methodology. The generated results after the application of the research method are analyzed and interpreted in this chapter.

Ultimately, the fifth and the last chapter of the study covers summary, conclusion of the study and recommendations and suggestions for the further improvement. Besides these, bibliography and appendices are also included.

CHAPTER II

REVIEW OF LITERATURE

2.1 Introduction

Review of literature is actually a process of consulting published books, journals and unpublished (dissertation, field work) literatures related and relevant to one's selected topics. The main purpose of literature review is to find out what works have been done in the area of the research problem and what remains undone in the field of research being undertaken. While conducting the research study, previous studies should also not be ignored to avoid duplication of studies.

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 views expressed by various scholars and researchers on the financial performance of private and public enterprises.

2.2.1 Financial Analysis

Financial Analysis is designed to determine the relative strengths and weaknesses 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 on order to estimate future cash flows from the company and to evaluate the riskiness of these flows. Managers need to be aware of their

companies' financial position in order to detect potential problems and to strengthen weaknesses (Weston and 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 diagnose strengths and weaknesses in a company's performance. Financial performance is the main indicator of the success or failure of a company. The focus of financial analysis is on the key figures in the financial statements and the significant relationship that exists between them (Khan and 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 analysts to examine the company's performance in order to make investment decisions (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 to earning and dividend over the past few years, in the form of income statement and balance sheet.

2.2.2 Financial Statement 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 company's performance with that of other companies in the same line of business, which is often identifying the company's industry classification. An analysis of financial statements should provide analysis with better understanding of the financial condition and performance of a company, than they can obtain from analysis of the financial data alone (Van Horne, 2004:350).

Essentially, the function of financial statement is to convey to the reader, in summary form, certain fundamental information regarding the financial health or the 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. There are three major financial statements in common use at present. They are the following (Lynch and Williamson, 1983:465-467).

Balance Sheet

The Balance Sheet, or Statement of Financial Position, portrays the financial structure of the company in terms of its economic resources and the respective interests or claims on such resources. A balance sheet shows the financial position of a company by detailing the source 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.

Income Statement

The Income Statement, or Operating Statement, summarizes in economic terms the results of the company's activities for a specified period of time. It is the 'scoreboard'' of a company's performance during a particular period of time such as a year, semester or a quarter. The generally accepted conversion is to show one year events in the income statement. The income statement or profit and loss account presents the summary of revenues, expenses and net income (or net loss) of a company for the period covered by the account.

Statement of Changes in Financial Position

The statement of changes in financial position provides in summary form the results of the transactions over a given period of involving the assets (or funds) of the firm. Basically, it measures changes in key segments of the firm's capital structure in terms of sources of funds acquired during the period and the important uses to which such funds were put. Used in conjunction with the balance sheet and income statement, its importance lies in its ability to supply an item which represents a deficiency in each of the other statements.

2.2.3 Objectives of Financial Statement Analysis

Financial statement analysis, being an information processing system designed to provide data for decision making, thus involves a study relationship among various financial factors in a company as disclosed by a single set of statement and a study of trends of these factors as shown in series of statements. It aims to provide a clear understanding of changing profitability and financial condition of a company (Moer, 1961:4).

However, objectives of financial statements analysis differ as per the need of different parties involved in a company. In broad sense, there could be two major possible objectives of financial statement statement analysis (Needles, 1989:63-64).

Assessment of Past Performance Current Position

Past performance is often good indicator of future performance. Therefore, an investor or creditor is interested in the past sales, expenses, net income, cash flow and return in investment. In addition, an analysis of current position tells what assets the company owns and what liabilities must be paid. Besides, it provides the information about various owns and what liabilities must be paid. Besides, it provides the information about various facts in relation to the company such as:

- Earning capacity or the profitability of the company.
- Operational efficiency of the company as a whole of its various departments.

- Long-term and short-term solvency of the company for the benefit of debenture holders and trade credit.
- Real meaning and significance of financial data.

Assessment of Potential and Related Risk

Investors judge the potential earning capacity of a company because that affects the value of the investment or share, and the amount of dividend that the company pays. The risk of an investment or loan also rests on whether the future profitability and liquidity of the company is promising or not. Therefore, the creditors judge the potential debt paying ability of the company, and managers are interested in various information concerning different potentials, such as:

- Possibility of development in the near future through forecast and budget allocation.
- Financial stability of the business.
- Reforms needed in the present policies and procedures that help to reduce weaknesses and strengthen performance.

2.2.4 Significance of Financial Statement Analysis

Financial statements report both on a firm's position at a point in time and on its operations over some past period. However, their real value lies in the fact that they can be used to help predict the firm's future earnings and dividends. From an investor's standpoint, financial statement analysis is useful both as a way to anticipate future conditions and, more important as a starting point for planning actions that will influence the future course of events (Weston and Brigham, 1987:240).

Parties those benefited by the analysis of financial performance can be enumerated as (Srivastava, 1993:58-59).

Significance to Top Management

Top management being responsible of ensuring that the resources are used most efficiently and effectively and that the company's financial position is sound, must analyze financial statements to measure whether stated objectives have been met or not and to formulate operating strategies and policies so as to overall performance of the company.

Significance to Creditors

While trade creditors are interested in a company to meet claim over a short period of time, the lenders of long-term debt are interested with a company's long-term solvency and survival. The lenders can decide whether the borrower retains the capacity of refunding the principal and paying interest in time or not through and analysis of financial statements.

Significance to Shareholders

The investors, who have invested their fund in a company's shares, are most concerned about the company's earning. Normally, if the performance of the company is excellent, the shareholders wish to buy the shares whereas, they simply intend to hold the shares in case of satisfactory profit, and they rush to sell their shares in case of poor performance of the company. So, the analysis of financial statement helps shareholders to decide whether buy, sell, or hold the shares.

Significance to Economists and Governmental Agencies

Economists analyze the financial statements with a view to study the prevailing business and economic condition. The government agencies analyze them for the purpose of price regulation, rate setting, taxes and similar other purpose.

Significance to Labor Unions

Labor unions are interested in rights and benefits of labors to raise the moral of labors. To motivate the labors they expect increase in wages, fringe benefits and so on. An analysis of financial statements assists labor unions to assess whether the company is in the situation or not to make facilities available.

2.2.5 Techniques of Financial Statement Analysis

The techniques of analysis are employed to ascertain or measure the relationship among the financial statement items of a single set of statement and changes that have taken place in these items as reflected in successive financial statements. The fundamental of the analytical techniques is to simplify or reduce the data under review to the understandable terms.

Out of various techniques, selection of a technique or combination of the techniques depends on the purpose of analysis. Different techniques reveal different facts associated with the company, so some or all of the following major techniques can be used for financial statement analysis.

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 sheets 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 those changes occurred due to change in owners' equity. It is also aimed to depict the way in which the company used its financial resources during the period (Pandey, 1999:64).

The method of preparing funds flow statement depends essentially on the sense in which the term fund is used. There are three concepts of fund: cash concept, total resources

concept and working capital concept. According to cash concept, the word fund is synonymous with cash whereas, total resources 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 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 of 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 evaluate the financial of a company (the portion of growth financed internally and financed externally).

In spite of these significances of funds flow analysis to various parties associated with a company, it is not free from drawbacks. Its shortcomings can be listed as:

- It is not foolproof as it depends on conventional financial statements.
- It cannot introduce any new items, which causes changes in financial status of a company.
- It is not much relevant as the study of change in cash position is more useful rather than fund position.
- It is historical in nature. So, it cannot estimate source and application of fund in near future.
- It does not reflect the structural and policy changes.

Cash Flow Analysis

This statement is prepared to know clearly the various items of inflow and outflow of cash. Cash flow analysis is different form funds flow analysis in the sense. The analysis relates to the movements of cash rather than the inflow and outflow of working capital.

It summarizes the causes of changes in cash position between dates of two balance sheets. While preparing cash flow statement, only cash receipts from debtor against credit sales are recognized as the source of cash. Similarly, cash expenses, cash purchased and cash payments to suppliers for credit purchase are regarded as the use of cash. Incomes and expenses outstanding and prepaid expenses are not considered under this analysis.

This type of analysis is useful for short-term planning of a company. The company needs sufficient cash to pay debt maturing in near future, to pay interest and other expenses and, to pay dividends to shareholders. The projection of cash flows for near future thus, ensures the availability of sufficient cash to match the need of a company during the period and accordingly, facilitate arrangement to meet the deficit or invest the surplus cash temporarily (Pandey, 1999:75).

Though it is more appropriate than funds flow analysis for the decisions related to near future, it is also not free from some drawbacks, such as:

- It is not perfect as it depends on conventional financial statements.
- It is historical in nature.
- It does not reflect the structural and policy changes.

Trend Analysis

This method is immensely helpful for the horizontal study of the data (comparative study of financial statements of several years). This method of analysis involves the comparison of percentage relationships that each statement item bears to the same item in

the base year. The base year may be the earliest year latest year or any intervening year under the study. This exhibits the direction to which the company is proceeding.

Trend analysis is an analysis of a company's financial ratios over time, made in order to determine the improvement or deterioration of its financial situation. But trend ratio are generally not computed for all of the items in the statement, as the fundamental objective is to make comparison among items having same logical relationships to one anther (Weston and Brigham, 1987:251).

Trend analysis reveals whether the current financial position of the company has improved over the past years or not. It shows which of the items have moved in a favorable direction and which of them in unfavorable direction. Though it is an important tool analysis, it is bound by some limitations, such as:

- Trend for a single balance sheet or income statement is seldom very informative.
- It does give accurate results if accounting principles followed by the accountants are not considered over period of study.
- Price level changes adversely affect the comparison.
- Selected base year for some of the items in the statements may not be typical.

Ratio Analysis

Ratio analysis is a widely used of financial analysis. It is defined as the systematic use of ratio to interpret the financial statements so that strengths and weaknesses of a firm as well as its historical performance and current financial condition can be determined. The term ratio refers to the numerical or quantitative relationship between two items / variables (Khan and jain, 1999:4.1).

Ratio analysis is carried out to develop meaningful relationship among individual items or groups of items usually shown in the periodical financial statements. An accounting ratio shows the relationship between two interrelated accounting figures. Ratio is guides or shortcuts that are useful in evaluating the financial position and operation of a

company. When the relationship between two figures in the balance sheet is established, the ratio so calculated is called “Balance mat be expressed in the from of quotient, percentage or proportion.

Ratio analysis involves two types of comparison for the useful interpretation of financial statements. A ratio itself dose not indicate the favorable or unfavorable position. Most commonly used standards to evaluate the ratio are:

- Comparison of present ratio with past and expected
- Comparison of ratio of the company with those of similar over the period or with industry at same point of time.

With the help of ratios, one can judge financial performance of a company over a period of time and against the industry average. Ratios help analysis to from the judgments of the company can take strategic decision based on the position revealed by ratios. Investors can decide about the future of their investment. Creditors can judge whether the company is anymore creditworthy or not.

All these judgments are backed by different types of ratios. For example, liquidity ratios measure the ability of a company to meet its current obligations. Leverage ratios evaluate the log-term financial position of a company. Activity ratios evaluate the efficiency with which a company manages its assets. Finally, profitability ratio operating efficiency of a company.

Though ratio analysis is a powerful tool of financial analysis, it should be used with extreme care and judgments should be carefully considered it suffers from certain drawbacks, such as:

- It is difficult to decide the proper basis of comparison.
- It calls interpretation to creation aspects of business, which needs detailed investigation before arriving at any financial conclusion.

- Unless there is a consistency in adoption of accounting methods, ratios may not prove of greater use in case inter-company comparison.
- The price level changes make the interpretation of ratios invalid.
- The ratios are generally calculate form past financial statement and thus, are no indicators of future.

2.2 .6 Limitations of Financial Statement Analysis

Users of financial statements can get better insight about the financial strength and weaknesses of the company if they properly analyze the information reported in these statements. It facilitates to explore various facts related to the past performance of a company and forecast its potentials for achieving expected results. However, there are some limitations that prevent the realization of the stated proposition. These limitations are listed below (Jain and Narang, 1989:pb33-b35).

Historical Nature of Financial Statements

The basic nature of financial statements is historical. Past can be a precise and infallible index of the future and can be never be perfectly helpful for future forecast and planning.

No Substitute for judgment

Financial statements analysis is a tool be used experts to evaluate the financial performance of company .If used by amateurs' statement analysis may provide faulty conclusions.

Reliability of Figures

Reliability of financial statement analysis depends on reliability of the figures of the financial statement under scrutiny. The entire working of analysis can be quashed by manipulation if the income by accountants for the valuation of assets and such other facts.

Single Year Analysis is not much valuable

From the analysis of financial statements relating to a single year, one cannot draw meaningful conclusions and, thus it does not have much use value.

Results May Have Different Interpretations

Different users may different interpret the results derived from the analysis of financial statements. For example, a high current ratio may suit the lenders but it may be the sign of insufficiency of the management due to the utilization of funds.

Change in Accounting Methods

Analysis of financial statements can be effective only if the figures derived from financial statements are comparable. The whole exercise of analysis becomes futile, is a change in accounting methods and the figures of current period are not comparable anymore.

Pitfall of Inter-Company Comparison

When different companies are adopting different procedures, policies and different items under similar heading, comparison can be more difficult. Such analysis cannot provide reliable basis to assess the performance, profitability and financial condition of a company as compared to whole industry.

Price Level Change Reduces the Validity of Analysis

The continuous rapid change in the value of money economically reduce the validity of analysis, in the present day .Acquisition of assets of different levels of price make comparison futile as meaning conclusion can only drawn form comparative analysis of such items relating to several accounting periods.

Selection of Appropriate Tool

There are different tools of analysis available to an analysis. The tool be used in a particular situation depend on skill, training, intelligence and of the analysis. If inappropriate tool is used, it may lead to faulty conclusions.

2.3 Review of Related Acts and Plans

"**Electricity Development Policy-2058**"

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 bank;
- 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" in imposed with following objectives:

- To utilize the existing water resources of the country and produce electricity at a low cost;
- To make 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 made to maximize the use of country' hydropower potential in order to meet the domestic demand of electricity.
- Construction and implementation of hydropower projects shall be encouraged to promote on the principles of build-operate-own transfer (BOOT).

- For making the electricity service dependable, reliable and extension of qualitative service delivery within the kingdom at reasonable cost; the existing 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 purposes. 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 down stream 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 mobilize 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 labor and skill be given priority in implementing the hydropower projects.
- The industry producing the construction materials and equipments so 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 environment 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.

Review of Ninth Five Year Plan

According to the population consensus 2058 BS, by the end of ninth five year plan about 40% of the total population is benefited by the electricity. The 40% includes 33% supplied by national grid and 7% from alternative energy (solar, bio energy etc.). At the end of the ninth five year plan 58 municipalities and about 1600 VDCs have electrification on all 75 districts. At the end of ninth five year plan, the pick hour demand has reached to 426 MV. Power consumption per individual is 60 KW, and average price per unit is Rs. 6.81 at the end of ninth five year plan.

Tenth Five Year Plan (Electricity Development)

In tenth five year plan, to reduce the poverty significantly, the following objectives are set:

- By using available water resources low cost electricity will be produced.
- A qualitative and reliable electricity service will be expanded to facilitate financial activities.
- Rural electrification will be boost to facilitate rural economy.
- Electricity will be developed as an exportable product.

To fulfill the aforesaid objectives, the government and private sector will be active for the unilateral or bilateral project.

2.4 Review of Related Articles

Hydropower development has always been a vital issue for lots of Nepalese writers and researchers. This section is devoted to the review of some major article published in newspapers, journals, reports and magazines and, an article circulated in websites concerning state and problems of hydropower development in the country and, financial performance of IPPs of NEA.

Mr. Uttam Maharjan (2002), in his article "Hydropower Development-Targeting the poor", has said that the project run by foreign parties are not benefiting the country in real terms. The PPAs reached with them have far-reaching and long-term implications. The electricity tariff of the country is among the highest in the world. Moreover, donors also impose high tariffs as a precondition for precondition for financing hydel projects. Foreign aid, which is invested in projects, often comes along with harsh condition. There is no transparency, accountability, effective monitoring mechanism and financial discipline in such projects. Rather, corruption and maladministration would rule the roost (Maharjan, 8 March 2002, The Rising Nepal)

Mr. Maharjan has added that there is often delay in hydel projects and the cost also tends to shoot up vis-à-vis contract amounts. Nepalese rupee devaluation, additional works and the likes are cited as causes for high costs. Such arguments do hold water since the contract undertaken by competent and experienced foreign parties already take into account all such factors as may influence the project. Viewed thus, only slight price adjustments may crop up. In contrast, small and medium-scale hydel project are suitable for the country, since low capital and indigenous expertise suffice to operate such project. Besides, these projects also answer the needs of local people and enlist their participation.

As the reports say that the generating cost of the project is a mere Rs.2.19 per unit, and selling that to Nepal Electricity Authority (NEA) at Rs.5 per unit as the power purchase Agreement (PPA) still slackens Chilime company with good Profit, the editorial of "New Business Age- Cheap Chilime?" inscribe that if all power project were like Chilime, the

country's power bill would have been significantly lower thane what it is today. However, the editorial points out that hydroelectricity project, unlike their thermal counterparts, are location specific, causing operational transmission cost both in terms of initial capital cost as well as the recurring operational cost. In the present context, they are also more vulnerable from security point of view (Editorial, November 2003, New Business Age)

The editorial also includes that Chilime power if likely to be costlier to be in few years than khimti and Bhote koshi as the rate of annul increment in the price is higher in case of the PPA that NEA has signed with Chilime, Equally important are the reports that many costs incurred in Chilime are not accounted for in this project's books. One example is the administrative and technical support provided form NEA. Next are the colts of transmission line stretched specially for Chilime form its project site to Trishuli. Finally, it is also doubted whether the project's insurance cost and the revenue loss of two years are accounted for. It would be better for the Chilime Company to clarify those concerns before issuing shares to the general.

Mr. Surendra Phuyal (2001), in his article "Home- financed Chilime hydel project to go public" has said the Chillime power cost is cheaper by at least 60 percent compared to the price of the power which stands at over Rs 5 currently generated by similar foreign-developed and financed project like the 60-MW Bhotekoshi power projects. Hydropower experts and officials closely following the developments expressed happiness and welcomed the Chilime –type initiative which, to quote the, "Would save the nation from bankruptcy and lead towards self dependency and prosperity". Referring to charted accountant-cum –energy expect Ratna Sansar shrestha. The article adds that, the per unit price of locally-developed Chilime would climb to RS 8 or 10 while the cost of Khimti and Bhotekoshi supplied power would shoot to a whopping RS 42- more than five times that of Chilime-by 2016(Phuyal,29May2001,The Kathmandu post)

Dr.B.H. Nepal (2005), in this his article "Managing Nepalese Waters" has Presented two logics to verify the impossibility for Nepal alone to harness water hydropower in a large scale First, it has been estimated that the cost for the production of Nepal's capacity of

42,000MW would come roughly to US$ 80.00 billion and for 25,000 MW, it would be around US$ 50,000.00 billion. And second, Nepal's Fiscal Budget for 2004/2005 was just nearly US$ 1.6billion. He has also mentioned that due to poor motivation of the local investors, Nepal's cheapest projects like Upper Tamakoshi have been wasted. The Norwegian Feasibility study reveals that nearly US$ 300.00 million is necessary for the project including 65 KM road black topping, 33KM of which is to be newly constructed to connect the site. The cost pre unit thus comes nearly 89 Nepali Paisa. Money can be allocated form: etc if the government has zeal (Dr.Nepal, 8April/june2005.south Asian journal)

Mr. S B pun (2006), in his article "Ordinance for the High Rs. 1.280 Crores stakes" has mentioned that BPC is fortunate that it dose not have the debt burden that IPPs carry. However, there is in doubt that other "IPP cows" are not for behind in distributing the not-so-modest dividends. The 2001 hydropower development policy does stress on the need "......to utilize labor and skills of Nepal ...." and mobilize "internal capital market for investment in power sector." Like many of the other plans and policies of Nepal, these are sadly in the paper only. However, as indicated by the flurry of under-10 Mw hydropower plants under construction/commissioned, the Nepalese entrepreneurs have demonstrated that they can mobilize the internal capital market and that they can implement smaller projects using local labor and skills. This needs to be appreciated very much particularly because of the prevailing difficult environment that our country is undergoing (Pun, 17 March 2006, www.nepalnews.com.np).

In "Nepal's Hydropower Dream: Are We prepared for Nightmares?" Mr. Sumit Pokhrel (2006) has criticized that electricity is expensive, but it is not because of high production cost, instead it is because of various policy and regulatory failures. Government controlled NEA has sole authority on transmission and distribution of electricity in Nepal. In spite of selling most expensive electricity in the region to its consumers, in 2006 alone, the NEA has suffered a loss of Rs. 2.47 billion with cumulative loss of Rs.7 billion by this year (Pokhrel, 7 October 2006, www.nepaldevelopment.com).

Mr. Pokhrel has further said that The Government of Nepal lacks financial capacity to fulfill ever increasing energy demand. There is a need to promote Nepalese private sector investment in hydro-power sector by creating conducive investment environment-not to forget the increasing foreign remittance which accounts for approx 12% of GDP, if only could be canalized in construction of micro, small, medium hydro-power to meet electricity demand and promotion of end-use will stimulate national economy. Healthy domestic corporate-cooperative partnership could be sought to realize equitable water resource use benefits without surrendering the control of valuable natural resources to the foreign forces.

In "Revitalizing Small Hydropower in Nepal", Mr. Ramesh C Arya (2007) has said that generation of affordable and cheaper electricity from hydropower projects and supply to rural areas is the main challenge of Nepal. Hydropower plants, though in smaller scale, are capital intensive. Due to the poor accessibility and rugged terrain, transportation of materials and equipment is quite expensive. Dispersed villages and settlements in hilly and mountain areas make electrification process costly. Due to the high electricity tariff and low affordability of the village people, electrification in rural Nepal is very slow despite high demand (Arya, 14 April 2007, The Kathmandu Post).

Mr. Arya has added that NEA's average electricity tariff is Rs. 6.81, which is among the highest in the world. This is mainly because of high cost of construction and the high price of power purchased from Khimti and Bhotekoshi power projects, which has to be paid for in dollars. In contrast, the power from the 20 MW Chilime and 3 MW Piluwa Khola, both of which have been constructed by local investment, is much cheaper. NEA purchases power from Nepalese companies at Rs 3 per nit in the wet season and Rs 4.25 per unit in the dry season. He believes that dependence on imported power requirements may no longer be needed and; we will be exporting hydropower after five years as many small hydropower projects have been started by the Nepalese themselves and they have received support from international organizations.

Mr. Bikash Pandey (2003), in his article "People power", has pointed out three main reasons why locally designed projects are less expensive:

- The cost of capital borrowed from local banks is at its lowest point in many years.
- Developers had complete flexibility in where they source their equipment and how they pick contractors, and they can get the best prices.
- Smaller projects mean fewer technical complications and the ability to breakdown contracts into small components that could be bid out among a large number of competitive Nepali, Indian and Chinese companies (Pandey, 17/23 October 2003, www.nepalitimes.com).

Mr. Pandey has added that besides being cheaper, local investment also benefit the national economy through much stronger backward linkages in construction and manufacturing. Usually, it is only the equipment (25-40 percent of total cost) which has to be imported from overseas. Today, projects like Piluwa and Chilime are living proof that the paradigm shifts in Nepali hydropower planning have brought real change. These and other projects have extensive involvement of both in-country financial institutions and technical manpower. And the beauty is their cost of electricity generation is $1,500 per KW, less than half that of larger aid-funded projects.

Mr.Prachar Pradhan (2007), in his article "Challenges and Issue on the Domestic Hydropower Projects and Prospective on Export Oriented Hydropower Projects", has said that the challenges lie in developing cheap and reliable hydropower projects so as to keep the tariff within the reach of everyone. The basic infrastructure is not well developed; often includes infrastructure such as log approach roads, transmission lines and so on. The majority of equipment and materials also have to be imported, which requires foreign currency and transportation overload for a long distance from the port. The fact that major share of the financing is from external loans and investment which are to be paid back in foreign currency; escalates the tariff further (Pradhan, August 2007, Vidyut).

Mr. Pradhan has added that the cost of development of hydropower projects could be reduced substantially only with the effort of national technicians, local manufacturers and

contractors. The government policy should be formulated to encourage national technician and contractors by reducing the role of expatriate consultants and contractors. Local financing institution should be mobilized for financing small and medium scale hydropower projects. Foreign consultants' input should be minimized in small and medium projects. The mode of development should be private-public partnership.

2.5 Review of Related Thesis

This section comprises reviews of various these that are related to its topic and which may be helpful for this study. Though their problems may differ to some extent, methods and techniques of analyzing financial performance may resemble.

The thesis submitted by Mr. Sudeep Bahadur Shrestha (1996) on the topic "Financing Power Development in Nepal- A case study of NEA" (1996) points out that the power is a capital intensive sector for country like Nepal but there was no clear-cut policy for its development and its financing prior to the era of planned development . The trend of financing on power developments shows that the Nepalese government only covers about 15 to 20 percent of total investment whereas 75 to 85 percent of investment is covered by foreign aid and, that the share of international loan is greater than the grant.

The study also says that the main issues of financing in power development in Nepal are the shortage of capital, dependency of foreign aid, constraints in exporting power, risk of investment etc. Frequent changes in the government policies and inadequate legal provision, geographical complexity, lack of trained manpower and modern technology are other constraints. According to the study, observing the power deficiency problem, it can be said that there is market with respect to the economically feasible power potentiality and with the large-scale projects; the scarcity of the sizable market is in front.

Miss. Eliza Amatya (2005), in her thesis "An Evaluation of Financial Performance of NEA" has examined the financial strengths and weakness of NEA based on its liquidity, activity, profitability and leverage ratios. The study explains that NEA is suffering from

ineffective utilization of assets, sluggish outstanding debt collection and generation of very low returns. The capacity of assets in the generation of revenue is not satisfactory and the revenue earned is very low in comparison to the investments made in the assets. Electricity leakage, theft and wastage and, inefficient cost control mechanism with high maintenance expenditure are accused for the reduced profit earning capacity of NEA.

In her thesis, she has urged for the improvement in revenue collection system, human resource skills, assets utilization and cost control mechanism. She believes that more autonomy to the top management would result in timely decision making procedure, which seems to be rather long in NEA.

Mr. Pushpa Ram Khadka (2007), in his research "Profit Planning in Hydropower Industry". Has examined how far the different functional budgets were being applied as tool for profit planning in BPC. The study reports that though yearly net earning are satisfactory; BPC is suffering from high fixed costs, unsystematically classified overheads, poor inter-departmental coordination and lack of investment and tax planning. There is no definite target to distribute the yearly dividend to the shareholders. Human and financial performance system is not well developed. However, the strength of BPC is that it has plenty of funds available and, there are no loans and borrowings which indicates its sound financial condition.

Mr. Khadka has recommended that the company should follow the practices of setting specific financial goals future activities and should develop major programs to accomplish the formulated objectives and goals. Participative management, profit planning manuals and discounted capital expenditure approach should be introduced and, communicated within the company. The company should also conduct SWOT analysis to improve its capabilities.

The thesis submitted by Mr. Ram Chandra Khatiwada (2007) on the topic "Financial Performance Analysis of Butwal Power Company, examines the financial strengths and weaknesses of BPC based on its ration analysis, income and expenditure analysis and,

least square trend analysis. The study reveals that apart from total assets turnover ratio and capital employed turnover ration all other ratios are satisfactory and indicate good financial performance of BPC. It also reveals that both the operating income and operating expenses are in decreasing trend, but as the income is diversified appropriately the company posses a good sustaining power. The trend analysis reveals that the company has done better in sales but worse in operating income over the period.

The grievance of the study is that the company holds a big portion of current assets unutilized and lack the ability to enjoy less cost of borrowed capital. Mr. Khatiwada has proposed for a better capital structure and efficient use of total assets in BPC.

Mr. Samraj Tamang (2007) conducted a research with the main objective of finding the efficiency of NEPSE and the effect of Nepalese investors' behavior on the level of efficiency of NEPSE, entitled "Market Efficiency and the Investors" ; and found out that NEPSE is not efficient with respect to any of so-called levels of efficiency. Processing of information in NEPSE is rather weak and such is perhaps because of the persistent of large number of non-actively traded share. In addition, NEPSE behavior exhibits that price response to information is based. Price at one time may be unfairly high and later on are unfairly low. It suggests that information alone is not moving the price; other probable reasons for such may be irrational behavior of investors, unfair practices of market intermediaries, non-disclosure of information by listed companies on time, manipulative action of speculators etc. This provides evidence consistent with market inefficiencies.

The analysis is based on the NEPSE index for total market composite and banking sector index for total market composite and banking sector index for the study period, test of market efficiency is performed by the randomness analysis of daily market return through the use of Auto-correlation and Run test models. The autocorrelation and run test have detected the existence of significant relationship in the series of market return. It means stock return or prices are following a predictable pattern. Therefore, an active investor

with historical information about the stock prices can easily outperform with simple buy and hold strategy.

The various studies have found that limited resources in consistency of proper liquidity position are increasing challenges faced by the various hydropower companies. Some Researches have been done in this financial performance analysis. Hence the researchers had attempted to fill this research gap by considering the reference to standards. This research will be enable to analyze the financial performance, strength and weakness of BPC & CHPCL and identify major challenges faced by IPPs in Nepal.

CHAPTER III

RESEARCH METHODOLOGY

3.1 Introduction

A suitable and simple research methodology is followed in order to achieve the stated objectives of the study and as well as 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

This research design is basically the comparative evaluation of BPC and CHPCL. Descriptive and analytical approaches were used to evaluate the financial performance of these IPPS. Descriptive approach is utilized for conceptualization, problem identification, conclusion and suggestion of the study where as analytical approach will be followed for 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

The study as directed towards evaluation of financial performance of IPPs has a population of 12 IPPs currently in operation. However, only three of them are listed in the Nepal Stock exchange (NEPSE); BPC, CHPCL and NHPC. The sample of two IPPs is taken in accordance to their price potency in the NEPSE.

This analytical study of performance evaluation is based on the financial statements of CHPCL, from its first fiscal year 2003/04 to the recent fiscal year 2006/07, and BPC, from fiscal year 2000/01 to 2006/07. Thus the period covered in the study is 4 years of CHPCL and 7 years of BPC.

3.4 Types and Sources of Data

The main sources of data for the purpose of this study are the published financial statements of BPC and CHPCL. The study is thus mainly based o the secondary data. It constitutes mostly the annual reports, which comprises balance sheet and profit and loss account statement. Information has also been supplemented from various publication of NEA.

Though the study basically covers the secondary data, however, in some cases primary data were also obtained through conversation with the engineers and managerial officials of both IPPs. All other available published and unpublished material 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 IPPs.

3.5 Research variables

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

3.6 Data Processing

The data has been processed through editing, coding and classification of the collected data. According to the nature of data, they have been inserted in meaningful tables. Presented data have been analyzed and interpreted using various financial and statistical tools.

3.7 Tools for Analysis

3.7.1 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 financial policies and strategies. Ratio analysis is used as the basic tool for this study in order to summarize the quantities of financial data and to make quantitative judgments 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 inferences regarding the performance of a company (Khan and Jain, 1999:4.33).

The following ratios are used for evaluating the performance of selected IPPs.

I .Liquidity Ratio

Liquidity Ratios are used to judge the companies ability to meet the short-term obligations. Short-term liquidity ratio involves the relationship between current assets and current liabilities. Two ratios are mainly used to measure the liquidity position (Weston and Brigham, 1987:351).

Current Ratio (CR). 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 is a measure of liquidity calculated by dividing the company's current assets by current assets.

$$\text{Current ratio} = \frac{CurrentAssets}{CurrentLiabilities}$$

Current assets includes 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 .

Quick Ratio (QR). The Quick Ratio is more accurate guide to measure the liquidity position of any company .Quick Ratio establishes a relationship between quick or liquid assets and current liabilities. Liquidity of an asset can be measure by its virtue of immediate conversion into cash without the loss of value. Quick assets comprises total current assets except prepaid expenses and stock of inventory. 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.

$$\text{Quick Ratio} = \frac{QuickAssets}{CurrentLiabilities}$$

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 compute quick assets.

II. Activity /Efficiency /Assets Management Ratios

Activity ratios also called Efficiency or Assets Management Ratios indicate the speed with which assets are being converted or turned over into sales. Activity ratios involve comparison between the level of sales and investment of various assets. Funds of creditors and owners are invested in various assets to generate sales and profits. The better is the management of assets; the larger is the amount of sales. The activity ratios are employed to evaluate the efficiency with which company manages and utilizes its assets. A proper balance between sales and assets generally reflects that assets are managed well (pandey, 1999:123).

Fixed Assets Turnover Ratio (FATOR). Fixed Assets Turnover Ratio measures the efficiency with which the company is utilizing its investment in its various net fixed assets the ratio expresses that a rupee of investment in a fixed asset generates the resulted sale. Generally high fixed assets turnover ratio indicates efficient utilization of fixed assets while inefficiency in utilization is shown by low fixed turnover ratio.

$$\text{Fixed Assets Turnover Ratio} = \frac{Sales}{NetFiixedAssets}$$

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 the net fixed assets.

Total Asset Turnover Ratio (TATOR). Total Asset Turnover Ratio shows the relationship between sales and total assets. It 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.

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

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

Inventory Turnover Ratio (ITR). The inventory or stock turnover ratio indicates the efficiency of the companies' inventory management. It shows how rapidly the inventory is turning into receivable through sales. Generally, high inventory turnover is the indications of good inventory management. However, a relatively high inventory causes overly low level of inventory and result frequent stock-out and is costly for the company.

$$\text{Inventory Turnover Ratio} = \frac{Sales}{Clo\sin gInventoty}$$

Debtors Turnover Ratio (DTR). 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.

$$\text{Debtors Turnover Ratio} = \frac{Sales}{Clo\sin gDebtors}$$

Average Collection Period (ACP). The Average Collection period provides the average turnover days 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.

$$\text{Average Collection period} = \frac{Day\sin aYear}{DebtorsTurnoverRatio}$$

III. Leverage/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 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 installments 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, 1999:4.10).

BPC does not carry loan burden and therefore this study only includes calculations of the leverage ratios of CHPCL. This study accumulates short-term borrowings from banking and financial institutions, debentures/bonds, and any other interest-bearing loan to produce total debt. High leverage ratios indicate greater financing by debt holders than those of equity holders. From the creditors' view point, high leverage ratios of the company is more risky to invest in, as its assets are already under claim of other lenders.

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.

$$\text{Debt to Equity Ratio} = \frac{TotalDebt}{ShareholdersEquity}$$

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

Debt to Total Assets Ratio (DTAR). Debt to Total Assets Ratio is **ca**lculated dividing total debts by total assets. This ratio shows the relationship between debt capital and total assets.

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

The manner in which assets are financed has a number of implications. Debt is considered to be more risky in compare to equity. The company has a legal obligation to pay interest to debt holders, irrespective of the profits made of losses incurred by the company. If the company fails to pay the debt holders in time, they can take legal action against to get the payments and in extreme cases can force the company into liquidation. On the other hand, employment of debt is advantageous for shareholders in two ways; they can retain control of the company with a limited stake and secondly their earning will be magnified when the company earns a rate of return on the total capital employed.

IV.Profitability Ratio

Profitability **ratio**s are a group of ratios showing the combined effects of liquidity, asset management, and debt management on operating results. They are the measures of a company's earning capacity and operation efficiency. Profitability ratios of the company can be calculated in relation to sales and in relation to investment. It is true that higher the profitability ratios better the financial position and vice versa (Weston and Brigham, 1987:249).

A company must earn sufficient amount of profit from its operation to and sustain in the future. Without profit no company can exist and the future of the company will be endangered. Therefore, profit is the ultimate outcome of any company. The following profitability ratios are used in this study.

Net Profit Ratio (NPR). The Net profit ratio establishes the relationship between net profit and sales. The ratio measures the companies' ability to change each rupee sales into net profit. Sales constitute the fundamental dynamic force in a business enterprise. Without sufficient sales goods and services business may not be successful. The ratio of net profit to sales shows the profitability of corporations indicating that the only increase in sales does not mean anything unless it commands profit. From this ratio it can also be acquired the information of the total expenses incurred during a certain period of time.

$$\text{Net Profit Ratio} = \frac{Net\ \text{Pr}ofitAfterTax}{Sales}$$

Operating Expenses Ratio (OPR). The Operating Expenses Ratio is the yardstick of operating efficiency. It indicates the average aggregate variety in expenses, where some of the expenses may be increasing while some may be falling. This ratio throws light on managerial policies and programs. In general, higher operating ratio is inefficient due to higher operation cost in terms of sales. Lower operating ratio is favorable, as it will

generate higher operating income, which will be sufficient to meet interest, dividend and expenses of the company.

$$\text{Operating Expenses Ratio} = \frac{OperatingExpenses}{Sales}$$

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

Return on Shareholders Equity (ROE). Return on Shareholders Equity is the most commonly used ratio for measuring the return on owners' investment. It is the proportion of net income after tax to shareholders equity .Higher ROE is favorable as it indicates higher return for shareholders at each rupee of investment.

$$\text{Return on Shareholders Equity} = \frac{Net\ \Pr ofitAfterTax}{ShareholdersEquity}$$

Return on Total Asset (ROTA). Return on Total Assets records the relationship between total assets and net profit. It is the proportion of net income after taxes plus interest expenses to total assets (total investment). The ROTA measures the profitability of all financial resources employed in the company's assets. As the satisfactory level profit is one of the main objectives of the company, this ratio shows the extent to which this objective is being achieved. Higher ROTA shows higher earning of the company in terms of its total assets. Lower ROTA indicates unsound financial position due to low level of return.

$$\text{Return on Total Assets} = \frac{Net\ \Pr ofitAfterTax\ \Gamma\ Interest}{TotalAssets}$$

V. Invisibility Ratio

An analysis of Invisibility Ratio helps the investors to know the performance of the companies. These ratios give management an indication of what investors think of the companies past performance and future prospects. If the companies liquidity, profitability, leverage and utilization ratios are good, its market value ratios will be high and its stock price will probably be as high as can be expected. The following invisibility ratios are used to test earning capacity of selected IPPs.

Earning Per Share (EPS). This ratio is calculated dividing net profit after taxes (EAT) by number of equity shares 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 position of the companies.

$$\text{Earning Per Share} = \frac{Net\ \text{Pr}ofitAfterTax}{NumberOfSharesOuts\ \text{tan}ding}$$

Dividend Per Share (DPS). This ratio can be obtained dividing total distributed dividend by number of equity shares outstanding. Dividend per share is the measure of profitability. This ratio shows the rupee earning actually distributed to common stock holders per share held by them. High ratio is favorable for the shareholders.

$$\text{Dividend Per Share} = \frac{TotalDividendDistributed}{NumberOfsharesOuts\ \text{tan}ding}$$

Dividend Payout Ratio (DPR). This ratio can be obtained dividing dividend per shares by earning per share. It determines the position of per share divided paid, out of per share earning. The higher ratio is better to the shareholders. It builds faithfulness of the investors towards the companies.

$$\text{Dividend Payout Ratio} = \frac{DividendPerShare}{EarningPerShare}$$

3.7.2 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 researchers in order to draw liable financial conclusions from data available. The following tools are used in this study for evaluating the performance of selected IPPs.

I. Arithmetic Mean

An Average is a single value selected from a group of values to represent them in same way, which is supposed to stand for whole group of which it is a part, as typical of all the values in the group. Out of various measures of the central tendency, arithmetic mean is one of the useful tools applicable here. Arithmetic mean of a given set of observation is their sum divided by the number of observations. In general, if $X_1, X_2, X_3, \text{----------}, X_n$ are the given observations and N being number of observations, then arithmetic mean usually denoted by $\overline{X}$ is given by :

$$\overline{X} = \frac{X_1 \Gamma X_2 \Gamma X_3 \Gamma ZZZZZ\Gamma X_n}{N} X \frac{X}{N}$$

II. Coefficient of Variation (CV)

Coefficient of Variation 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:

$$CV = \frac{\pm \mid 100}{\overline{X}} \%$$

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

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 homogeneous of 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 between two variables/series X and Y is usually denoted by r and can be obtained by:

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

Where, N = Number of observation

ΣX = Sum of observation in series X

ΣY = Sum of observation in series Y

ΣX^2 = Sum of squared observation in series X

ΣY^2 = Sum of squared observation in series Y

ΣXY = Sum of the product of observation in series X and Y

Value 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 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:

$$PE = 0.6745 \times \frac{1 Z r^2}{\sqrt{N}}$$

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

Reason for taking 0.6745 is that in a normal distribution, 50% of observations lie in the range p = ± 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>6PE, correlation is significant otherwise not.

V. Least Square Linear Trend

Trend Analysis is a 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 value increase by absolute amount per unit of time. The linear trend values from a series in arithmetic progression.

Mathematically $Y = a + bX$

Where, Y = value of the dependent value
a = Y-intercept
b = slope of the trend line
X = value of the independent value

Normal equations fitting above equation are:

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

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

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

VI. Chi-Square Test

The Chi-square (χ2) 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 (sthapit, A.B., et.al. 2004:333).

It is defined as:

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

Where, O = Observed Frequency

E = Expected Frequency

Expected Frequency = $\frac{RT \times CT}{N}$

Where, N = Number of Observations

RT = Row Total

CT = Column Total

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

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 the third chapter. 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 of Data from Secondary sources

This section includes the data related with the study from secondary sources. Secondary sources mean the data of the IPPs derived from their annual reports; web pages and other already published sources. The presentation and analysis of these numerical data include ratio analysis and correlation analysis.

4.1.1 Liquidity Ratio

Liquidity Ratios are used to judge the companies' ability to meet the short-term obligations. These ratios involve the relationship between current assets and current liabilities and are measured by current ratio and quick ratio.

Current Ratio (CR)

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 4.1 below.

Table no. 4.1

Calculation of Current Ratio

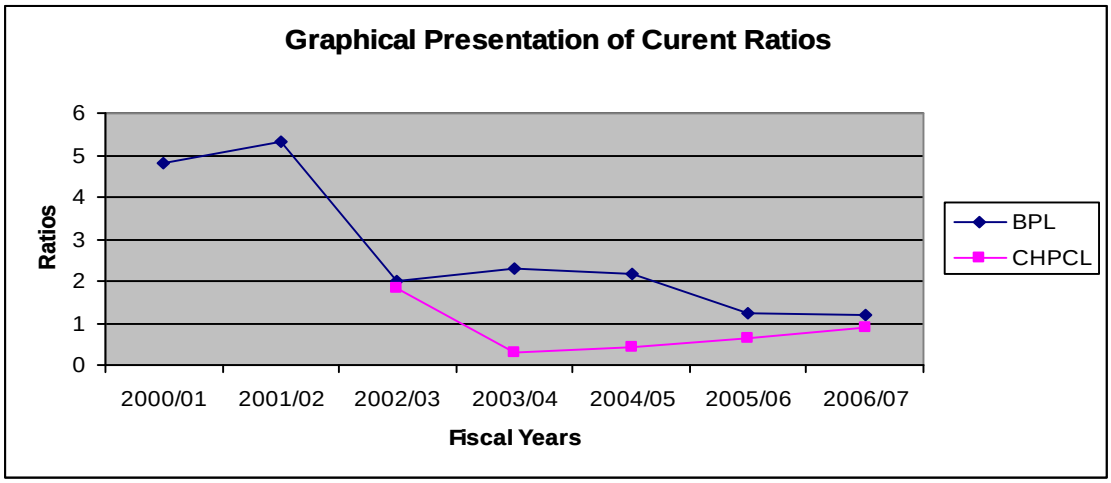
(In Thousand NRS.)

Fiscal Year	Current Assets		Current Liabilities		Ratios(Times)	
	BPC	CHPCL	BPC	CHPCL	BPC	CHPCL
2000/01	325,203		67,924		4.79	
2001/02	286,201		54,012		5.30	
2002/03	520,987	505,112	261,299	278,590	1.99	1.81
2003/04	481,833	152,819	210,152	525,083	2.29	0.29
2004/05	335,582	144,308	155,657	328,135	2.16	0.44
2005/06	543,416	206,829	433,619	327,475	1.25	0.63
2006/07	670,674	241,801	562,584	268,860	1.19	0.90
				Mean($\overline{X}$)	2.710	0.814
				Standard Deviation(σ)	1.657	0.601
				Coefficient of Variation(CV) %	61.14	73.83

Looking over the trend of current ratio of BPC over 7 years , it can be observed that other than last two years, the company's current ratio has remained satisfactory .Increased creditors and payables of BPC is the reason for decreased current ratio in last two years. On the contrary, CHPCL has been suffering from low current from the beginning of its financial operation till now. Though BPC has a fluctuating trend of current ratio, its mean current ratio of 2.710 seems to be over than the conventional standard of 2:1 which suggests a sound liquidity position.

The mean current ratio of CHPCL (0.814) clearly shows its lack of capability to meet its current obligations. Low level of stocks and huge provision for dividends are noticed as the reasons behind a low current ratio of CHPCL. Likewise CHPCL has a higher CV than that of BPC which means that CHPCL has more fluctuations in ratios than BPC.

Figure No. 4.1



The graphical presentation of current ratios shows the current ratio of BPC experienced a bulky drop in F/Y 2002/03 and since F/Y 2003/04 it has been decreasing gradually. In contrast, the current ratio of CHPCL has been increasing gradually since F/Y 2003/04.

Quick Ratio (QR)

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

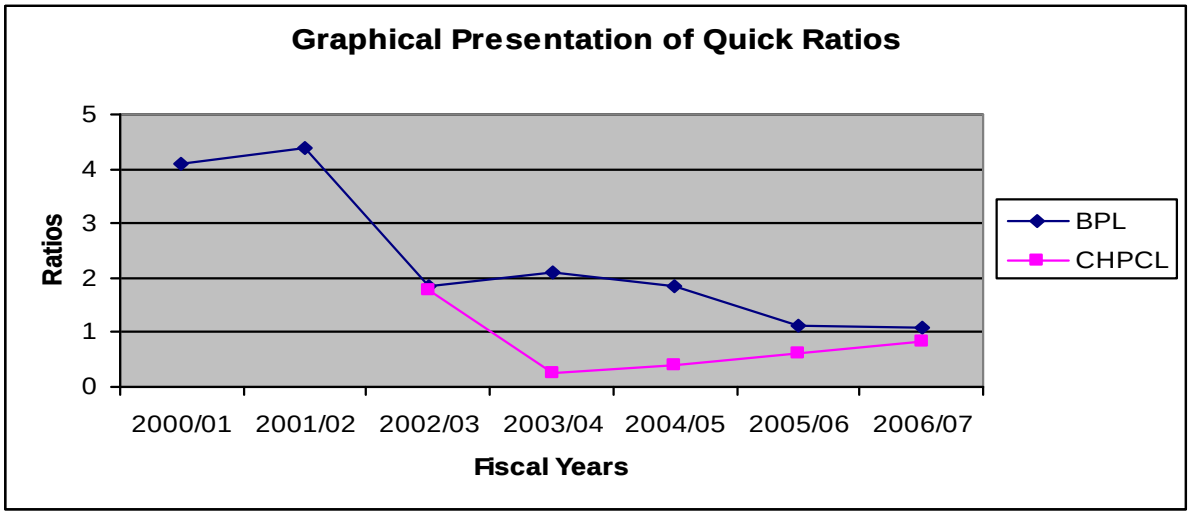
(In Thousand NRS.)

Fiscal Year	Current Assets		Current Liabilities		Ratios(Times)	
	BPC	CHPCL	BPC	CHPCL	BPC	CHPCL
2000/01	276,845		67,924		4.08	
2001/02	236,064		54,012		4.37	
2002/03	477,002	496,267	261,299	278,590	1.83	1.78
2003/04	440,067	141,698	210,152	525,083	2.09	0.27
2004/05	287,544	134,706	155,657	328,135	1.85	0.41
2005/06	485,793	196,532	433,619	327,475	1.12	0.60
2006/07	611,778	229,705	562,584	268,860	1.09	0.85
Mean($\overline{X}$)					2.347	0.782
Standard Deviation(σ)					1.339	0.598
Coefficient of Variation(CV) %					57.05	76.47

Above table reveals a fluctuating but satisfactory trend of quick ratio of BPC with in a mean of 2.347. In case of CHPCL, the pre-operational year has been only found satisfying in terms of quick ratio. The rest of fiscal years suffer from low quick ratio with an overall mean of 0.782, which reveals the inadequacy of resources to meet current obligations.

Inventory has been observed to be steadier than other current assets of CHPCL which has been revealed by increased CV in quick ratio to the CV in current of CHPCL. On the contrary, BPC has a decreased CV in quick ratio to the CV in current ratio which indicates that inventory is more volatile than other current assets of BPC.

Figure No.4.2



The graphical presentation of quick ratios shows that the quick ratio of BPC experienced a bulky drop in F/Y 2002/03 and since F/Y 2003/04 it has been decreasing gradually. In contrast, the current ratio of CHPCL has been increasing gradually since F/Y 2003/04.

4.1.2 Activity/Efficiency/Assets Management Ratios

Activity ratios also called Efficiency or Assets Management Ratios indicate the speed with which assets are being converted or turned over into sales. A proper balance between sales and assets generally reflects that assets are managed well. The following activity ratios are used to judge the effectiveness of assets utilization in this study.

Fixed Assets turnover Ratio (FATOR)

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 turnover ratio.

Table No.4.3

Calculation of Fixed Assets Turnover Ratio

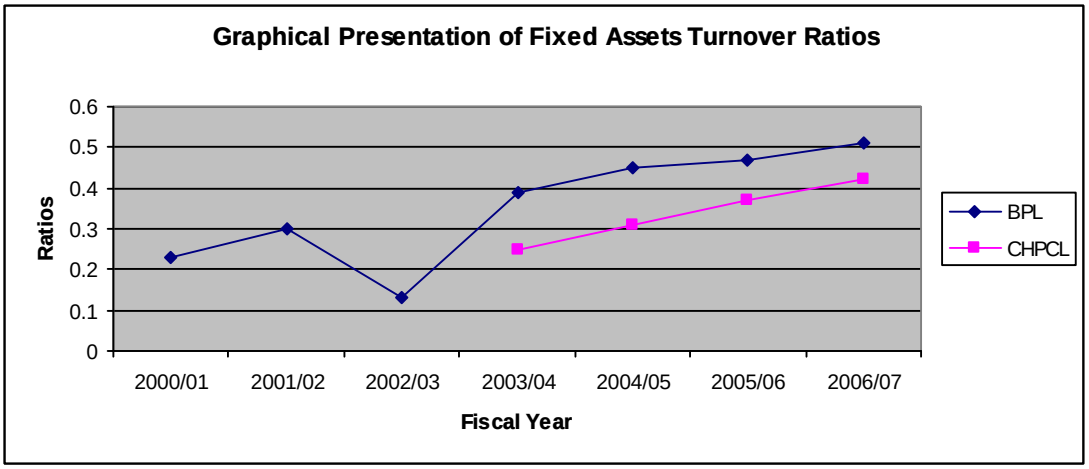
(In Thousand NRS.)

Fiscal Year	Sales		Fixed Assets		Ratios(Times)	
	BPC	CHPCL	BPC	CHPCL	BPC	CHPCL
2000/01	182,853		811,494		0.23	
2001/02	236,278		778,913		0.30	
2002/03	96,364		764,374		0.13	
2003/04	283,167	593,535	732,617	2,346,065	0.39	0.25
2004/05	323,134	692,026	714,334	2,258,523	0.45	0.31
2005/06	358,419	819,414	762,181	2,199,957	0.47	0.37
2006/07	379,769	903,540	745,004	2,133,934	0.51	0.42
				Mean($\overline{X}$)	0.354	0.337
				Standard Deviation(σ)	0.139	0.073
				Coefficient of Variation(CV) %	39.26	21.66

We can find an increasing trend of sales and decreasing trend of fixed assets, in both IPPs which also results in increasing trend of FATOR. Except in F/Y 2002/03, BPC has used its fixed assets quite adequately; generating an overall mean sale of Rs. 0.354 out of each rupee invested in fixed assets. CHPCL is also not far behind in generating not-so-modest sale at per rupee investment in fixed assets. It has a mean FATOR of 0.337 and CV of 21.66% which i8s also less than the CV of BPC. Thus, the volatility of ratios is

lower in CHPCL though it generates slightly fewer sales at per rupee invested in fixed assets.

Figure No. 4.3



The graphical presentation of FATOR shows that the FATOR of BPC experienced a bulky drop in F/Y 2002/03 and after a rapid recovery the next year, since then it has been increasing steadily. In contrast, the FATOR of CHPCL has been increasing steadily since the first year of its operation.

Total Assets Turnover Ratio (TATOR)

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

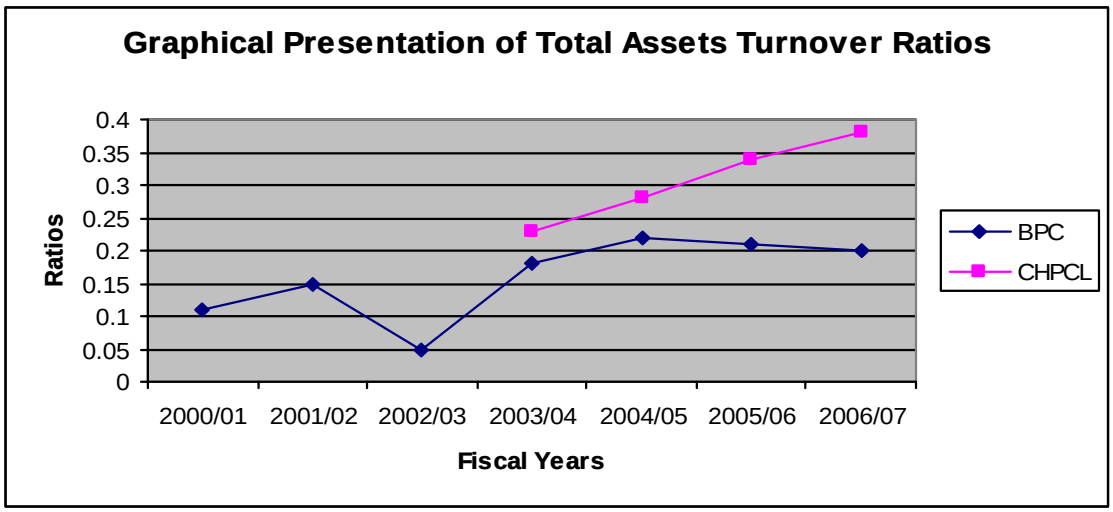
(In Thousand NRS.)

Fiscal Year	Sales		Total Assets		Ratios(Times)	
	BPC	CHPCL	BPC	CHPCL	BPC	CHPCL
2000/01	182,853		1,674,464		0.11	
2001/02	236,278		1,622,165		0.15	
2002/03	96,364		1,825,464		0.05	
2003/04	283,167	593,535	1,579,195	2,571,450	0.18	0.23
2004/05	323,134	692,026	1,439,238	2,457,402	0.22	0.28
2005/06	358,419	819,414	1,744,447	2,411,946	0.21	0.34

2006/07	379,769	903,540	1,882,271	2,379,605	0.20	0.38
				Mean($\overline{X}$)	0.160	0.307
				Standard Deviation(σ)	0.061	0.066
				Coefficient of Variation(CV) %	38.12	21.49

Above table reveals a fluctuating and unsatisfactory trend of TATOR of BPC with a mean of 0.160. In contrast, CHPCL has a better TATOR mean of 0.307 and a rather incremental trend. CHPCL also has less volatility in TATOR with compared to BPC which is indicated by its CV. Considering the results of FATOR and TATOR it can be concluded that BPC is utilizing its current assets inefficiently, or in order words, it has heavily invested in current assets. However, this also indicates that CHPCL has a weaker liquidity position with compared to BPC.

Figure No. 4.4



The graphical presentation of TATOR shows that the TATOR of BPC experienced a big drop in F/Y 2002/03 and after increasing rapidly for the next two years it has again dropped in F/Y 2005/06 and F/Y 2006/07. In contrast, the TATOR of CHPCL has been increasing steadily since the first year of its operation.

Inventory Turnover Ratio (ITR)

The inventory or Stock Turnover Ratio indicates the efficiency of the companies' inventory management. Generally, high inventory turnover is the indication of good inventory management. However, a relatively high inventory turnover causes overly low level of inventory and result frequent stock-out and is costly for the company.

Table No. 4.5

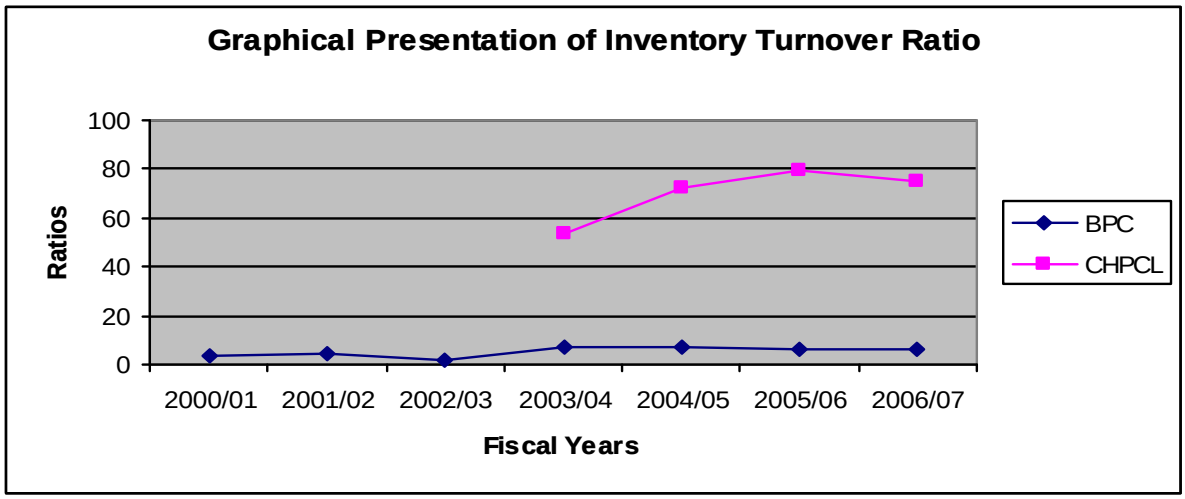
Calculation of Inventory Turnover Ratio

(In Thousand NRS.)

Fiscal Year	Sales		Closing Stock		Ratios(Times)	
	BPC	CHPCL	BPC	CHPCL	BPC	CHPCL
2000/01	182,853		48,358		3.78	
2001/02	236,278		50,137		4.71	
2002/03	96,364		43,985		2.19	
2003/04	283,167	593,535	41,766	11,121	6.78	53.37
2004/05	323,134	692,026	48,038	9,601	6.73	72.08
2005/06	358,419	819,414	57,623	10,296	6.22	79.59
2006/07	379,769	903,540	58,896	12,093	6.45	74.72
				Mean($\overline{X}$)	5.265	69.940
				Standard Deviation(σ)	1.766	11.476
				Coefficient of Variation(CV) %	33.54	16.40

Above table presents vast differences between the ITR of these two IPPs. The mean ITR of BPC (5.265) seems to be very trivial and unsatisfactory against the mean ITR of CHPCL (69.940). However, as already discussed, CHPCL is imposed to the threat of frequent stock-out with such a high ITR. But the risk of running out of inventory for CHPCL seems to be very much reduced by the stable trend of ITR shown by a low CV of 16.40%. In contrast, BPC with an unsatisfactory mean ITR unfortunately also has a higher volatility in its ratio which is shown by a CV of 33.54%.

Figure No. 4.5



The graphical presentation of ITRs shows that the ITR of BPC has remained very stable after a slight increase in F/Y 2003/04. In contrast, the ITR of CHPCL has increased steadily until it dropped in F/Y 2006/07.

Debtors Turnover Ratio (DTR)

The Debtors Turnover Ratio specifies the amount of transaction with debtors with a specified time period. This ratio indicates the velocity of debt collection of a company. In other words, it indicates the numbers of time average debtors are turned over during a year. Generally, high debtor's turnover is the indication of good receivable management.

Table No. 4.6

Calculation of Debtors Turnover Ratio

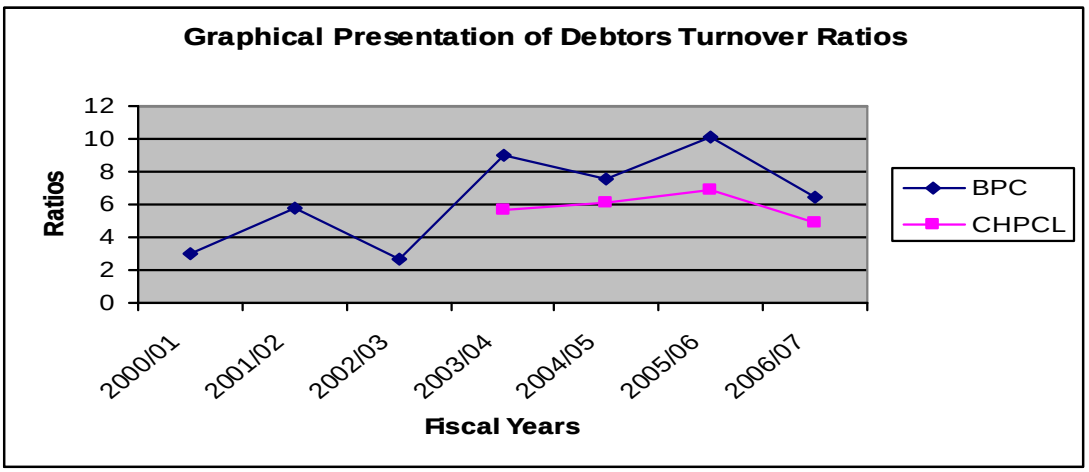
(In Thousand NRS.)

Fiscal Year	Sales		Closing Debtors		Ratios(Times)	
	BPC	CHPCL	BPC	CHPCL	BPC	CHPCL
2000/01	182,853		60,881		3.00	
2001/02	236,278		41,190		5.74	
2002/03	96,364		36,224		2.66	
2003/04	283,167	593,535	31,309	104,438	9.04	5.68
2004/05	323,134	692,026	42,921	112,295	7.53	6.16

2005/06	358,419	819,414	35,512	119,792	10.09	6.84
2006/07	379,769	903,540	58,918	183,960	6.45	4.91
				Mean($\overline{X}$)	6.358	5.897
				Standard Deviation(σ)	2.823	0.812
				Coefficient of Variation(CV) %	44.40	13.77

Above table reveals a fluctuating and trend of DTR of BPC and an increasing trend of DTR of CHPCL. Due to considerably increased amount of debtors, the DTR of BPC and CHPCL have dropped to 6.45 and 4.91 respectively after experiencing a high turnover last year. The mean DTR of BPC is slightly higher than that of CHPCL but CHPCL 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 CHPCL are 43.86% and 13.06% respectively.

Figure No. 4.6



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 CHPCL has increased steadily until it dropped in F/Y 2006/07.

Average Collection Period (ACP)

The Average collection Period provides the average turnover days receivable and outstanding, the average times it takes to covert 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. 4.7

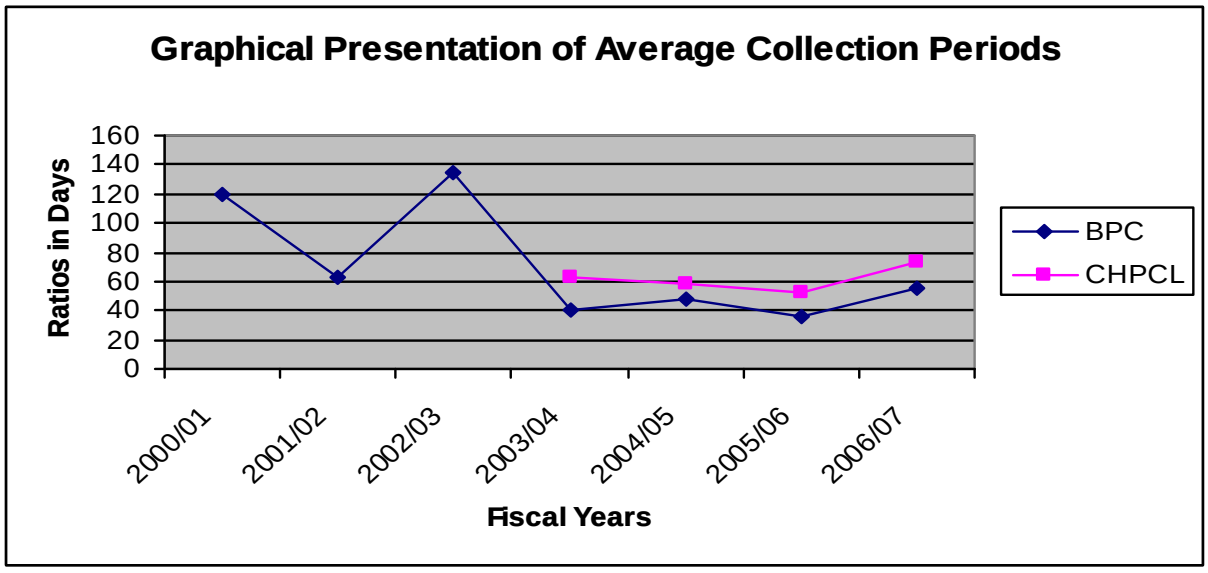
Calculation of Average Collection Period

(In Thousand NRS.)

Fiscal Year	Days in a Year	Debtors Turnover Ratio		ACP(Days)	
		BPC	CHPCL	BPC	CHPCL
2000/01	360	3.00		120	
2001/02	360	5.74		63	
2002/03	360	2.66		135	
2003/04	360	9.04	5.68	40	63
2004/05	360	7.53	6.16	48	58
2005/06	360	10.09	6.84	36	53
2006/07	360	6.45	4.91	56	73
Mean($\overline{X}$)				71	40
Standard Deviation (σ)				61.750	8.539
Coefficient of Variation(CV) %				86.97	21.34

Above table reveals a very fluctuating trend of ACP of BPC with a mean of 71 days. Last four fiscal years of BPC present a very recovering trend of ACP and more enthusiastic than that of CHPCL. However, CHPCL has a better overall ACP mean of 40 days and it also has less volatility in ratios presented by CV of 21.34. In contrast, BPC has a CV of 86.97% which indicates its instable trait of receivable management.

Figure No. 4.7



The graphical presentation of ACPs shows that the ACP of BPC experienced rapid ups and downs for the first four years of study and since then it has remained considerably consistent. In contrast, the ACP of CHPCL has decreased steadily until it increased in F/Y2006/07.

4.1.3 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.

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.

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.

Table No. 4.8

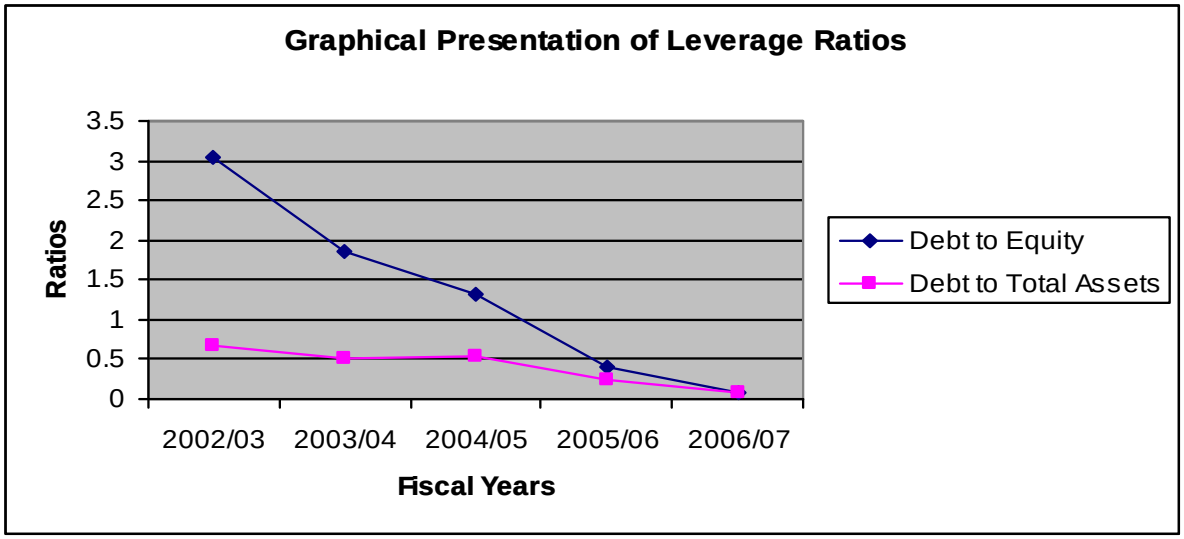
Calculation of Leverage Ratios

(In Thousand NRS.)

Fiscal Year	Total debt of CHPCL	Shareholders Equity of CHPCL	Total Assets of CHPCL	Leverage Ratios of CHPCL	
				Debt to Equity	Debt to Total Assets
2002/03	1,450,339	477,595	2,206,524	3.04	0.66
2003/04	1,329,567	716,800	2,571,450	1.85	0.52
2004/05	1,329,567	1,003,798	2,457,402	1.32	0.54
2005/06	591,000	1,493,470	2,411,946	0.40	0.25
2006/07	168,500	1,942,245	2,379,605	0.09	0.07
			Mean($\overline{X}$)	1.340	0.408
			Standard Deviation (σ)	1.182	0.241
			Coefficient of Variation (CV) %	88.20	59.06

Above table reveals a decreasing trend of leverage ratios of CHPCL. The debt to shareholders equity ratio has fallen from 3.04 to 0.09 in last five years due to continuously decrease in long -term debt and increase in shareholders equity. Similarly, the debt to total assets ratio has fallen from 0.66 to 0.07 in last five years.

Figure No.4.8



The graphical presentation of leverage ratios shows that the leverage ratios of CHPCL have been decreasing gradually through the study period. However, the decrease in debt to shareholders equity ratio is rapider than that of debt to total assets ratio.

4.1.4 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.

Net Profit Ratio (NPR)

The Net Profit Margin establishes the relationship between net profit and sales. The ratio measures the companies' ability to change each rupee sales into net profit. The ratio of net profit to sales shows the profitability of corporations indicating that the only increase

in sales does not mean anything unless it commands profit. From this ratio it can also be acquired the information of the total expenses incurred during a certain period of time.

Table No. 4.9

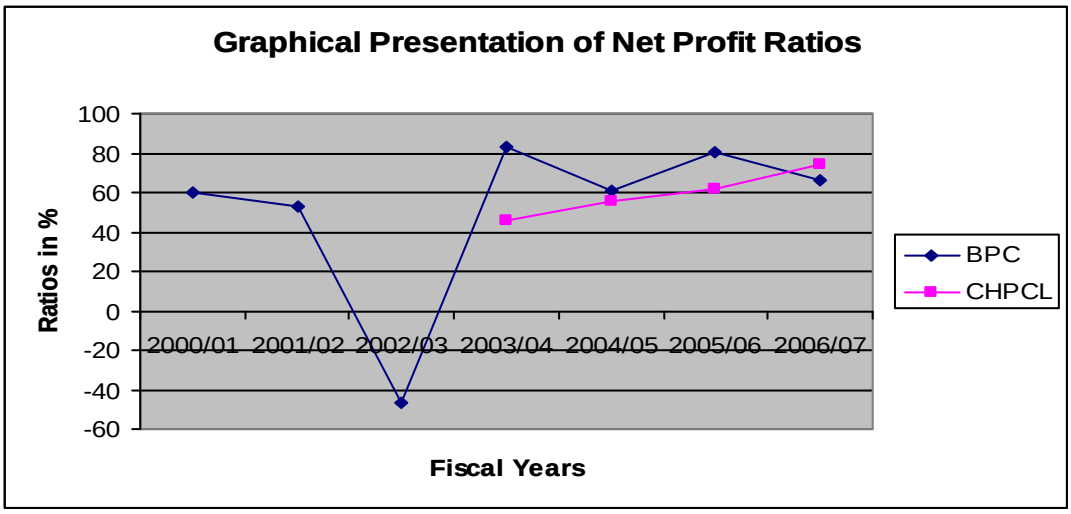
Calculation of Net Profit Ratio

(In Thousand NRS.)

Fiscal Year	Net Profit After Tax		Sales		Ratios (%)	
	BPC	CHPCL	BPC	CHPCL	BPC	CHPCL
2000/01	109,862		182,853		60.08	
2001/02	124,626		236,278		52.75	
2002/03	(44,944)		96,364		-46.64	
2003/04	235,418	273,825	283,167	593,535	83.14	46.13
2004/05	197,761	385,436	323,134	692,026	61.20	55.70
2005/06	288,419	507,758	358,419	819,414	80.47	61.97
2006/07	252,840	667,476	379,769	903,540	66.58	73.87
				Mean($\overline{X}$)	51.08	59.42
				Standard Deviation(σ)	44.47	11.63
				Coefficient of Variation(CV)	87.06	19.57

Above table reveals a fluctuating trend of NPR of BPC. In F/Y 2002/03, BPC has suffered a loss of 46.64% due to decreased sales. However, the NPR has remained admirable in later years with an overall mean ratio of 51.08%. In contrast, CHPCL has maintained a flourishing trend of NPR since the start of its financial operation with an overall mean ratio of 59.42%. It not only has a better mean ratio but also has comparatively less fluctuations in its NPR ratios than BPC. The CV with respect to NPR of BPC and CHPCL are 87.06% and 19.57% respectively.

Figure No.4.9



The graphical presentation of NPRs shows that after experiencing a massive drop in F/Y 2002/03 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 CHPCL has been increasing steadily since the first year of its operation.

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 favorable, 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

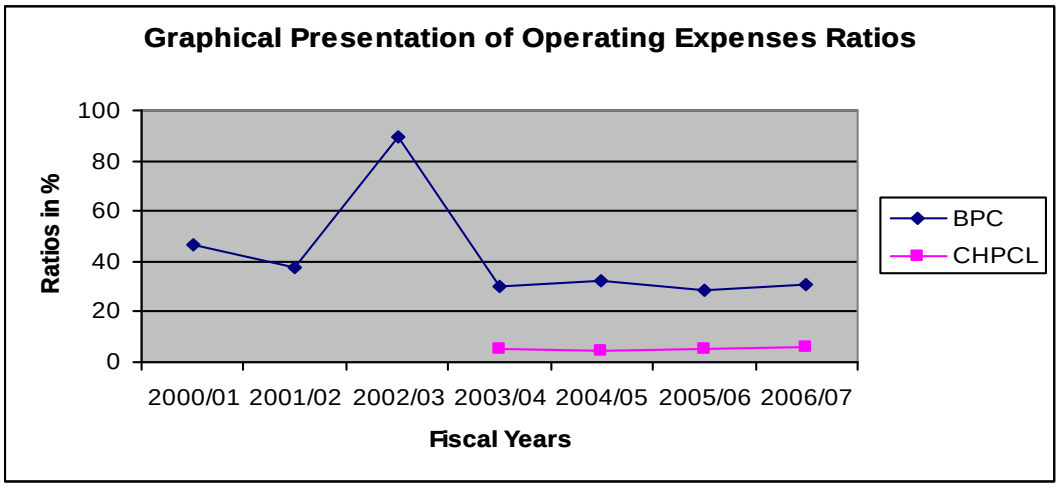
(In Thousand NRS)

Fiscal Year	Operating Expenses		Sales		Ratios (%)	
	BPC	CHPCL	BPC	CHPCL	BPC	CHPCL
2000/01	85,407		182,853		46.71	

2001/02	89,303		236,278		37.80	
2002/03	85,856		96,364		89.10	
2003/04	85,485	30,037	283,167	593,535	30.19	5.06
2004/05	104,799	33,379	323,134	692,026	32.43	4.82
2005/06	102,461	41,025	358,419	819,414	28.59	5.01
2006/07	116,642	54,088	379,769	903,540	30.71	5.99
				Mean($\overline{X}$)	42.22	5.22
				Standard Deviation(σ)	21.59	0.52
				Coefficient of Variation(CV) %	51.13	9.96

Above table reveals a fluctuating trend of OER of BPC with a range of 60.49% and mean ratio of 42.22%. After F/Y 2002/03, BPC has been able to maintain a decreasing trend of OER around 30%. In contrast, CHPCL has maintained an admirably low and consistent trend of OER with a mean ratio of 5.22% and CV of 9.96%. These ratios indicate that BPC has considerably high operating costs with compared to CHPCL. The rate of fluctuation in ratios is also very high in BPC with a CV of 51.13%.

Figure No.4.10



The graphical presentation of OERs shows that after a huge increase in F/Y 2002/03, 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 CHPCL has remained much stable since the first year of its operation.

Return on Shareholders Equity (ROE)

Return on Shareholders Equity is the most commonly used ratio for measuring the return on owners' investment. It is the proportion of net income after tax to shareholders equity. Higher ROE is favorable as it indicates higher return for shareholders at each rupee of investment.

Table No. 4.11

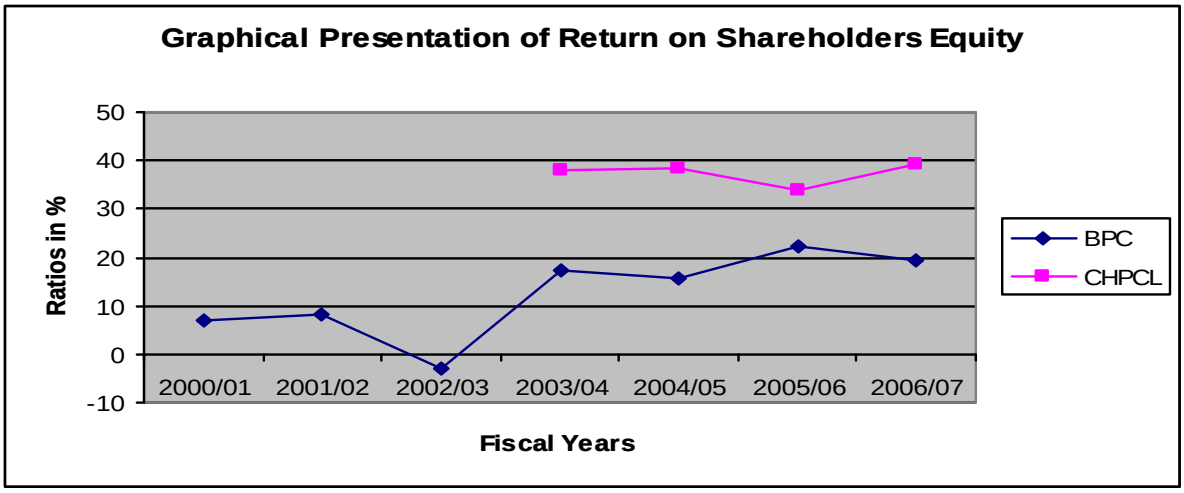
Return on Shareholders Equity

(In Thousand NRS.)

Fiscal Year	Net Profit After Tax		Shareholders Equity		Ratios (%)	
	BPC	CHPCL	BPC	CHPCL	BPC	CHPCL
2000/01	109,862		1,557,114		7.06	
2001/02	124,626		1,515,075		8.23	
2002/03	(44,944)		1,537,645		(2.92)	
2003/04	235,418	273,825	1,345,784	716,800	17.49	38.20
2004/05	197,761	385,436	1,254,669	1,003,798	15.76	38.40
2005/06	288,419	507,758	1,300,568	1,493,470	22.18	34.00
2006/07	252,840	667,476	1,294,863	1,694,427	19.53	39.39
				Mean($\overline{X}$)	12.48	37.50
				Standard Deviation(σ)	8.80	2.39
				Coefficient of Variation(CV) %	70.51	6.37

Above table reveals a fluctuating trend of ROE of BPC with a mean ratio of 12.18%. In F/Y 2002/03, BPC has suffered a negative ROE of 2.92% due to a loss of Rs. 44,944. However, after that the ROE has been satisfactory revolving around 20%. In contrast, CHPCL has maintained considerably higher and stable trend of ROE with an overall mean ratio of 37.50% and CV of 6.37%.BPC, with a lower mean ratio of ROE and higher CV of ratios proves to be less attractive than CHPCL to shareholders.

Figure No.4.11



The graphical presentation of ROE ratios shows that the ROE of BPC dropped in F/Y 2002/03; however it recovered profusely the following year. Since F/Y 2003/04, the ROE of both IPPs has been experiencing small ups and downs in their ROE.

Return on Total Asset (ROTA)

Return on Total Assets records the relationship between total assets and net profit. It is the rate of return earned by the company and whole for all its investments including the lenders. Higher return on total assets ratio shows higher earning of the company in terms of its total assets. Lower return on total assets ratio indicates unsound financial position due to low level of return.

Table no. 4.12

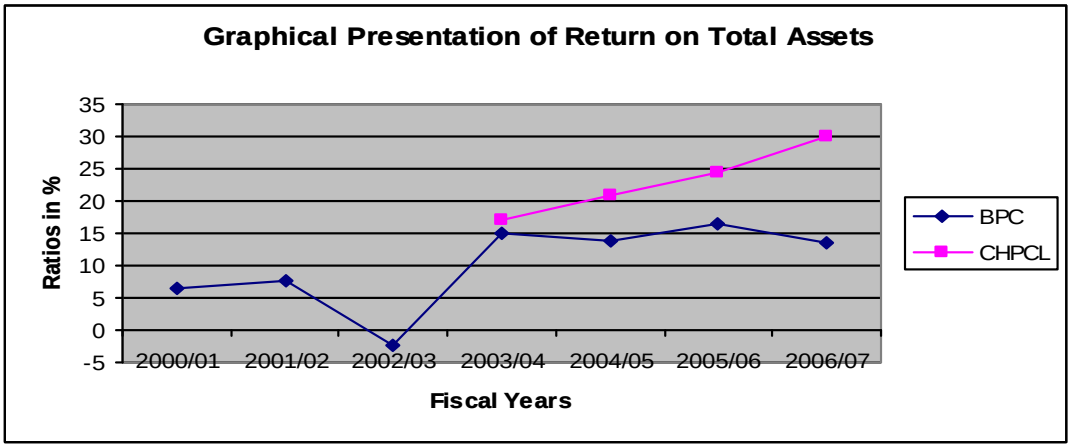
Calculation of return on Total Assets

(In Thousand NRS.)

Fiscal Year	Net Profit + Interest		Total Assets		Ratios (%)	
	BPC	CHPCL	BPC	CHPCL	BPC	CHPCL
2000/01	109,862		1,674,464		6.56	
2001/02	124,626		1,622,165		7.68	
2002/03	(44,944)		1,825,464		(2.46)	
2003/04	235,418	436,520	1,579,195	2,571,450	14.91	16.98
2004/05	197,761	512,575	1,439,238	2,457,402	13.74	20.86
2005/06	288,419	589,321	1,744,447	2,411,946	16.53	24.43
2006/07	252,840	712,501	1,882,271	2,379,605	13.43	29.94
				Mean($\overline{X}$)	10.06	23.05
				Standard Deviation(σ)	6.65	5.51
				Coefficient of Variation(CV) %	66.10	23.90

Above table reveals a fluctuating trend of ROTA of BPC with in a mean of 10.06%. BPC does not carry loan burden and therefore does not include interest calculation while computing ROTA. In F/Y 2002/03, BPC has suffered a negative ROTA of 2.46% due to a loss of Rs. 44,944. However, thereafter the ROTA with has been satisfactory. In contrast, CHPCL has maintained increasing trend of ROTA with an overall mean ratio of 23.05% and it also has more stability in ratios which is indicated by a CV of 23.90%. BPC, with a lower mean ratio of ROTA and higher CV of ratios proves to be less attractive than CHPCL to investors and lenders.

Figure No. 4.12



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 its ROTA. In contrast, the ROTA of CHPCL has been increasing steadily since the first year of its operation.

4.1.5 Invisibility Ratio

An analysis of Invisibility Ratio helps the investors to know the performance of the companies. If the companies' liquidity, profitability, leverage and utilization ratios are good, its market value ratios will be high and its stock price will be probably be as high as can be expected.

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 position of the companies.

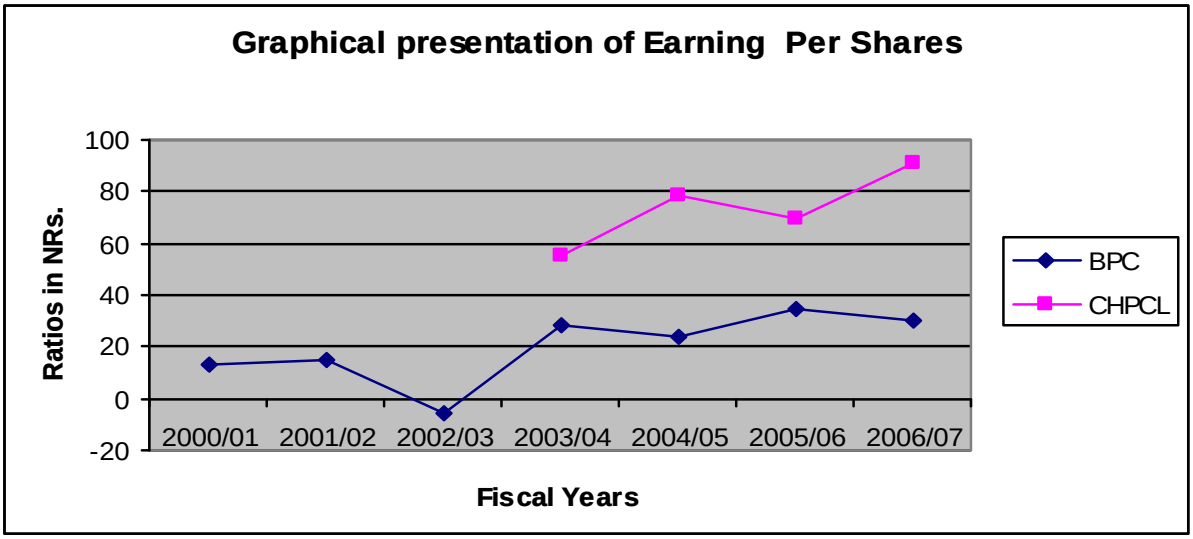
Table No.4.13

Calculation of Earning Per Share

Fiscal Year	Earnings After Tax		No. of Equity shares		Rs	
	BPC	CHPCL	BPC	CHPCL	BPC	CHPCL
2000/01	109,862,121		8,390,580		13.09	
2001/02	124,626,123		8,390,580		14.85	
2002/03	(44,944,141)		8,390,580		(5.36)	
2003/04	235,418,698	273,825,041	8,390,580	4,921,950	28.06	55.63
2004/05	197,761,775	385,436,892	8,390,580	4,921,950	23.57	78.31
2005/06	288,418,689	507,758,712	8,390,580	7,296,000	34.37	69.59
2006/07	252,839,960	667,476,963	8,390,580	7,296,000	30.13	91.49
				Mean($\overline{X}$)	19.82	73.76
				Standard Deviation(σ)	13.56	15.07
				Coefficient of Variation(CV) %	68.41	20.43

We can find huge differences between the fluctuating trends of EPS of BPC and CHPCL. While BPC is yielding a satisfactory mea EPS of Rs. 19.82, CHPCL is yielding an excellent mean EPS of Rs. 73.76. In F/y 2002/03, BPC has suffered a negative EPS of Rs.5.36 due to a loss of Rs. 44,944. However, thereafter the EPS of BPC ha been much better revolving around Rs. 30. On the other hand, CHPCL not only has a three times greater EPS than that of BPC but also has three times les variability in ratios. The CV with respect to EPS of BPC and CHPCL are Rs.68.41% and 20.43% respectively.

Figure No.4.13



The graphical presentation of EPS ratios shows that the EPS of BPC dropped in F/Y 2002/03; however it recovered profusely the following year. Since F/Y 2003/04, the EPS of BPC has been experiencing small ups and down in its EPS. In contrast, the EPS of CHPCL has been experiencing bigger ups and downs in its EPS.

Dividend Per Share (DPS)

Dividend per Share is the measure of profitability. This ratio shows the rupee earning actually distributed to common stock holders per share held by them. High ratio is favorable for the shareholders.

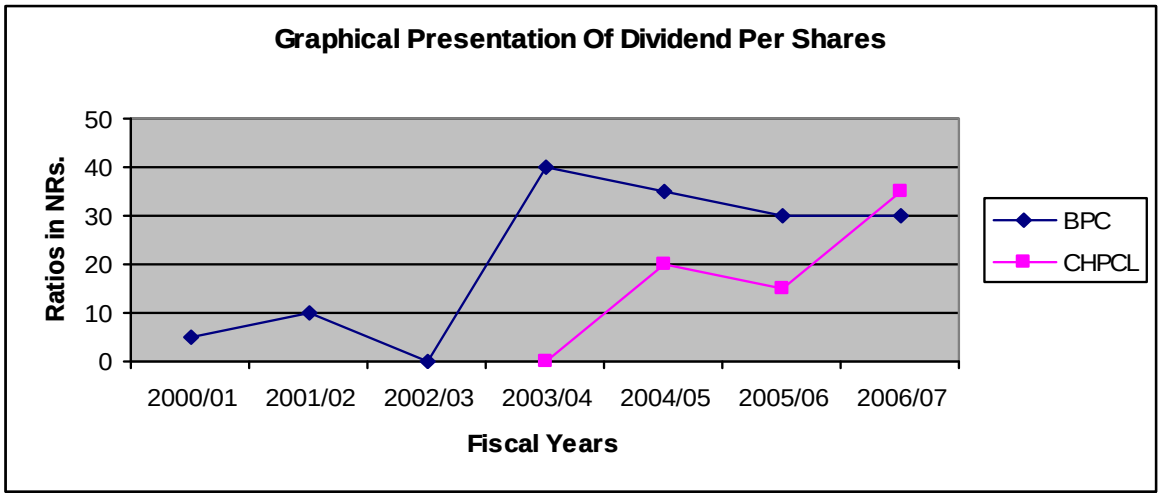
Table No.4.14

Calculation of Dividend Per Share

Fiscal Year	Total Distribution Dividend		No. of Equity shares		Rs	
	BPC	CHPCL	BPC	CHPCL	BPC	CHPCL
2000/01	41,952,900		8,390,580		5	
2001/02	83,905,800		8,390,580		10	
2002/03	0		8,390,580		0	
2003/04	335,623,200	0	8,390,580	4,921,950	40	0
2004/05	293,670,300	98,439,000	8,390,580	4,921,950	35	20
2005/06	251,718,000	109,409,700	8,390,580	7,296,000	30	15
2006/07	251,635,000	255,289,300	8,390,580	7,296,000	30	35
				Mean($\overline{X}$)	21.42	17.50
				Standard Deviation(σ)	15.99	14.43
				Coefficient of Variation(CV) %	74.65	82.45

The amounts of dividends for F/Y 2006/07 are proposed dividend not distributed. However, Rs. 41,871,000out of total dividend for F/Y 2006/07 of BPC has been paid arising from F/Y 2000/01. Above table reveals fluctuating trend of DPS of both the IPPs. In F/Y 2002/03, BPC has not distributed any dividend due to a loss of Rs. 44,944. While, the DPS of BPC of last four years has been decreasing the DPS of CHPCL is rising very high to Rs 35. However, the mean DPS for the investors of both IPPs remains around Rs 20. The CV with respect to DPS of BPC and CHPCL are 74.65% and 82.45% respectively which indicates high fluctuation in DPS of both the IPPs.

Figure No.4.14



The graphical presentation of DPS ratios shows that both IPPs have been experiencing highly fluctuating DPS ratios through the study period. The EPS of BPC dropped to 0% in F/Y 2002/03; however it jumped on 40% the following year. The DPS ratio of BPC can be considered much stable than that of CHPCL for the last four years.

Dividend Payout Ratio (DPR)

This ratio can be obtained dividing dividend per share by earning per share. It determines the position of per share dividend paid, out of per share earning. The higher ratio is better to the shareholders. It builds faithfulness of the investors towards the companies.

Table No. 4.15

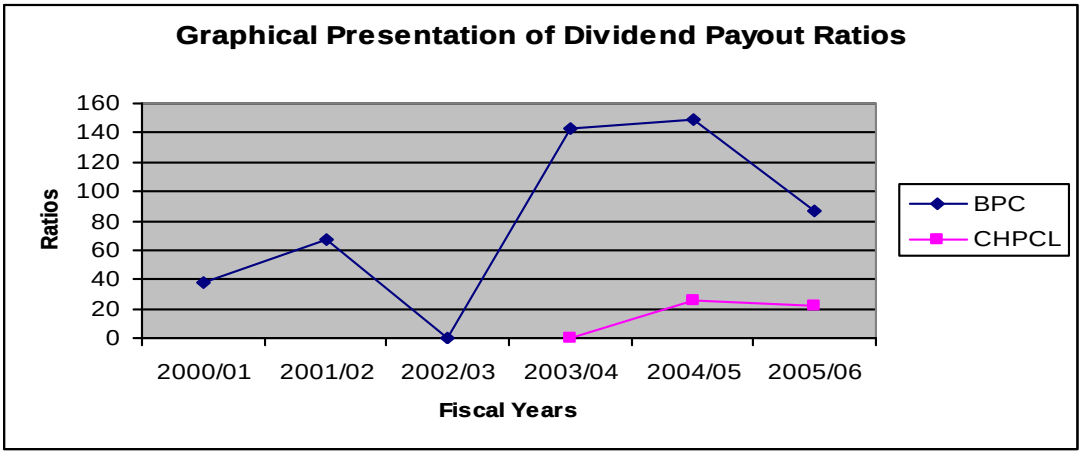
Calculation of Dividend Payout Ratio

Fiscal Year	Dividend Per Share		Earning Per Share		Ratios (%)	
	BPC	CHPCL	BPC	CHPCL	BPC	CHPCL
2000/01	5		13.09		38.20	
2001/02	10		14.85		67.34	
2002/03	0		(5.36)		0	
2003/04	40	0	28.06	55.63	142.55	0
2004/05	35	20	23.57	78.31	148.49	25.54
2005/06	30	15	34.37	69.59	87.29	21.55

Mean($\overline{X}$)	80.65	15.70
Standard Deviation(σ)	54.24	13.74
Coefficient of Variation(CV) %	67.25	87.52

Above table reveals fluctuating trend of DPR of both the IPPs. In F/Y 2002/03, BPC has not distributed any dividend due to a loss of Rs. 44,944. The DPR of last three years has been much luring to the investors of BPC revolving around 120%. On the contrary, CHPCL shows tight payout ratio of dividend of dividends which is around 15%. The CV with respect to DPS of BPC and CHPCL are 67.25% and 87.52% respectively.

Figure No. 4.15



The graphical presentation of DPRs ratios shows that BPC has been experiencing highly fluctuating DPR through the study period. The DPR of BPC dropped to 0% in F/Y 2002/03; however it jumped on 142% the following year. The DPR ratio of CHPCL can be considered much stable than that of BPC for the last three years.

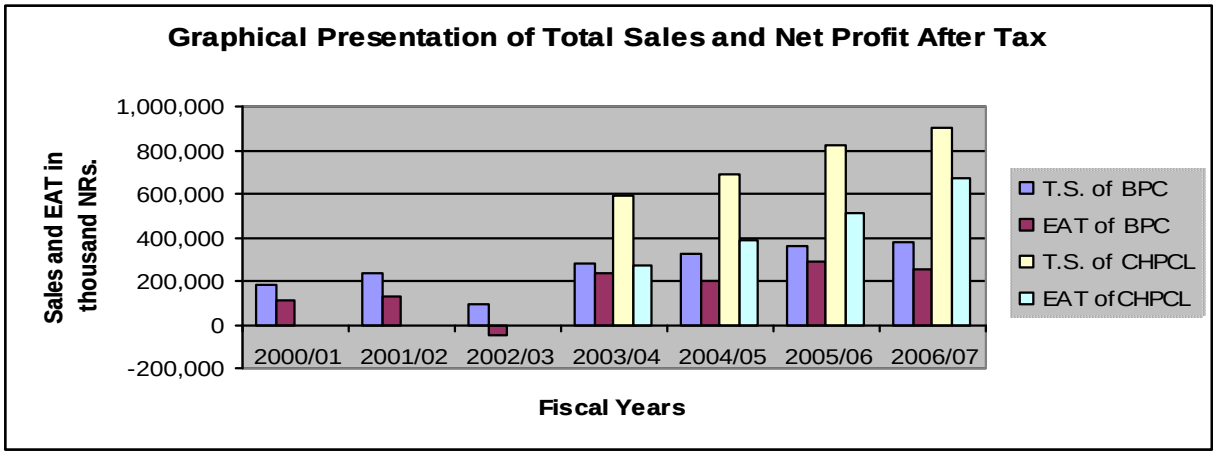
4.1.6 Correlation Analysis

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

Correlation between Total Sales and Net Profit After Tax

The Coefficient of Correlation between Total Sales and Net Profit after Tax of both IPPs for the different sampled years has been calculated in Appendix A.

Figure No.4.16



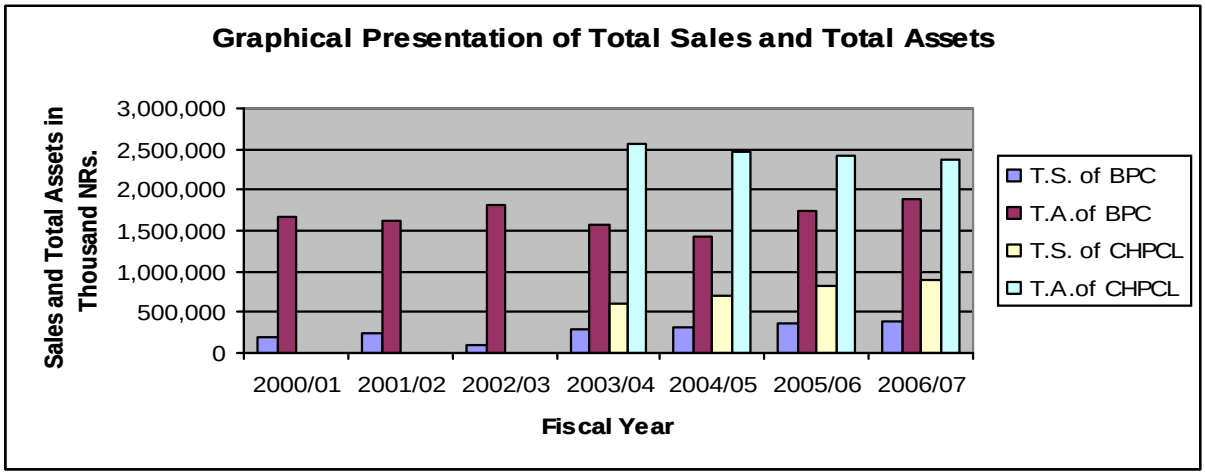
The coefficient of correlation between sales (X) and Net Profit After Tax (Y) of BPC and CHPCL came to be 0.952 and 0.990 respectively. This suggests that the two variables have strong positive relation to each other and, CHPCL is slightly more successful than BPC to be able to yield more uniform profits out of its sales.

Coefficient of correlation in BPC appeared greater than six times of PE, i.e. $0.952>6\times0.014$, which implies that the relation between sales and net profit after tax was positive at significant level. Similarly, coefficient of correlation in CHPCL also appeared greater than six times of PE, i.e. $0.990>6\times0.007$, which implies that the relation between sales and net profit after tax is positive at significant level

Correlation between Total sales and Total Assets

The Coefficient of correlation between Total Sales and Total Assets of both IPPs for the different sampled years has been calculated in Appendix A.

Figure No.4.17



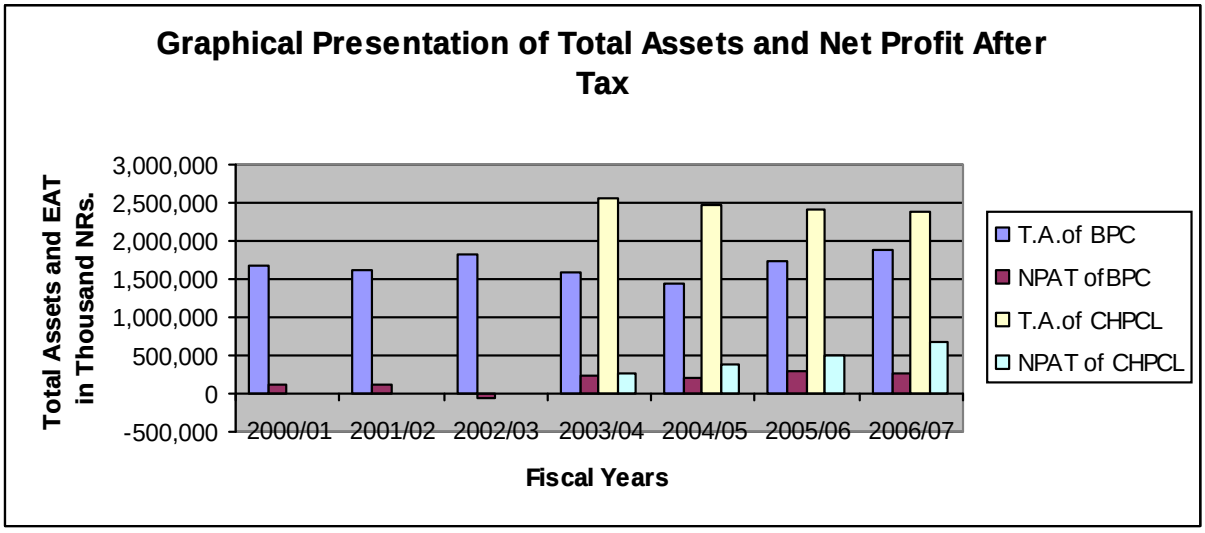
The coefficient of correlation between sales (X) and Total Assets (Y) of BPC and CHPCL came to be -0.098 and -0.956 respectively. This suggests that the two variables have negative relation to each other and, increase in sales have mire adverse effect on total assets of CHPCL than on total assets of BPC.

However, coefficient of correlation in BPC appeared less than six times of PE, i.e.-0.098<6×0.252, which implies that the relation between sales and total assets is not at significant level. Similarly, coefficient of correlation in CHPCL also appeared less than six time of PE, i.e.-0.956<6×0.029, which implies that the relation between sales and total assets is not at significant level.

Correlation between Total assets and Net Profit After Tax

The coefficient of correlation between Total Assets and Net Profit After Tax of both IPPs for the different sampled years has been calculated in Appendix A.

Figure No.4.18



The coefficient of correlation between Total Assets (X) and Net Profit after Tax (Y) of BPC and CHPCL came to be -0.166 and -0.931 respectively. 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 CHPCL more than in net profit after tax of BPC.

However, coefficient of correlation in BPC appeared less than six times of PE, i.e.-0.166<6×0.248, which implies that the relation between total assets and net profit after tax is not at significant level. Similarly, coefficient of correlation in CHPCL also appeared less than six times of PE, i.e. -0.931<6×0.045, which implies that the relation between sales and total assets is not at significant level.

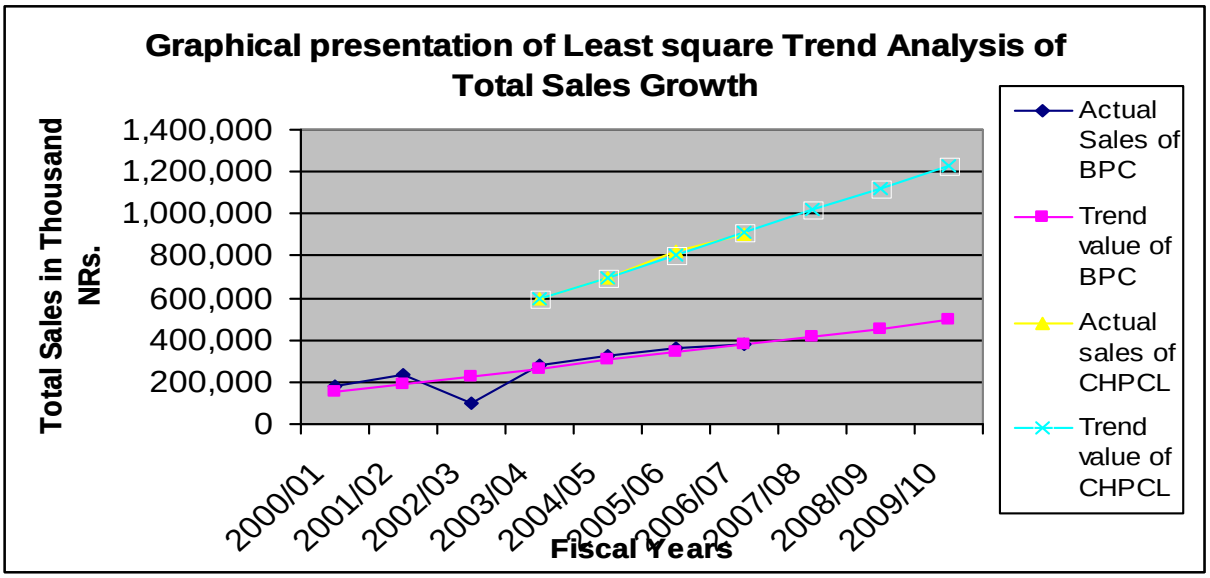
4.1.7 Least Square Linear Growth Trend Analysis

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

Least Square Trend Analysis of Total Sales Growth

Least Square Trend Analysis of Total sales of Growth of both IPPs for the different sampled years have been calculated in Appendix B.

Figure No. 4.19



The Y-intercept (a) and slope of the trend line (b) of total sales of BPC remained to be Rs. 265,712 and Rs.37, 921.43 respectively. During the study period, total sales of BPC exposed an increasing trend. The trend equation of total sales is given by:

$Y_c = 265,712 + 37,921.43X$

According to the above trend equation, the forecasted values of total sales of BPC for coming three years would be Rs. 417,397.72, Rs. 455,319.15 and Rs. 493,240.58 thousand respectively.

Similarly, the Y-intercept (a) and slope of the trend line (b) of total sales of CHPCL remained to be Rs. 752,128.75 and Rs. 105,740.20 respectively. During the study period, total sales of CHPCL exposed an increasing trend. The trend equation of total sales is given by:

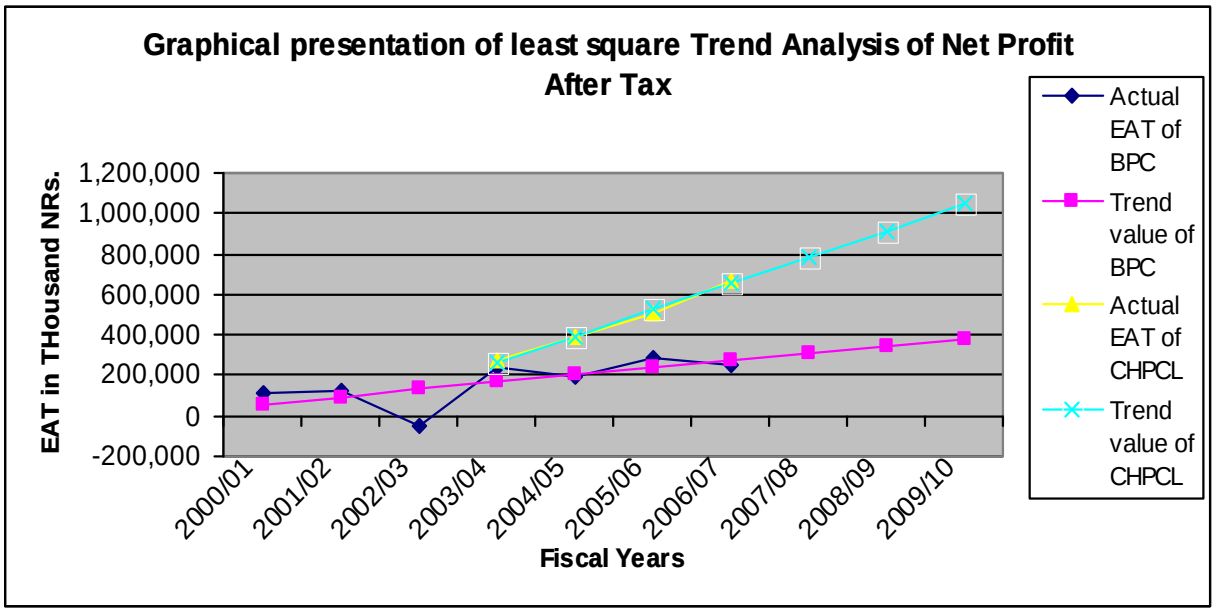
$Y_c = 752,128.75 + 105,740.20X$

According to the above trend equation, the forecasted values of total sales of CHPCL for coming three years would be Rs 1,016,479.25, Rs. 1,122,219.45 and Rs. 1,227,959.65 thousand respectively.

Least Square Trend Analysis of Net Profit after Tax Growth

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

Figure No. 4.20



The Y-intercept (a) and slope of the trend line (b) of net profit after tax of BPC remained to be Rs. 166,283.14 and Rs. 35,686.61 respectively. During the study period, total sales of BPC exposed an increasing trend. The trend equation of total sales is give by:

Y_c = 166,283.14 +35,686.61X

According to the above equation, the forecasted values of net profit after tax of BPC for coming three years would be Rs. 309,029.58, Rs.344, 716.19 and Rs. 380,402.80 thousand respectively.

Similarly, the Y-intercept (a) and slope of the trend line (b) of net profit after tax of CHPCL remained to be Rs.458, 623.75 and Rs. 130,327.5 respectively. During the study period, net profit after tax of CHPCL exposed an increasing trend. The trend equation of total sales is given by:

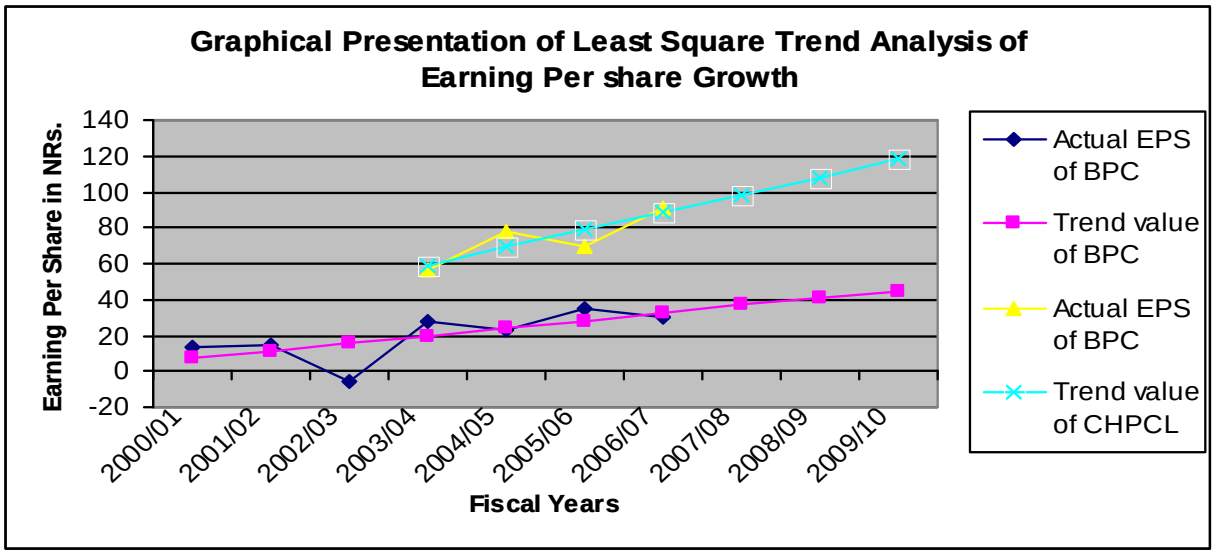
Y_c =458,623.75 +130,327.5X

According to the above trend equation, the forecasted values of net profit after tax of CHPCL for coming three years would be Rs 784,442.50, Rs. 914,770 and Rs. 1,045,097.50 thousand respectively.

Least Square Trend Analysis of Earning Per Share Growth

Least square Trend Analysis of Earning Per Share Growth of both IPPs for the different sampled years has been calculated in appendix B.

Figure No.4.21



The Y-intercept (a) and slope of the trend line (b) of earning per share of BPC remained to be Rs.19.82 and Rs4.25 respectively. During the study period, EPS of BPC exposed an increasing trend. The trend equation of EPS is given by:

Y_c =19.82 + 4.25X

According to the above trend equation, the forecasted values of EPS of BPC for coming three years would be Rs.36.82, Rs.41.07 and Rs.45.32 respectively.

Similarly, the Y-intercept (a) and slope of the trend line (b) of earning per share of CHPCL remained to be Rs.73.76 and Rs.9.89 respectively. During the study period, EPS of CHPCL exposed an increasing trend. The trend equation of EPS is given by:

$Y_c = 73.76 + 9.89 X$

According to the above trend equation, the forecasted values of EPS of CHPCL for coming three years would be Rs.98.49, Rs.108.38 and Rs.118.27 respectively.

4.2 Presentation of Data from Primary Sources

This section includes the information related with the study from primary sources. Primary data were obtained through conversation and interview made with the engineers and managerial officials of both IPPs. The presentation and analysis of these primary data are given below.

4.2.1 ROE as a Measure of Performance

To know the respondents' view if ROE shows the performance of the selected IPPs, a question was asked," Does ROE show the performance of your company?" The responses provided by respondents are tabulated below:

Table No.16

Group	Yes	No	Total
Executives	8	2	10
Non-executives	17	3	20
Total	25	5	30

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_o): ROE shows the performance of the selected IPPs.
- Alternative hypothesis (H_1): ROE does not show the performance of the selected IPPs.

Test Statistics: Under H_o, the test statistic is: $\chi^2 = \frac{(O - E)^2}{E}$

Row Column	O	E	O-E	$(O-E)^2$	$(O-E)^2$ /E
1,1	8	8.333	-0.333	0.111	0.013
1,2	2	1.667	0.333	0.111	0.067
2,1	17	16.667	0.333	0.111	0.007
2,2	3	3.333	-0.333	0.111	0.033
				Total	0.120

Here, calculated $\chi^2 = 0.120$

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

A = 5%

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

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

4.2.2 Performance Evaluation through Ratio Analysis

To know the respondents' view if ratio analysis is used to measure performance in the selected IPPs, a question was asked, "Is ratio analysis used to measure performance in your company?"

The responses provided by respondents are tabulated below:

Table No. 17

Group	Yes	No	Total
Executives	10	0	10
Non-executives	15	5	20
Total	25	5	30

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 (Ho): ratio analysis is used to measure performance in the selected IPPs.
- Alternative hypotheses (H_1): ratio analysis is not used to measure performance in the selected IPPs.

Test Statistics: Under $H_{o,}$ the test statistic is: $\chi^2 = \frac{(O \, Z E)^2}{E}$

Row Column	O	E	O-E	$(O-E)^2$	$(O-E)^2$ /E
1,1	10	8.333	1.667	2.779	0.333
1,2	0	1.667	-1.667	2.779	1.667
2,1	15	16.667	-1.667	2.779	0.167
2,2	5	3.333	1.667	2.779	0.834
				Total	3.001

Here, calculated $\chi^2 = 3.001$

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

α=5 %

Tabulated value of χ^2 0.05 (1) =3.841

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

4.2.3 Adequacy of Government Assistance to the IPPs in Nepal

To know the respondents' view about the adequacy of government assistance to the IPPs in Nepal, a question was asked, "Has government provided adequate assistance to your company?"

The responses provided by respondents are tabulated below:

Table No.18

Group	Yes	No	Total
Executives	6	4	10
Non-executives	12	8	20
Total	18	12	30

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 (Ho): there is adequate government assistance to the IPPs in Nepal.
- Alternative hypotheses (H_1): there is not adequate government assistance to the IPPs in Nepal.

Test Statistics: Under $H_{o,}$ the test statistic is: $\chi^2 = \frac{(O \, Z E)^2}{E}$

Row Column	O	E	O-E	$(O-E)^2$	$(O-E)^2$ /E
1,1	6	6	0	0	0
1,2	4	4	0	0	0
2,1	12	12	0	0	0
2,2	8	8	0	0	0
				Total	0

Here, calculated χ^2 =0.120

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

α= 5%

Tabulated value of χ^2 0.05 (1) =3.841

Conclusion: Since the calculated value of χ^2 is less than the tabulated value of χ^2, Ho is accepted which means that there is adequate government assistance to the IPPs in Nepal. From the above test we can conclude that there is adequate government assistance to the IPPs in Nepal.

4.2.4 Comparison of 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," Is 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.19

Group	Yes	No	Total
Executives	7	3	10
Non-executives	15	5	20
Total	22	8	30

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 (Ho): the level of return presently obtained from IPPs is higher than the expectation of investors.
- Alternatives hypotheses (H_1): the level of return presently obtained from IPPs is not higher than the expectation of investors.

Test Statistics: Under $H_{o,}$ the test statistic is: $\chi^2 = \frac{(O \, Z E)^2}{E}$

Row Column	O	E	O-E	$(O-E)^2$	$(O-E)^2$ /E

1,1	7	7.333	-0.333	0.111	0.015
1,2	3	2.667	0.333	0.111	0.042
2,1	15	14.667	0.333	0.111	0.008
2,2	5	5.333	-0.333	0.111	0.021
				Total	0.086

Here, Calculated χ^2 =0.120

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

α= 5 %

Tabulated value of χ^2 0.05 (1) =3.841

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

4.2.5 Role of Whim and Rumors in Influencing stock Prices of IPPs

To know the view-point of respondents about the influence of whim and rumors in influencing stock prices, a question was asked, “Do you think that the stock prices of IPPs are influenced by whim and rumors rather than profitability reasons?”

The responses received from the respondents are tabulated below:

Table No.20

Group	Yes	No	Total
Executives	6	4	10
Non-executives	10	10	20
Total	16	14	30

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 (Ho): the stock prices of IPPs are influenced by whim and rumors rather than profitability reasons.
- Alternative hypotheses (H_1): the stock prices of IPPs are not influenced by whim and rumors rather than profitability reasons.

Test Statistics: Under $H_{o,}$ the test statistic is: $\chi^2 = \dfrac{(O - E)^2}{E}$

Row Column	O	E	O-E	$(O-E)^2$	$(O-E)^2$ /E
1,1	6	5.333	0.667	0.445	0.083
1,2	4	4.667	-0.667	0.445	0.095
2,1	10	10.667	-0.667	0.445	0.042
2,2	10	9.333	0.667	0.445	0.048
				Total	0.268

Here, calculated $\chi^2 = 0.120$

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

α= 5 %

Tabulated value of χ^2 0.05 (1) = 3.841

Conclusion: Since the calculated value of χ^2 is less than the tabulated value of χ^2, Ho is accepted which means that the stock prices of IPPs are influenced by whim and rumors rather than profitability reasons. From the above test we can conclude that personnel think that the stock prices of IPPs are influenced by whim and rumors rather than profitability reasons.

4.3 Major Findings

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

4.3.1 Major Findings from Secondary Sources

The current ratios of BPC remained respectively 4.79, 5.30, 1.99, 2.29, 2.16, 1.25 and 1.19 throughout the seven year study period. The mean and CV of current ratios of BPC came to be 2.710 and 61.14%. Similarly, the current ratios of CHPCL remained 1.81, 0.29, 0.44, 0.63 and 0.90 respectively throughout the five year study period. The mean and CV of current ratios of CHPCL came to be 0.814 and 73.83%.

The quick ratios of BPC remained 4.08, 4.37, 1.83, 2.09, 1.85, 1.12 and 1.09 respectively throughout the seven year study period. The mean and CV of quick ratios of BPC came to be 2.347 and 57.05%. Similarly, the quick ratios of CHPCL remained 1.78, 0.27, 0.41, 0.60, and 0.85 respectively throughout the five year study period. The mean and CV of quick ratios of CHPCL came to be 0.782 and 76.47%.

The FATORs of BPC remained 0.23, 0.30, 0.13, 0.39, 0.45, 0.47 and 0.51 respectively throughout the seven year study period. The mean and CV of FATORs of BPC came to be 0.354 and 39.26%. Similarly, the FATORs of CHPCL remained 0.26, 0.31, 0.37 and 0.42 respectively throughout the four year study period. The mean and CV of FATORs of CHPCL came to be 0.337 and 21.66%.

The TATORs of BPC remained 0.11, 0.15, 0.05, 0.18, 0.22, 0.21 and 0.20 respectively throughout the seven year study period. The mean and CV of TATORs of BPC came to be 0.160 and 38.12%. Similarly, the TATORs of CHPCL remained 0.23, 0.28, 0.34 and 0.38 respectively throughout the four year study period. The mean and CV of TATORs of CHPCL came to be 0.307 and 21.49%.

The ITRs of BPC remained 3.78, 4.71, 2.19, 6.78, 6.73, 6.22 and 6.45 respectively throughout the seven year study period. The mean and CV of ITRs of BPC came to be 5.265 and 33.54%. Similarly, the ITRs of CHPCL remained 53.37, 72.08, 79.59 and 74.72 respectively throughout the four year study period. The mean and CV of ITRs of CHPCL came to be 69.940 and 16.40%.

The DTRs of BPC remained 3.00, 5.74, 2.66, 9.04, 10.09 and 6.45 respectively throughout the seven year study period. The mean and CV of DTRs of BPC came to be 6.358 and 44.40%. Similarly, the DTRs of CHPCL remained 5.68, 6.16, 6.84 and 4.91 respectively throughout the four year study period .The mean and CV of DTRs of CHPCL came to be 5.897 and 13.77%.

The ACPs of BPC remained 120, 63, 135, 40, 48, 36 and 56 respectively throughout the seven year study period. The mean and CV of ACPs of BPC came to be 71 days and 86.97%.Similarly, the ACPs of CHPCL remained 63, 58, 53 and 73 respectively throughout the four year study period. The mean and CV of ACPs of CHPCL came to be 40 days and 21.34%.

The debt to shareholders equity of CHPCL remained 3.04, 1.85, 1.32, 0.40 and 0.09 respectively throughout the five year study period. The mean and CV of debt to shareholders equity of CHPCL came to be 1.340 and 88.20%. Similarly, the debt to total assets ratios of CHPCL remained 0.66, 0.52, 0.54, 0.25 and 0.07 respectively throughout the five year study period. The mean and CV of debt to total assets ratios of CHPCL came to be 0.408 and 59.06%.

The NPRs of BPC remained 60.06%, 52.75%, -46.64%, 83.14%, 80.47% and 66.58% respectively throughout the seven year study period. The mean and CV of NRPs of BPC came to be 51.08% and 87.06%. Similarly, the NPRs of CHPCL remained 46.13%, 55.70%, 61.97% and 73.87% respectively throughout the four year study period. The mean and CV of NPRs of CHPCL came to be 59.42% and 19.57%.

The OERs of BPC remained 46.71%, 37.80%, 89.10%, 30.19%, 32.43%, 28.59% and 30.71% respectively throughout the seven year study period. The mean and CV of OERs of BPC came to be 42.22% and 51.13%. Similarly, the OERs of CHPCL remained 5.06%, 4.82%, 5.01% and 5.99% respectively throughout the four year study period. The mean and CV of OERs of CHPCL came to be 5.22%and 9.96%.

The ROEs of BPC remained 7.06%, 8.23%, -2.92%, 17.49%, 15.76%, 22.18%, and 19.53% respectively throughout the seven year study period. The mean and CV of ROEs of BPC came to be 12.48% and 70.51%. Similarly, the ROEs of CHPCL remained 38.20%, 38.40%, 34.00% and 39.39% respectively throughout the four year study period. The mean and CV of ROEs of CHPCL came to be 37.50% and 6.37%.

The ROTAs of BPC remained 6.56%,7.68%, -2.46%, 14.90%, 13.74%, 16.53% and 13.43% respectively throughout the seven years study period. The mean and CV of ROTAs of BPC came to be 10.06% and 66.10%.Similarly, the ROTAs of CHPCL remained 16.98%, 20.86%, 24.43%, and 29.94%respectively throughout the four year study period. The mean and CV of ROTAs of CHPCL came to be 23.05% and 23.90%.

The EPSs of BPC remained Rs13.09, Rs.14.85, Rs.-5.36, Rs.28.06, Rs.23.57, Rs.34.37 and Rs.30.13 respectively throughout the seven year study period. The mean and CV of EPSs of BPC came to be Rs.19.82 and 68.41%. Similarly, the EPSs of CHPCL remained Rs.55.63, Rs.78.31, Rs.69.59 and Rs.91.49 respectively throughout the four study period. The mean and CV of EPSs of CHPCL came to be Rs.73.76 and 20.43%.

The DPSs of BPC remained Rs.5, Rs.10, RS.0, Rs.40, Rs.35, Rs.30 and Rs.30 respectively throughout the seven year study period. The mean and CV of DPSs of BPC came to be Rs.21.42 and 74.65%. Similarly, the DPSs of CHPCL remained Rs.0, Rs.20, Rs.15 and Rs.35 respectively throughout the four year study period. The mean and CV of DPSs of CHPCL came to be Rs.17.50 and 82.45%.

The DPRs of BPC remained Rs.38.20, Rs.67.34, Rs.0, Rs.142.55, Rs.148.49 and Rs.87.29 respectively throughout the seven year study period. The mean and CV of DPRs of BPC came to be Rs.80.65 and 67.25%. Similarly, the DPRs of CHPCL remained Rs.0, Rs.25.54 and Rs.21.55respectively throughout the four year study period. The mean and CV of DPRs of CHPCL came to be Rs.15.70 and 87.52%.

The coefficient of correlation between sales and net profit after tax of BPC and CHPCL came 0.952 and 0.990 respectively. This value of correlation indicates the positive relation between sales and net profit after tax. Considering the probable errors of BPC and CHPCL, since the value of r is greater than 6PE, the correlation is at significant level.

The coefficient of correlation between sales and total assets of BPC and CHPCL came -0.098 and -0.956 respectively. This value of correlation indicates the negative relation

between sales and total assets. Considering the probable errors of BPC and CHPCL, since the value of r is less than 6PE, the correlation is not significant level.

The coefficient of correlation between total assets and net profit after tax of BPC and CHPCL came -0.166 and -0.931 respectively. This value of correlation indicates the negative relation between total assets and net profit after tax. Considering the probable errors of BPC and CHPCL, since the value of r is less than 6PE, the correlation is not at significant level.

According to the trend equation, the forecasted values of total sales of BPC for coming three years would be Rs.417, 397.72, Rs.455, 319.15 and Rs.493, 240.58 thousand respectively. Similarly, the forecasted values of total sales of CHPCL for coming three years would be 1,016,479.25, Rs.1, 122, 219.45 and Rs.1, 227,959.65 thousand respectively.

According to the trend equation, the forecasted values of net profit after tax of BPC for coming three years would be Rs.309, 029.58, Rs.344, 716.19 and Rs.380, 402.80 thousand respectively. Similarly, the forecasted values of net profit after tax of CHPCL for coming three years would be Rs.784, 442.50, Rs.914, 770 and Rs.1, 045,097.50 thousand respectively.

According to the trend equation, the forecasted values of EPS of BPC for coming three years would be Rs.36.82, Rs.41.07 and Rs.45.32 respectively. Similarly, the forecasted values of EPS of CHPCL for coming three years would be Rs.98.49, Rs.108.38 and Rs.118.27 respectively.

5.1.2 Major Findings from Primary Sources

Out of 30, 25 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, Ho is accepted which means that ROE shows the performance of the selected IPPs.

Out of 30, again 25 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, Ho is accepted which means that ratio analysis is used to measure performance in selected IPPs.

Out of 30, 18 respondents agreed that there is adequate government assistance to the IPPs in Nepal. And since calculated value of χ^2 is less than tabulated value of χ^2, Ho is accepted which means that there is adequate government assistance to the IPPs in Nepal.

Out of 30, 22 respondents agreed that the level that of return presently obtained from IPPs were higher than the expectation of investors. And since calculated value of χ^2 is less than tabulated value of χ^2, Ho is accepted which means that the level of return presently obtained from IPPs is higher than the expectation of investors.

Out of 30, 16 respondents agreed that the stock prices of IPPs were influenced by whim and rumors rather than profitability reasons than the expectation of investors. And since calculated value of χ^2 is less than tabulated value of χ^2, Ho is accepted which means that the stock prices of IPPs are influenced by whim and rumors rather than profitability reasons.

CHAPTER V

SUMMARY, CONCLUSION AND RECOMMENDATIONS

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

5.1 Summary

Power projects on Nepal's gushing, mountain rivers could meet the energy needs of this Himalayan country and its giant southern neighbor, India. But the foaming waters are yet to be even partly harnessed, because of a shortage of funds and opposition to big multimillion 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 $ 1 billion scheme for environmental reasons. A surge in energy demand was already creating long power shortages 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 smaller in scale but easier to finance and build.

The Chilime Hydropower Company Ltd. was established with 51% of NEA, another 25% of NEA employees and the rest to be offered to the public. The 20 MW dam in the hills north of Kathmandu is built by Nepali engineers and technicians using local design capabilities. The money also is trapped locally-through loans from Nepal's financial promptly won a power generation license from the government, and also signed a power

purchase agreement with NEA to sell the energy generated to the national grid. The price was fixed at three rupees(less than 5 cents) per KWh of energy.

Butwal Power Company was established in 1966 when total capacity of the power I the country was only 3.45MW. 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. BPC not only involved in design and construction work but also owns and operates the 12MW Jhimruk Hydropower Plant and the 5.1 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 private power supplier in Nepal.

There has been a gradual change in local and global energy markets providing ample space for both the public and the private enterprises in the power sector 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 sector participation in Nepal.

The continuing interest shown by the domestic and foreign private investors is encouraging for Nepal's power sector although the current interest of the private sector is limited to small plants of capacities less than 10MW 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 both 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 projects have not been implemented in tandem. The delays experienced in Middle Marsyangdi, the only public sector project presently under construction, 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. Decisions 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 is the key to providing affordable electricity to the people of Nepal.

Being the largest government enterprise and pioneer of electricity business in Nepal, it is desirable for NEA to initiate and expedite joint venture power generation schemes to conquer the continuous loss situation. Considering NEA's limited resource for capital investments, financial resources available in the local market should be tapped for the equity contribution. The successful commissioning of the Chilime hydropower project under NEA-private partnership was indicate of the beginning of a new era of public-private sector cooperation in Nepal's electricity sector. This should act as a springboard for NEA to adopt an effective joint venture investment policy to meet the growing demand of energy in the country.

As this study is related to the financial evaluation of BPC and CHPCL, 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, leverage ratio, profitability 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.

The liquidity ratios of the companies seem to be inconsistent. BPC has maintained proper liquidity position but CHPCL has not. The mean and CV of current ratios of BPC came to be 2.710 and 61.14%. The mean and CV of current ratios of CHPCL came to be 0.814 and 73.83%. Similarly, the mean and CV of quick ratios of BPC came to be 2.347 and 57.05%. The mean and CV of quick ratios of CHPCL came to be 0.782 and 76.47%.

Except that of DTRs all other activity ratios of BPC present fairly consistent trends for the last four years. Whereas, CHPCL holds less variation in all activity ratios as compared to BPC. The mean and CV of FATORs of BPC came to be 0.354 and 39.26%. The mean and CV of FATORs of CHPCL came to be 0.337 and 21.66%.Similarly, the mean and CV of TATORs of BPC came to be 0,160 and 38.12%. The mea and CV of TATORs of CHPCL came to be 0.307 and 21.49%. Similarly, the mean and CV of ITRs of BPC came to be 5.265 and 33.54%.The mean and CV of ITRs of CHPCL came to be 69.940 and 16.40%. Similarly, the mean and CV of DTRs of BPC came to be 6.358 and 44.40%. The mean and CV of DTRs of CHPCL came to be 5.897 and 13.77%. Similarly, the mean and CV of ACPs of BPC came to be 71 days and 86.97%. The mean and CV of ACPs of CHPCL came to be 40 days and 21.34%.

While BPC is all equity financed, the leverage ratios of CHPCL reveal decreasing risk of insolvency each year. While the mean and CV of debt to shareholders equity of CHPCL came to be 1.340 and 88.20%., the mean and CV of debt to total assets ratios of CHPCL came to be 0.408 and 59.06%.

Due to the loss incurred in F/Y 2002/03, BPC present fluctuating trends of probability ratios. Unlike BPC, CHPCL has considerably low OERs and shows rather consistent trends of profitability ratios. The mean and CV of NPRs of BPC came to be 51.08% and 87.06%.The mean and CV of NPRs of CHPCL came to be 59.42% and 19.57%. Similarly, the mean and CVof OERs of BPC came to be 42.22% and 51.13%. The mean and CV of OERs of CHPCL came to be 5.22% and 9.96%. Similarly, the mean and CV of ROE ratios of BPC came to be 12.48% and 70.51%.The mean and CV of ROE ratios of CHPCL came to be 37.50% and 6.37%. Similarly, the mean and CV of ROTA ratios of BPC came to be 10.06% and 66.10%. The mea and C of ROTA ratios of CHPCL came to be 23.05% and 23.90%.

The invisibility ratios of both companies present fluctuating trends. Though CHPCL has higher trends of EPS ratios, the DPS ratios and DPRs remain lower as compared to BPC. The mean and CV of EPS ratios of BPC came to be Rs.19.82 and 68.41%.The mean and

CV of EPS ratios of CHPCL came to be Rs.73.76 and 20.43%.Similarly, the mean and CV of DPS ratios of BPC came to be Rs.21.42 and 74.65%. The mean and CV of DPS ratios of CHPCL came to be Rs.17.50 and 82.45%.Similarly, the mean and CV of DPRs of BPC came to be Rs.80.65 and 67.45%. The mean and CV of DPRs of CHPCL came to be Rs.15.70 and 87.52%.

The coefficient of correlation between sales and net profit after tax of BPC and CHPCL show positive and significant relation. The coefficient of correlation between these two variables of BPC and CHPCL came 0.952 and 0.990 respectively. Similarly, the probable errors of BPC and CHPCL came 0.024 and 0.007 respectively.

The coefficient of correlation between sales and total assets of BPC and CHPCL show negative but insignificant relation. The coefficient of correlation between these two variables of BPC and CHPCL came -0.098 and -0.956 respectively. Similarly, the probable errors of BPC and CHPCL came 0.252 and 0.029 respectively.

The coefficient of correlation between total assets and net profit after tax of BPC and CHPCL show negative but insignificant relation. The coefficient of correlation between these two variables of BPC and CHPCL came -0.166 and -0.931 respectively. Similarly, the probable errors of BPC and CHPCL came 0.248 and 0.045 respectively.

According to the trend equation, the forecasted values of total sales of BPC for coming three years would be Rs.417, 397.72, Rs.455, 319.15 and Rs.493, 240.58 thousand respectively. Similarly, the forecasted values of total sales of CHPCL for coming three years would be 1,016,479.25, Rs.1, 122, 219.45 and Rs.1, 227,959.65 thousand respectively.

According to the trend equation, the forecasted values of net profit after tax of BPC for coming three years would be Rs.309, 029.58, Rs.344, 716.19 and Rs.380, 402.80 thousand respectively. Similarly, the forecasted values of net profit after tax of CHPCL

for coming three years would be Rs.784, 442.50, Rs.914, 770 and Rs.1, 045,097.50 thousand respectively.

According to the trend equation, the forecasted values of EPS of BPC for coming three years would be Rs.36.82, Rs.41.07 and Rs.45.32 respectively. Similarly, the forecasted values of EPS of CHPCL for coming three years would be Rs.98.49, Rs.108.38 and Rs.118.27 respectively.

Out of 30, 25 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, Ho is accepted which means that ROE shows the performance of the selected IPPs.

Out of 30, again 25 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, Ho is accepted which means that ratio analysis is used to measure performance in selected IPPs.

Out of 30, 18 respondents agreed that there is adequate government assistance to the IPPs in Nepal. And since calculated value of χ^2 is less than tabulated value of χ^2, Ho is accepted which means that there is adequate government assistance to the IPPs in Nepal.

Out of 30, 22 respondents agreed that the level that of return presently obtained from IPPs were higher than the expectation of investors. And since calculated value of $\chi 2$ is less than tabulated value of χ^2, Ho is accepted which means that the level of return presently obtained from IPPs is higher than the expectation of investors.

Out of 30, 16 respondents agreed that the stock prices of IPPs were influenced by whim and rumors rather than profitability reasons than the expectation of investors. And since calculated value of χ^2 is less than tabulated value of χ^2, Ho is accepted which means that the stock prices of IPPs are influenced by whim and rumors rather than profitability reasons.

5.2 Conclusions

As per the analysis and interpretation of data the following conclusion have been derived:

- The current and quick ratios of the companies seem to be inconsistent. BPC has maintained proper liquidity position but CHPCL has not. Liquidity position of CHPCL is much feeble than that of BPC which shows the incapability of CHPCL to meet its current liabilities as compared to BPC.
- The fixed assets turnover ratios of both IPPs are satisfactory and somewhat consistent. However, BPC has not been able to utilize its current assets appropriately as the total assets turnover ratio remains vulnerable against that of CHPCL. Similarly, while CHPCL seems to be operating under the risk of running out of inventory, BPC has a very humble rate of inventory turnover. Though the debtor's turnover ratios are almost equivalent, considering the average collection periods, it can be concluded that CHPCL suffers less from the problem of outstanding debt collection.
- BPC is all equity financed and thus the risk of insolvency is minimized for this company. The risk of insolvency of CHPCL has been decreasing each year with the decrease in its leverage ratios.
- Though BPC has considerably high operating expenses ratios and inconsistent trend in its net profit ratios the overall performance with respect to profitability is not far behind to CHPCL. However, considering the return on shareholders equity and return on total assets, it is obvious that one would preferably invest in CHPCL rather in BPC.
- Though CHPCL has a three times higher EPS with compared to that of BPC, its tight custom of dividend payout ratio conceals the real charisma. On the other hand BPC, being much liberal I distributing the earnings in form of dividends, one might confuse to pick the preferable investment between BPC and CHPCL.
- The coefficient of correlation between sales and net profit after tax of BPC and CHPCL show positive and significant relation. It also reveals that CHPCL is slightly more successful than BPC to be able to yield more uniform profits out of its sales.

- The coefficient of correlation between sales and total assets of BPC and CHPCL show negative but insignificant relation. It also reveals that it is likely that decrease in total assets is associated to increase in net profit after tax of CHPCL more than in net profit after tax of BPC.
- The coefficient of correlation between total assets and net profit after tax of BPC and CHPCL show negative but insignificant relation. It also reveals that the net profit after tax of CHPCL is more reactive than that of BPC to fluctuations in total assets.
- The growth trend analysis of total sales and net profit after tax of CHPCL demonstrate a higher increasing trend than that of BPC. However, the growth trend analysis of earning per share of CHPCL demonstrates lower increasing trend than that of BPC.
- From the primary data analysis it can be concluded that ROE does show the performance of the IPPs, ratio analysis is used to analyze the performance, government assistance to IPPs in Nepal is adequate, Present return of IPPs is higher than the expectation of investors and the stock prices are influenced by Whims and rumors rather than profitability reasons.

Table No.5.1

SWOT Analysis

IPPs	BPC	CHPCL
Strengths	) Availability of funds) No loans and borrowings) Diversified sources of income	) Use of domestic resources and financing) Low operating expenses) Tax subsidy and increasing profits

Weaknesses	⁾ Inefficient use of resources ⁾ High operating expenses ⁾ Lack of strategies to realize financial plans	⁾ High level of fixed costs ⁾ Lack of strategies to realize financial plans ⁾ Inconsistent dividend policy
Opportunities	⁾ Plenty of market availability ⁾ No competition	
Threats	⁾ High research costs ⁾ Tightening power purchase agreements by NEA	

5.3 Recommendations

Based on the conclusion, some recommendations are presented below:

- The liquidity position of CHPCL is very feeble, and it must hold more liquid assets or otherwise cut off current liabilities to maintain a proper liquidity position .BPC needs to maintain the current liquidity position.

- CHPCL should maintain enough inventories so as to avoid threat of stock out. BPC needs to find better ways to control and improve its inventory and receivable management. Fixed assets turnover ratio of BPC is satisfactory but total assets needs to be managed more effectively.

- Including funds of fixed interest in the capital structure can maximize the value of company. Both IPPs should enjoy the capital of less cost by borrowing funds as they are in strong credibility position. CHPCL should hold the current portion of leverage in its capital structure.

- The profitability position of both IPPs is satisfactory. However, BPC can do much to increase thee ROE and ROTA by better utilization of its assets. There is also a need for effective production management to control operating costs of BPC.

- Despite the availability of lucrative investment opportunities, shareholders need to be satisfied with dividends. CHPCL should adopt a more liberal dividend payout policy, as the earning per share is healthy to support such a policy. The uniform distribution of dividends will also help to reduce fluctuations in stock prices.

- The projected sales values can be met by setting production and sales plans, and formulating proper policies and strategies. The IPPs should implement new techniques of management such as participative management by objective and total quality management.

- The IPPs should maintain research budgets to study new hydroelectric projects across the country. There should be proper cost control on maintenance activities.

- The IPPs should introduce SWOT analysis to improve their capability of dealing with external forces and managing internal issues of strengths and weaknesses.

- The IPPs 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.

- The IPPs should follow the practices of setting financial goals for future activities and should develop major programs to accomplish them.

BIBLIOGRAPHY

Books:

Jain, S.P.and Narang, K.L. (1989). ***Financial and Management Accountancy.*** Delhi: Kalyani publishers.

Khan, M.Y. and Jain, P.K.(1999). ***Financial Management***, 3rd Edition. New Delhi: Tata Mcgrawhill Publishing Company Limited.

Lynch, R.M. and Williamson, R.W. (1983). ***Accounting for Management,*** 3rd Edition. New Delhi: Tata McGrawhill Publishing Company Limited.

Moer, J.N. (1961). ***Financial Statement Analysis.*** Anglewood Cliffs: Prentice Hall.

Needles, B.E. (1989). ***Financial Accounting***. Boston: Houghton Mifflin company.

Pandey, I.M. (1999) ***Financial Management***, *8th Edition.* India: Vikash Publishing House Private Limited.

Srivastava, R.M. (1993). ***Financial Management***. India: Pragati prakashan.

Sthapit, A.B., Gautam, H., Joshi, P.R. and Dangol, P.M.(2006). ***Statistical Methods***, 4th Edition. Kathmandu: Buddha Academic Publishers and Distributors Private Limited.

Van Horne, J.C. (2004). ***Financial Management and policy.*** Stanford University: Prentice Hall.

Weston, J.F. and Brigham, E.F. (1987).***Essentials of managerial Finance***, 8th Edition. USA: The Dryden Press.

Wolf, H.K. and Pant, P.R. (2005).***Social Science research and Thesis Writing***, 4th Edition. Kathmandu: Buddha Academic Enterprises Private Limited.

Dissertations and Academic Reports:

Amatya,Eliza (2005). ***An Evaluation of Financial Performance of Nepal Electricity Authority.*** An Unpublished Dissertation Submitted To Central Department Of Management, T.U., Kirtipur.

Khadka, P.R. (2007). ***Profit Planning in Hydropower Industry***. An Unpublished Dissertation submitted To Central Department Of management, T.U., Kirtipur.

Khatiwada, R.C.(2007). ***Financial Performance Analysis of Butwal Power Company***. An Unpublished Dissertation Submitted To Central Department Of Management, T.U., Kirttipur.

Shrestha, S.B. (1996). ***Financing Power Development in Nepal-A case study of NEA***. An Unpublished Dissertation Submitted To Central Department of Management, T.U., Kirtipur

Tamang, Samraj (2007). ***Market Efficiency and the Investors.*** An Unpublished Dissertation Submitted To Central Department of Management, T.U., Kirtipur.

Reports:

Electricity Development Policy-2058.Ministry of Water Resources, Government of Nepal.

Ninth Five Year Plan. National Planning Commission, Government of Nepal.

Tenth Five Year Plan. National Planning Commission, Government of Nepal.

Articles available From Newspaper, Magazines and Internet:

Arya, R.C. (14 April 2007). *Revitalizing Small Hydropower in Nepal,* The Kathmandu Post.

Dr. Nepal, B.H. (8 April/June 2005). *Managing Nepalese Waters, South Asian Journal*.

Editorial (November 2003). *Cheap Chilime*, New Business Age.

Maharjan, Uttam (8 March 2002). *Hydropower Development- Targeting the Poor*, the Rising Nepal.

Pandey, Bikash(17/23) October 2003). *People power*, www.nepalitimes.com.

Phuyal, Surendra(29 May 2001). *Home-financed Chilime Hydel project to go Public*, The kathmandu Post.

Pokhrel, Sumit(7 October 2006). Nepal's Hydropower Dream: Are we Prepared for Nightmares, www.nepaldevelopment.com.

Pradhan, Prachar (August 2007). Challenges and Issues on the Domestic Hydropower Projects and Prospective on Export Oriented Hydropower Projects, Vidyut.

Pun, S.B. (17 March 2006). Ordinance for the High Rs.1,280/ Crores Stakes, www.nepalnews.com.np.

Renewable Energy Technologies, www.powerpurchaseagreements.com.

APPENDICES

- Appendix A
  Computation of Correlation of Coefficient and probable Error

- Appendix B
  Computation of Trend values

- Appendix C
  Seven Year Summary of Profit And Loss Account & Balance Sheet of Butwal Power Company (BPC) Limited

- Appendix D
  Four Year Summary of Profit And Loss Account & Balance Sheet of Chilime Hydropower Company Limited (CHPCL)

Appendix A

Computation of Correlation of Coefficient and Probable Error

Correlation between Total Sales and Net Profit after tax of BPC

(In Thousand NRS.)

Year	Sales(X)	Net Profit After Tax(Y)	X^2	Y^2	X ×Y
2000/01	182,853	109,862	33,435,219,609	12,069,659,044	20,088,596,286
2001/02	236,278	124,626	55,827,293,284	15,531,639,876	29,446,382,028
2002/03	96,364	(44,944)	9,286,020,496	2,019,963,136	-4,330,983,616
2003/04	283,167	235,418	80,183,549,889	55,421,634,724	66,662,608,806
2004/05	323,134	197,761	104,415,581,956	39,109,413,121	63,903,302,974
2005/06	358,419	288,419	128,464,179,561	83,185,519,561	103,374,849,561
2006/07	379,769	252,840	144,224,493,361	63,928,065,600	96,020,793,960
Total	ε X= 1,529,964	ψ= 1,163,982	ε ^{2}= 555,836,338,156	ψ^2= 271,265,895,062	ε ψ= 375,165,549,999
Correlation (r) =0.952			Probable Error (PE) = 0.024		

$$r = \frac{N \sum XY - \sum X \sum Y}{\sqrt{N \sum X^2 - (\sum X)^2}\sqrt{N \sum Y^2 - (\sum Y)^2}} \times 0.952$$

$$PE = 0.6745 \times \frac{1 - r^2}{\sqrt{N}} \times 0.024$$

Correlation between Total Sales and Net Profit after Tax of CHPCL

(In Thousand NRS)

Year	Sales(X)	Net Profit After tax(Y)	X^2	Y^2	XY
2003/04	593,535	273,825	352,283,796,225	74,980,130,625	162,524,721,375
2004/05	692,026	385,436	478,899,984,676	148,560,910,096	266,731,733,336
2005/06	819,414	507,758	671,439,303,396	257,818,186,564	416,064,013,812
2006/07	903,540	667,476	816,384,531,600	445,524,210,576	603,091,265,040
Total	ε =3,008,515	ψ=1,834,495	ε ^{2}= 2,318,807,615,897	ψ^2= 926,883,437,861	ε ψ= 1,448,411,733,563
Correlation (r)=0.990			Probable Error (PE)= 0.007		

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

$$PE = 0.6745 \times \frac{1 - r^2}{\sqrt{N}} = 0.007$$

Correlation between Total Sales and Total Assets of BPC

(In Thousand NRS.)

Year	Sales(X)	Total Assets(Y)	X^2	Y^2	X×Y
2000/01	182,853	1,674,464	33,435,219,609	2,803,829,687,296	306,180,765,792
2001/02	236,278	1,622,165	55,827,293,284	2,631,419,287,225	383,281,901,870
2002/03	96,364	1,825,464	9,286,020,496	3,332,318,815,296	175,909,012,896
2003/04	283,167	1,579,195	80,183,549,889	2,493,856,848,025	447,175,910,565
2004/05	323,134	1,439,238	104,415,581,956	2,071,406,020,644	465,066,731,892
2005/06	358,419	1,744,447	128,464,179,561	3,043,095,335,809	625,242,949,293
2006/07	379,769	1,882,271	144,224,493,361	3,542,944,117,441	714,828,175,399
Total	ε X| KKPΣΣPN|	ψX| KKEIOEANN|	ε ^{2}= 555,836,338,156	ψ^2= 19,918,870,111,736	ε ψ= 3,117,685,447,707
Correlation (r)= -0.098			Probable Error (PE)= 0.252		

$$r = \frac{N \quad XY \; Z \quad X \quad Y}{\sqrt{N \quad X^2 \; Z(\quad X)^2}\sqrt{N \quad Y^2 \; Z(\quad Y)^2}}$$

$$PE = 0.6745 \times \frac{1 - r^2}{\sqrt{N}} = 0.252$$

Correlation between Total Sales and Total Assets of CHPCL

(In thousand NRS)

Year	Sales(X)	Total Assets(Y)	X^2	Y^2	X×Y
2003/04	593,535	2,571,450	352,283,796,225	6,612,355,102,500	1,526,245,575,750
2004/05	692,026	2,457,402	478,899,984,676	6,038,824,589,604	1,700,586,076,452
2005/06	819,414	2,411,946	671,439,303,396	5,817,483,506,916	1,976,382,319,644
2006/07	903,540	2,379,605	816,384,531,600	5,662,519,956,025	2,150,068,301,700
Total	ε = 3,008,515|	ψ= 9,820,403|	ε ^X| 2,319,007,615,897|	ψ^2= 24,131,183,155,045|	ε ψX| 7,353,068,301,700|
Correlation(r) = -0.956			Probable Error (PE)= 0.029		

$$r = \frac{N \quad XY \; Z \quad X \quad Y}{\sqrt{N \quad X^2 \; Z(\quad X)^2}\sqrt{N \quad Y^2 \; Z(\quad Y)^2}}$$

$$PE = 0.6745 \times \frac{1 Z r^2}{\sqrt{N}} = 0.029$$

Correlation between Total Assets and Net Profit After Tax of BPC

(In Thousand NRS.)

Year	Total Assets(X)	Net Profit After Tax(Y)	X^2	Y^2	X×Y
2000/01	1,674,464	109,862	2,803,829,687,296	12,069,659,044	183,959,963,968
2001/02	1,622,165	124,626	2,631,419,287,225	15,531,639,876	202,163,935,290
2002/03	1,825,464	-44,944	3,332,318,815,296	2,019,963,136	-82,043,654,016
2003/04	1,579,195	235,418	2,493,856,848,025	55,421,634,724	371,770,928,510
2004/05	1,439,238	197,761	2,071,406,020,644	39,109,413,121	284,625,146,118
2005/06	1,744,447	288,419	3,043,095,335,809	83,185,519,561	503,131,659,293
2006/07	1,882,271	252,840	3,542,944,117,441	63,928,065,600	475,913,399,640
Total	ε = 11,767,244|	ψ= 1,163,982|	ε ^{2}= 19,918,870,111,736|	ψ^2= 271,265,895,062|	ε ψX| 1,939,521,378,803|
Correlation (r) =-0.166			Probable Error(PE)= 0.248		

$$r = \frac{N \quad XY \; Z \quad X \quad Y}{\sqrt{N \quad X^2 \; Z(\quad X)^2}\sqrt{N \quad Y^2 \; Z(\quad Y)^2}}$$

$$PE = 0.6745 \times \frac{1 Z r^2}{\sqrt{N}} = 0.248$$

Correlation between Total Assets and Net Profit After Tax of CHPCL

(In Thousand NRS.)

Year	Total Assets(X)	Net Profit After Tax(Y)	X^2	Y^2	X×Y
2003/04	2,571,450	273,825	6,612,355,102,500	6,612,355,102,500	704,127,296,250
2004/05	2,457,402	385,436	6,038,824,589,604	6,038,824,589,604	947,171,197,272
2005/06	2,411,946	507,758	5,817,483,506,916	5,817,483,506,916	1,224,684,877,068
2006/07	2,379,605	667,476	5,662,519,956,025	5,662,519,956,025	1,588,329,226,980
Total	ε = 9,820,403|	ψ= 1,834,495|	ε ^X| 24,131,183,155,045|	ψ^2= 926,883,437,861|	ε ψX| [illegible]

Correlation (r) = - 0.931	Probable Error (PE)= 0.045

$$r = \frac{N \quad XY \; Z \quad X \quad Y}{\sqrt{N \quad X^2 \; Z(\quad X)^2}\sqrt{N \quad Y^2 \; Z(\quad Y)^2}}$$

$$PE = 0.6745 \times \frac{1 Z r^2}{\sqrt{N}} = 0.045$$

Appendix B

Computation of Trend Values

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=a+bX)
2000/01	1	-3	182,853	9	-548,559	151,947.71
2001/02	2	-2	236,278	4	-472,556	189,869.14
2002/03	3	-1	96,364	1	-96,364	227,790.57
2003/04	4	0	283,167	0	0	265,712.00
2004/05	5	1	323,134	1	323,134	303,633.43
2005/06	6	2	358,419	4	716,838	341,554.86
2006/07	7	3	379,769	9	1,139,307	379,476.29
	|	ε =0|	ψ=1,859,984|	ε ^{2}=28|	ε ψX1,061,800|	
a = 265,712			b =37,921.43			
2007/08		4				417,397.72
2008/09		5				455,319.15
2009/10		6				493,240.58

Least Square Trend Analysis of Total Sales Growth of CHPCL

(In Thousand NRS.)

Fiscal Year	Time	X= Time -2.5	Sales(Y)	X^2	X×Y	Trend Value (Y = a+bX)
2003/04	1	-1.5	593,535	2.25	-890,303	593,518.45
2004/05	2	-0.5	692,026	0.25	-346,013	699,258.65
2005/06	3	0.5	819,414	0.25	409,707	804,998.85
2006/07	4	1.5	903,540	2.25	1,355,310	910,739.05
		ε =0|	ψ=3,008,515|	ε ^{2}=5|	ε ψ=528,701|	
a = 752,128.75			b = 105,740.20			
2007/08	5	2.5				1,016,479.25

2008/09	6	3.5				1,122,219.45
2009/10	7	4.5				1,227,959.65

Mathematically Y = a + bX

Where, Y = Value of the dependent value

a = Y-intercept

b = Slope of the trend line

X =Value of the independent Value

Normal equations fitting above equation are:

$\psi = Na + b \quad \varepsilon$

$\varepsilon \psi X a \quad \varepsilon + b \quad \varepsilon^2$

Since, $\varepsilon X0$, $a = \frac{Y}{N}$ and $b = \frac{XY}{X^2}$

Least Square Trend Analysis of Net Profit After Tax Growth of BPC

(In Thousand NRS.)

Fiscal Year	Time	X = Time -4	Net Profit Tax (Y)	X^2	X×Y	Trend Value (Y=a+bX)
2000/01	1	-3	109,862	9	-329,586	59,223.31
2001/02	2	-2	124,626	4	-249,252	94,909.92
2002/03	3	-1	(44,944)	1	44,944	130,596.53
2003/04	4	0	235,418	0	0	166,283.14
2004/05	5	1	197,761	1	197,761	201,969.75
2005/06	6	2	288,419	4	576,838	237,656.36
2006/07	7	3	252,840	9	758,520	273,342.97
	|	ε =0|	ψ=1,163,982|	ε ^{2}=28|	ε ψX1,061,800|	
a = 166,283.14			b =35,686.61			
2007/08		4				309,029.58
2008/09		5				344,716.19
2009/10		6				380,402.80

Least Square Trend Analysis of Net Profit After Tax Growth of CHPCL

(In Thousand NRS.)

Fiscal Year	Time	X= Time -2.5	Net Profit After Tax(Y)	X^2	X×Y	Trend Value (Y = a+bX)
2003/04	1	-1.5	273,825	2.25	-410,737	263,132.50
2004/05	2	-0.5	385,436	0.25	-192,718	393,460.00
2005/06	3	0.5	507,758	0.25	253,879	523,787.50
2006/07	4	1.5	667,476	2.25	1,001,214	654,115.00
		ε =0|	ψ=1,834,495|	ε ^{2}=5|	ε ψ=651,638|	
a = 458,623.75			b = 130,327.5			

2007/08	5	2.5				784,442.50
2008/09	6	3.5				914,770.00
2009/10	7	4.5				1,045,097.50

Mathematically Y = a + bX

Where, Y = Value of the dependent value

a = Y-intercept

b = Slope of the trend line

X =Value of the independent Value

Normal equations fitting above equation are:

ψ = Na +b ε

$\varepsilon \psi X$ a ε + b ε^2

Since, $\varepsilon X0$, a = $\frac{Y}{N}$ and b= $\frac{XY}{X^2}$

Least Square Trend Analysis of Earning Per Share Growth of BPC

(In Thousand NRS.)

Fiscal Year	Time	X = Time -4	Earning Per Share (Y)	X^2	X×Y	Trend Value (Y=a+bX)
2000/01	1	-3	13.09	9	-39.27	7.07
2001/02	2	-2	14.85	4	-29.70	11.32
2002/03	3	-1	(5.36)	1	5.36	15.57
2003/04	4	0	28.06	0	0	19.82
2004/05	5	1	23.57	1	23.57	24.07
2005/06	6	2	34.37	4	68.74	28.32
2006/07	7	3	30.13	9	90.39	32.57
	|	ε =0|	ψ=138.71|	ε^2=28|	$\varepsilon \psi X$119.09|	
a = 19.82			b =4.25			
2007/08		4				36.82
2008/09		5				41.07
2009/10		6				45.32

Least Square Trend Analysis of Earning Per Share Growth of CHPCL

(In Thousand NRS.)

Fiscal Year	Time	X= Time -2.5	Earning Per Share (Y)	X^2	X×Y	Trend Value (Y = a+bX)
2003/04	1	-1.5	55.63	2.25	-83.45	58.93

2004/05	2	-0.5	78.31	0.25	-39.16	68.82
2005/06	3	0.5	69.59	0.25	34.80	78.71
2006/07	4	1.5	91.49	2.25	137.24	88.60
		ε =0|	ψ=295.02|	ε ^{2}=5|	ε ψ=49.43|	
a = 73.76			b = 9.89			
2007/08	5	2.5				98.49
2008/09	6	3.5				108.38
2009/10	7	4.5				118.27

Mathematically Y = a + bX

Where, Y = Value of the dependent value

a = Y-intercept

b = Slope of the trend line

X =Value of the independent Value

Normal equations fitting above equation are:

ψ = Na +b ε

ε ψX a ε + b ε ^{2}

Since, ε X0, a = $\frac{Y}{N}$ and b= $\frac{XY}{X^2}$

Dear Sir/Madam,

I would like to request you kindly fill up the following questionnaire prepared for collection of your views as valuable resources for my research work.

Name:…….

Designation:……

Office/ Department:……

QUESTIONNAIRE

Please tick ( ) the answer of your choice.

1. Does ROE show the performance of your company?
   a. Yes b. No
2. Is ratio analysis used to measure performance in your company?
   a. Yes b. No
3. Has government provided adequate assistance to your company?
   a. Yes b. No
4. Is the level of return you are presently getting is higher than your expectation from Share investment?
   a. Yes b. No
5. Do you think that the stock prices of IPPs are influenced by whim and rumors rather than profitability reasons?
   a. Yes b. No

Thank you for your kind co-operation.

Appendix C

Seven Year summary of Profit And Loss Account & Balance Sheet

of Butwal Power Company (BPC) Limited

(In Thousand NRS.)

Particulars	2000/01 2057/058	2001/02 2058/059	2002/03 2059/060	2003/04 2060/061	2004/05 2061/062	2005/06 2062/063	2006/07 2063/064
INCOME							
Operating Income							
Electricity Sale to NEA	159,768	213,311	67,954	249,530	286,795	318,483	334,166
Electricity sale to Consumers	23,085	22,967	28,410	33,637	36,339	39,936	45,603
Electricity Services	3,232	3,726	3,847	3,479	3,529	5,353	3,634
Consultancy Services	16,473	16,441	7,768	8,212	8,831	11,498	9,535
Total operating Income	202,558	256,445	107,979	294,858	335,494	375,270	392,938
Income from other Sources	67,474	25,076	165	236,753	60,218	116,909	96,403
TOTAL INCOME	270,032	281,521	108,144	531,611	395,712	492,179	489,341
EXPENDITURE							
Power Plant Expenses	35,982	39,836	43,702	47,369	59,600	57,715	74,565
Distribution Expenses	27,713	29,673	27,170	27,170	30,296	31,054	33,303
Consultancy Services	21,712	19,794	14,984	10,946	14,903	13,692	8,774
Administrative Expenses	14,585	15,249	25,066	38,371	41,201	34,990	37,645
Loss on Fixed Assets	-	-	73	376	-	6,090	-
KHP Back End Force Majure Payment	-	-	-	100,075	-	-	-
Depreciation	40,908	44,770	42,093	46,131	47,413	49,959	51,924
Staff Bonus	5,010	3,297	-	8,933	4,046	6,791	5,926
TOTAL EXPENDITURE	145,910	152,619	153,088	279,371	197,459	200,291	226,882
NET PROFIT BEFORE TAX	124,122	128,902	(44,944)	252,240	198,253	291,888	262,459
Income Tax Provision	14,260	4,276	-	16,822	492	3,469	9,619
NET PROFIT AFTER TAX	109,862	124,626	(44,944)	235,418	197,761	288,419	252,840
Last Year Balance	357,385	426,419	386,166	381,552	281,346	185,484	222,131
Income Tax Adjustment	(1,875)	(77,973)	40,330	-	47	(55)	(531)
Dividend	(41,953)	(83,906)	-	(335,624)	(293,670)	(251,717)	(251,635)
NET PROFIT TRANSFERRED TO B/S	423,419	386,166	381,552	281,346	185,484	222,131	222,805

Balance Sheet

Particulars	2000/01 2057/058	2001/02 2058/059	2002/03 2059/060	2003/04 2060/061	2004/05 2061/062	2005/06 2062/063	2006/07 2063/064
ASSETS & PROPERTY							
Fixed Assets	800,987	756,006	763,484	727,340	714,016	743,605	743,893
Capital Work in Progress	10,507	22,907	890	5,277	318	18,576	1,111
Long Term Investments	532,678	544,426	537,648	356,906	381,505	434,481	465,705
Current Assets, Loan & Advance	325,203	286,201	520,987	481,833	335,582	543,416	670,674
Stock	48,358	50,137	43,985	41,766	48,038	57,623	58,896
Current Work in Progress	5,840	7,829	6,898	8,163	9,477	19,394	23,258
Debtors & Receivables	60,881	41,190	36,224	31,309	42,921	35,512	58,918
Cash & Bank Balance	77,346	119,186	120,645	324,349	172,240	364,373	457,035
Advance & Deposits	132,778	67,859	313,235	76,246	62,906	66,514	72,567
Deferred Revenue Expenditure	5,089	12,625	2,455	7,839	7,817	4,369	888
TOTAL	1,674,464	1,622,165	1,825,464	1,579,195	1,439,238	1,744,447	1,882,271
CAPITAL & LIABILITIES							
Equity	839,058	839,058	839,058	839,058	839,058	839,058	839,058
Reserve & Surplus	718,056	676,017	698,587	506,726	4,15611	461,510	455,805
Funds	49,426	53,079	26,520	-	-	-	-
Current Liabilities	67,924	54,012	261,299	210,152	155,657	433,619	562,584
Bank Overdraft	-	-	-	-	-	-	89,947
Creditors & Payables	42,715	45,893	32,983	207,271	52,318	432,012	441,779

Advance & Deposit	5,939	544	228,316	2881	3,339	1,607	30,858
Provisions	19,270	7,574	-	23,259	28912	10,260	24,824
TOTAL	1,674,464	1,622,165	1,825,464	1,579,195	1,439,238	1,744,447	1,882,271

Appendix D

Four Year Summery of Profit And Loss Account &Balance Sheet of Chilime Hydropower Company Limited (CHPCL)

Profit And Loss Account

(In Thousand NRS.)

Particulars	2003/04 2060/061	2004/05 2061/062	2005/06 2062/063	2006/07 2063/064
INCOME				
Electricity Sale to NEA	593,535	692,026	819,414	903,540
Income From Other Sources	307	339	2,579	715
Gain on Sale of Assets & Scrap Material	729	-	-	-
TOTAL INCOME	594,572	692,366	821,994	904,256
EXPENDITURE				
Operating Expenses	30,037	33,379	41,025	54,088
Administrative Expenses	35,015	42,789	88,826	33,878
Depreciation	92,998	103,613	102,819	103,786
Interest Expenses	162,695	127,139	81,563	45,025
Loss on Fixed Assets	-	6	-	-
TOTAL EXPENDITURE	320,747	306,929	314,235	236,779
NET PROFIT BEFORE TAX	273,825	385,436	507,758	667,476
Income Tax Provision	-	-	-	-
NET PROFIT AFTER TAX	273,825	385,436	507,758	667,476
Last Year Balance	-	224,605	511,603	764,072
Proposed Dividend	(49,219)	(98,4390	(255,289)	(218,869)
Proposed Bonus Share	-	-	-	(182,400)
NET PROFIT TRANSFERRED TO B/S	224,605	511,603	764,072	1,030,280

Note: CHPCL is under tax holiday for 15 years from the first date of commercial Production.

Balance Sheet

Particulars	2002/03 2059/060	2003/04 2060/061	2004/05 2061/062	2005/06 2062/063	2006/07 2063/064
ASSETS & PROPERTY					
Fixed Assets & Investments	1,701,412	2,346,065	2,258,523	2,199,957	2,133,934
Fixed Assets	43,343	2,341,713	2,246,081	2,189,252	2,124,910
Capital Work in Progress	1,658,069	2,573	7,710	-	-
New Project	-	1,779	4,732	10,705	9,024
Current Assets, Loan & Advance	505,112	152,819	144,308	206,829	241,801
Debtors & Receivables	-	104,438	112,295	119,792	183,960
Stock	8,845	11,121	9,601	10,296	12,093
Cash & Bank Balance	28,896	28,887	6,949	64,247	34,227
Advance & Deposits	467,370	8,372	15,461	12,492	11,518
Deferred revenue Expenditure	-	72,566	54,461	5,160	3,870
TOTAL	2,206,524	2,571,450	2,457,402	2,411,946	2,379,605
CAPITAL & LIABILITIES					
Equity	477,595	492,195	492,195	729,398	729,565
Reserve & Retained Earning	-	224,605	511,603	764,072	1,212,680
Retained Earning	-	-	224,605	511,603	764,072
Profit & Loss Account	-	224,605	286,997	252,469	266,207
Proposed Bonus Share	-	-	-	-	182,400
Long-term Secured Loan	1,450,339	1,329,567	1,329,567	591,000	168,500

Current Liabilities	278,590	525,083	328,135	327,475	268,860
Short-term Borrowings	253,856	255,879	229,512	-	-
Creditors & Payables	24,733	213,829	40,592	60,425	32,821
Provisions	-	55,373	58,030	267,050	236,038
TOTAL	2,206,524	2,571,450	2,457,402	2,411,946	2,379,605

(In Thousand NRS.)