CHAPTER -I

INTRODUCTION

1.1 Background of the Study

Nepal lies between two large countries China and India. Nepal abounds with natural beauty, language, cultural, geographical diversification, climate diversification, mineral resources, forestry resources, water resources and numerous such other features. Nepal also abounds in possibility of hydropower sector. More than 600 rivers have capacity to generate 83000 MW electricity in Nepal. Geographical condition also supported to build hydro power project but installed hydropower capacity till date stands at Meager 700 MW despite the fact that 42000 MW potential is considered economically. Nepal has enormous water resource for electricity generation that has remained untapped. Water from the Northern part of the country covered by snowy mountains, the perennical sources of water, freefall almost rivers to southern plain from North to South. The high gradient of these rivers provides higher potentially of generating hydropower. This vast potentiality of electricity generation will fulfill the country's energy requirement and surplus energy can be exported to neighbouring countries.

Nepal Government has adopted liberal policy to attract private investment in hydro power projects. Nepal electricity authority (NEA), governmental owned utility, has policy to purchase electricity from the private companies. Many independent power producers are working in this field. To evacuate, power from new power plants, Nepal. Government has a plan of constructing various capacity transmission line project. This has opened wide area of hydroelectric power development in Nepal. There are business opportunities in the hydropower sector to non-residential Nepal (NRN) foreign investors as well. Some of the major benefit for investors include.

- Easy availability of non-immigrant visa.
- Repatriation of investment income in foreign currency.
- Low tax for income from investment in hydro power project.
- Cheap and abundant supply of skilled manpower resulting to lower the cost of projects.
- Contribution to social development of an underdeveloped country.
- Hydropower is an emerging new area of investment in Nepal.
- Government policy facilities and promotes for project development.
- Foreign investment and technology transfer Act, 1992 and applicable rules and regulations in Nepal encourage the foreign investment. It made the environment of industrial, investment move congenial, straight forward, encouraging and transparent.
- Foreign investment is expected to supplement domestic private investment through foreign capital flows, transfer of technology, improvement in management skills and productivity and providing access to international markets.
- Foreign investment is always welcome in the form of equity, loan, machine supply in credit etc. Re-investment of earnings derived from foreign investment also constitutes foreign investment.

Hydro power is using water to power machinary or make electricity. Water constantly moves through vast global cycle, evaporating from lakes and ocean, forming clouds, precipitating as rain or snow, then flowing bach down to the ocean. The energy of this water cycle, which is driven by the sun, can be tapped to produce electricity or for mechanical tasks like grinding grain. Hydro power uses a fuel- water that is not reduced or used in the process. Because the water cycle is an endless, constantly recharging system, hydropower is considered a renewal energy.

When flowing water is captured and turned into electricity, it is called hydro electric power or hydro power. There are several types of hydroelectric

facilities, they are all powered by the kinetic energy of flowing water as it moves downstream. Turbines are generators it converts the energy into electricity, which is then fed into the electrical grid to be used in homes, business and by industry.

1. Types of Hydropower

There are three types of hydro power facilities; impoundment, diversion, and pumped storage. Some hydropower plants use dams and some do not. The images below show both types of hydropower plants.

I) Impoundment: The most common type of hydro electric power plant is an impoundment facility. An impoundment facility, typical a large hydropower system, uses a dam to store river water in a reservoir flows through a Eurbine, spinning it, which in turn activates a generator to produce electricity. The water may released to met changing electricity need or to maintain a constant reservoir level.

II) Diversion: A diversion, sometime called run of river facility channels a portion of a river through a canal or penstock. It may not require the use of a dam.

III) Pumped Storage: When the demand for electricity is low, a pumped storage facility energy by pumping water from a lower reservoir to an upper reservoir. During periods of high electrical demand, the water is released back to the lower reservoir to generate electricity.

Types of Hydro power Plants

Facilities range is size from large power plants that supply many consumers with electricity to small and micro plants that individuals operate for their own energy needs or sell power to utilities.

Large Hydropower : Although definition vary we define large hydropower as facilities that have a capacity of more than 50 MW.

Medium Hydropower: Although definition vary we define medium hydropower as facilities that have a capacity of 10 MW to 50 MW.

Small Hydropower: Although definition vary we define small hydropower as facilities that have a capacity of below 10 MW.

In addition, we are open to develop multi purpose projects that will include any combination of hydro, irrigation, drinking water flood control, fishery development etc.

1.1.2 Background of the Chilime Hydro power co.

Chilime hydro power company (CHPC) was established in 1996 with an objective of promoting the utilization of resource with the country for development of hydropower. CHPC plant located at Rasuwa district with installed capacity 20 MW was build and commissioned on August 25, 2003. The plant is now in the seventh year of commercial operation. CHPC is a subsidiary company of Nepal electricity Authority (NEA) with 51% equity ownership the first power project of Nepal, with domestic investment. CHPC established with the following vision and mission.

Vision: "To be the largest public hydro power company in Nepal"

Mission:

1. To harness hydropower potential of the country for the benefit of the people at large by optimally utilizing the untapped with the private sector.
2. To ensure attractive and sustainable long-term return to our shareholders through prudent and should investment.
3. To create a competitive working environment with long term career prospects to our employees whereby they will nurture a culture to learn, grow and put their best effort to the growth of the Co.
4. To maximize the public participation and empower them to have better living.

5. To make the communities in which we live, work and serve better places to be.

CHPCL is equally devoted towards fulfilling the social obligations part of corporate social responsibility. The company provides 2.5 million annually to the affected VDCs of Rasuwa district through in the Sarokarsamiti for development in the sector like education, health, drinking water, irrigation and electrification. The support is not only limited through Sarokarsamiti as the company has also been involved in the development activities of the affected and other remote areas.

A repatriate loan agreement for the development of four hydropower project being developed by Chilime hydropower company limited (CHPCL) wa signed between Chilime, the Employees Provident Fund (EPF) and project concerned. Under the agreement, the EPF will provide loans the them worth Rs. 16.60 billion at an interest rate of 12.5%. The four hydropower project includes Rasuwagodhi (111MW), Middle Bhote Koshi (102 MW), Upper Sanjen (14.8 MW) and Sanjen (42.5 MW). The total estimated cost for the construction of hydropower project is Rs. 33.21 billion. CHPCL plans to invest 50% from its own capacity while the remaining will be raised from loans. The upper Sanjen and Sanjen will be completed by 2015, while the remaining Rauwagadi and Middle Bhotekushi will be completed by 2017.

Table 1.1

Present Capital Structure of CHPCL

1.1	Authorized Capital (150,00,000 ordinary share of Rs. 100 each)	Rs. 1500,000,000
1.2	Issued Capital (14,000,000 common share of Rs. 100)	1400,000,000
1.3	Paid up Capital (8,296,000 common share of Rs. 100 each paid up)	829,600,000

Table 1.2

Shareholding Structure of Chilime Hydropower Company

Shareholding Structure	**Ownership %**
Nepal Electricity Authority	51%
Employees of NEA and Chilime Hydropower Company	25%
Residents of Russawa district	10%
General Public/Individuals	14%
Total	100%

1.1.3 Background of Butwal Power Company (BPC)

BPC was established in 1966 by visionary Norwegian engineer Mr. Odd Hoftun as private co. and coverted into public limited Co. in 1993. BPC has a track record of pioneering multifaced capacity building initiative in hydro power development (Project development, electricity generation and electricity distribution).

Pursuing the privatization process in 2003, the Government of Nepal over handed the majority ownership and management control to private investors on public-private partnership model. BPC is registered with the securities Board of Nepal and listed in Nepal stock exchange limited.

Starting off with electrification plan of a small city in the South central Nepal, BPC is the only enterprise which can look back to a four decade long history of success, sustained growth and capacity building in the country.

Through its subsidiary companies, BPC is engaged in operation and maintenance of power plants, consulting engineering of hydro power and infrastructure project, manufacturing and repairs of hydro mechanical and electro mechanical, equipment for power plant.

BPC is committed to operational excellence and believes in good governance, corporate citizenship and creating value for stakeholders.

BPC associates the following Co.

- Himal power limited.
- Hydrolab private limited.
- Jhimruk industrial development.

Subsidiaries Co. of BPC

- BPC services limited.
- Hydro consult private limited.
- Khudi hydropower limited.
- Nepal Hydro and electric limited
- Nyadi Hydropower limited.

Table 1.3

Present Capital Structure of BPCL

1.	Authorized Capital (80,000,000 ordinary share of Rs. 100 each)	Rs. 8000,000,000
2	Issued Capital (16,900,000 common share of Rs. 100)	1,690,000,000
3	Paid up Capital (10152994 common share of Rs. 100 each paid up)	1015,299,400

Table No. 1.4

Shareholding structure of Butwal Power Company (BPC)

Shareholding Structure	**Ownership %**
Sangrila Energy Limited	68.95
General Public /Individuals	10.0
Government of Nepal	9.09
Interkraft Nepal As	6.05
United Mission to Nepal	2.79
Employees	2.00
Nepal Electricity Authority	1.06
Nepal Industrial Development Corporation	0.06
Total	100

1.1.4 Background of Arune Valley Hydropower

Introduction of hydropower development policy is 1991 and electricity act in 1993 opened new avenues for privates. Though it was new to Nepalese investors efforts had been made by a group of individuals to develop hydropower project in Sankhuwasabha district. The company selected Piluwakhola project which was already identified by the government under the study of JICA (Japanese International Fund).

Arune valley hydropower development company limited was established to developed and build power project in 1997 under the company act of Nepal.

The details feasibility study including environmental study of the project has been carried out by Nepalese engineers in 1998. Optimization study has finalized the size of the project into 3000 K.W. Under the government policy to purchase power of small size project upto 5MW at a fixed rate, the company has signed power purchase agreement (PPA) with Nepal Electricity Authority on 23 January 2000.

The company was successful of signing PPA and approval of environmental study in 2000. It was difficult task to get financial closure as banks were not extending loans to hydropower business. In that difficult situation, it was done by forming a consortium of 4 commercial banks and 3 financial institutions. The consortium of bank has financed 68.5% of the total project cost. The remaining 31.5% of the total project cost was obtained through equity share from intellectual group of 82 shareholders.

To make general public participation, the company is converted into public limited company in August 2005. The company floated 30% of its share to public. This is the first hydropower company in Nepal to float its share in premium value. After the public participation, there are 28584 shareholders within the company. The total shares of the company are listed in the stock exchange since 2009. Now, the shares of the company are traded in stock exchange of Nepal.

The company is providing benefits from the sale of energy to the shareholders from the first year of generation. The bank loan shall be fully paid by April 2011. After the clearance of debt, the company will provide extra benefits to the shareholders. The company is planning to develop the bigger size projects in near future. To achieve this, right share will be issued from the existing shareholders. Also the company shell issue debentures for the public investment.

After the completion of Piluwakhola project, the same management group has built 2400K.W. Ridikhola small hydropower project in Western Development Region is in operation-since September 2009. The company has invested Rs. 10 million in the share of Ridikhola Hydropower Company Limited.

The company is also seeking other business that supports hydropower project development. The company has invested Rs. 49 million in promoter share of Janata Bank Nepal Limited, a large capital commercial bank of Nepal. The company has participated in bidding process for establishing cement industry in Nepal.

Table 1.5

Present Capital Structure of Arune Valley Hydropower Development Company

1.	Authorized Capital (1,000,000 ordinary share of Rs. 100 each)	Rs. 1000,000,000
2	Issued Capital (8,000,000common share of Rs. 100)	800,000,000
3	Paid up Capital (2651362 common share of Rs. 100 each paid up)	265,136,200

1.1.5 National Hydropower Company Limited (NHPCL)

Development of small run of the river type hydropower projects for meeting the immediate requirement of power has attracted the attention of the private developers. Such projects are ecofriendly, locally financeable and do not involve any submergence or rehabilitation with the group's commitment

towards the overall development of Nepal and towards maximizing the utilization of the abundant potential of hydropower in the country, NB group has established the National Power Company in joint venture with Lyse Kraft as of Norway in 1996. Lyse Kraft as was founded in 1947 and is currently amongst the five largest power producers of Norway.

NHPCL has currently completed 7.5 M.W. Indrawati III Hydropower Project which was commenced in 1999. This project is located east of Kathmandu. NHPC received the license to transmit the 7.5 M.W. electricity from this projects location to Panchkhal substation, from where the sale of electricity to NEA will take place. The company is also promoting more hydropower projects in the future for which feasibilities are being carried out.

Associate Companies of National Hydropower Company Limited (NHPCL)

- Nepal Bangladesh Bank Limited.
- Nepal Credit and Commerce Bank Limited.
- Nepal Srilanka Merchant Bank Limited.
- Nepal Banladesh Finance and Leasing Company Limited.
- NB Insurance Co. Ltd.
- Harisiddhi Brick and Tiles Factory Limited.
- International Recreation Center Pvt. Ltd.

1.2 Statement of Problem

The main objectives of Hydro power companies is to maximize revenue and reduce its cost in the effective way in constraint of limited resources. Nepal has more possibilities to build the hydro power project /company but could not utilize the natural water resources due to lack of required funds, inefficient management, political interference, labour strikes, unstable investment policy, unskilled manpower etc.

The type of analysis varies according to the specific interest of the party involved. Trade creditors are interested primarily in the liquidity of a firm. Their claims are short term, and the ability of a firm to pay these claims is best judged by means of a through analysis of its liquidity. The claims of bondholders, on the other hand, are long term. Accordingly they are more interested in the cash-flow ability of the company to service debt over the long run. The bondholder may evaluate this ability by analyzing the capital structure of the firm, the major sources and use of funds, its profitability over time, and projection of future profitability.

Investors in a company's common stock are concerned principally with present and expected future earnings and the stability of these earnings about a trend, as well as their covariance with the earnings of other companies. As a result, investors might concentrate their analysis on a company's profitability. They would be concerned with its financial condition in so far as it affects the ability of the company to pay dividend and to avoid bankruptcy. In order to bargain more effectively for outside funds, the management of the firm should be interested in all aspects of financial analysis that outside suppliers of capital use in evaluating the firm. Management also employs financial analysis for purposes of internal control. Its also concerned with profitability on investment in the various assets of the company and in the efficiency of asset management and researcher expects that the study on selected topic will be able to solve following problem.

1 How do the Chilime hydro power and Butwal power companies manage their financial position?
2 What is the profitability position of CHPC and BPC?
3 What is the financial condition of these companies?
4 What is the relationship between net profit and net worth of these companies in study period?

1.3 Objectives of the Study

The main objectives of the study is to analysis financial condition and profitability of hydro power companies listed in Nepal stock exchange. The objectives of the study are below.

1 To analyze the financial position by using financial tools.
2 To analyze the profitability condition of CHPC and BPC.
3 To identify financial efficiency in the organization.
4 To measure the relationship between net profit and net worth of CHPC and BPC.

1.4 Significance of the Study

Research work is very important to gain new knowledge and to verify the existing knowledge. This study attempts to identify financial position in the hydro power industry and their contributions toward profitability. In this study financial analysis helps to indicate and to follow the financial position in effectively hydro power companies. This study also helps the researcher, investors, electricity consumers, entrepreneur, industrial and other stakeholders to analyze and provide signaling information about the organization. This study helps to increase investment in hydro power sector and identify the most important investment sector which directly effects on industry during the power crisis periods.

1.5 Limitation of the Study

This research study had been conducted with certain limitation. This study also has some limitation which are as follow:

1) The study focused on only financial analysis and profitability of CHPC and BPC.
2) There were no others study in the topic of hydropower like technical aspect.
3) Time and resources constraint.
4) Sample size is also one limitation.
5) The study based on secondary data.

1.6 Organization of the Study

This study has been organized in the following chapter - structure.

I. Introduction

It is the first step of thesis writing. This chapter has included background of the study, Background of the Chileme Hydropower Company Limited, Butwal Hydropower Company Limited, Arune Valley Hydropower Development Company Limited and National Hydropower Company Limited, Statement of the Problem, Objective, Significant, Limitation of the Study and provide a path of research by the statement of problem as 'problematic'.

II Review of the Literature

The statement of problem may similar in various research works. To make the research work original, comparable and for the theoretical relevance the researcher need to review of the work done by others in this area of study.

III Research Methodology

In this section, we should briefly explain the method of research that the researcher are going to adopt method of data collection source of data and tools and techniques of analysis of such data.

IV Data Presentation and Analysis

It is the main part of research work. This chapter shows the clear presentation of the collected data and analysis the presented data. There are many analyzing tools and techniques, which are presented in relative chapter.

V Summary, Conclusion and Recommendations

This chapter provides the brief summary of the research work and major findings. With the help of finding, conclusion are made and recommended to the related organization.

CHAPTER-II

REVIEW OF LITERATURE

In this chapter available literature, relating to hydropower and views expressed by various scholars, and researchers on financial analysis of public enterprises has been reviewed. Conceptual foundation is a most important part of every study. Without clear concept on subject matter may not go through right way. It provides the guidelines for further study and helps to avoid the unnecessary duplication in research work. This chapter is divided into two parts theoretical review and research review. Research review includes the review of relevant past studies.

2.1 Theoretical Review

This sub-chapter presents the theoretical aspect of the study. It includes the historical background of hydro power in Nepal.

2.1.1 Historical Background of Hydro Power in Nepal

Endowed richly by nature with immense hydropower potential, Nepal has been using thousands of water wheels for agro-processing purpose since early days. There are about six thousands big and small rivers is Nepal hurling from mighty Himalayas and high mountains towards the plains of Tarai. The enormous hydropower potential of those rapid rivers in estimated to be about 83000 MW. It has been assessed that upto 42000 MW can be exploited technically and economically in the present context.

The first hydropower plant, Pharping of 500 K.W. was constructed in Nepal in BS 1968 to electrify the places of the autocratic ruler Rana family. After a long period of 25 years in B.S. 1993 a second hydropower plant of 900 KW was installed at Sundarijal near the capital, Kathmandu, and a third, hydropower plant of 2.4 MW Panauti came into operation only in B.S. 2022 and after that time other hydropower plant was established in Lantang, Morang with the aim

of providing electricity to Biratnagar area. In order to meet the increasing demand of electricity both in and out of Kathmandu city, several hydropower and dissel plant centers were established after BS 2013. Among the important ones of these are Trishuli (21MW), Sunkoshi (10.05 MW), Gandak (15MW), Kulekhani I (60MW), Devighat (14.10 MW), Kulekhani II(32MW), Marsyagdi (69MW), Khimti (60MW), Midikhold (14.8MW), Bhote Koshi (36MW), Kaligandaki 'A' (144 MW), Chilime (20MW), Middle Marsyandi (70MW)

Currently, construction works on Rahughat (32 MW), Chameliya (30MW), Kulekhani III (14MW) upper Tamakoshi (456 MW) has been ongoing. GON agreement with Seno Hydro Power Company to construction works reservoir west seti 750 (MW).

In the institutional set up before BS 2019, there was a Bejulee Adda under electricity department of HMGN (Now GON and hereafter referred as GON) to look after and administer electricity service in the country. In order to facilitate electricity services more efficiently as a single organization, Nepal electricity corporation act was enacted in B.S. 2019. This Act bought forward to facilitate and improve electricity supply at the country wide level, this act was put into action firstly on those areas where electricity was being supplied by Pharping, Sundarijal, Kathmandu, Teku and Bhaktpur centers. In B.S. 2031, a separate electricity corporation eastern electricity corporation was established in Biratnagar to facilitate electricity supply to the eastern part of Nepal in B.S. 2039. However, both Nepal Electricity Corporation and eastern electricity corporation were merged into a single organization. Prior to B.S. 2039, there was electricity department of GON and several other electricity divisions to facilitate electricity construction and distribution works. These different types of organization working on the same service naturally required two-way expenditure and barriers were felt in handing administrative works. Thus, gradually, the need for a unified organization started to be felt which could supply and distribute electricity service without administrative hindrances. So

this effect, Nepal Electricity Authority (NEA) was created on August 16, 1985 under the Nepal Electricity Act 1984 (B.S. 2041).

Nepal Electricity Authority was established as a unified organization in B.S. 2042. The history of Nepal Electricity Authority which was started from pharping hydro electricity center with 500 K.W. capacities (including private and others) Nepal Electricity Authority (NEA) was leading company to build hydropower project and distribution of electricity and make power purchase agreement with the private hydropower company.

2.1.2 Advantage of Hydro Power Project

Hydropower relies on the water cycle, which is driven by the sun, thus it's a renewable power source. Hydropower is a fueled by water, so it's clean fuel source. Hydropower does not pollute the air like power plants than burn fossil fuels, such as coal or nature gas. Hydropower is generally available as needed, engineers can control the flow of water through the turbine to produce electricity on demand. Hydropower plants provide benefits in addition to clean electricity. Impoundment hydropower creates reservoirs that offer a variety of recreational opportunities, notably fishing, swimming and boating. Most hydropower installation are required to provides some public access to the recess to the reservoir to allow the public to take advantage of their opportunities. Other benefits may includes water supply and flood control.

2.1.3 Disadvantage of Hydropower Project

Fish populations can be impacted if fish cannot migrate upstream past impoundment dams to spawing grounds or if they cannot migrate downstream to the ocean. Upstream fish passing can be aided using fish ladders or elevators, or by trapping and hauling the fish upstream by truck. Downstream fish passage is aided by diverting fish from turbine intakes using screens or racks or even underwater lights and sounds, and by maintaining a minimum spill flow past the turbine.

Hydropower can impact water quality and flow. Hydropower plants can cause low dissolved oxygen level in the water, a problem that is harmful to riparian (river bank) habitats and is addressed technique, which oxygenate the water. Maintaining minimum flows of water downstream of a hydropower installation is also critical for survival of riparian habitats.

New hydropower facilities impact the local environment and may compel with other uses for the land. Those alternative uses may be more highly valued than electricity generation. Human, flora and fauna may lose their natural habitat. Local cultures and historical sites may be impinged upon. Some order hydropower facilities may have of these facilities must also be sensitive to such preservation concerns and impacts on plant and animals life.

2.1.4 Financial Statement and Analysis

Financial statements depict the actual position of a firm in terms of monetary value at a particular point of time. Most important financial statements are income statement, balance sheet, profit and loss account that organization prepare at regular intervals.

Generally, the tasks of preparing, examining and analyzing different parties carry out the financial statements. Among varies jobs, analysis of statement and application of findings is most important part for the financial management.

Accountants keep the records of actual transactions and prepare financial statement periodically using the actual data. Upon completion of financial statement, auditors examine them and make sure that figures. The job of analysts them is to analyze such audited statements to see if the results meet the objectives of the firm, to identify problems and to provide recommendations to solve the problem.

2.1.5 Concept of Ratio Analysis

Financial analysis is such process of knowing the financial strength and weakness of the company by properly establishing relationships between the items and titles of balance sheet and profit and loss account. Ratio analysis is much powerful tools of financial analysis. Financial ratio is most frequently and widely used in practice to assess companies financial performance and condition.

Many researchers have used financial ratio to analyze the financial performance of business activities. Kothari, C.R. (1989) stressed that "The technique of ratio analysis is a part of the whole process of the analysis of financial statement of any business of the industrial concern, specially to take output and credit decisions."

To make rational decision is keeping with the objectives of the firm, the financial manager must have analytical tools. The ratio analysis is more useful tool of financial analysis (James C. Van Horn, 2003). Ratio analysis is one of the most commonly used techniques of financial statement analysis. Pradhan, S. (2004) have stressed that it is a simple but meaningful technique of measing operating performance and evaluating managerial performance of a organization on. Ratio are calculated, and compared with relevant industry averages ratio or specific standards ratio in order to see whether or not the performance is at a satisfactory level. Van Horn (2003) argue that to evaluate the financial condition and performance of a company, the financial analyst needs certain yardsticks. The yard stick frequently used is ratio, or index relating two pieces of financial data to each other. Especially for our purposes, financial ratios are classified into five sets: liquidity, asset management, debt management, profitability ratio and market value ratios.

A. Liquidity Ratio – to examine liquidity position.

B. Assets Turnovers Ratios – to examine operating efficiency.

C. Debt management Ratio – to examine financial leverage

D. Profitability Ratio – to examine earning power

E. Market value Ratios – to examine market value.

Liquidity Ratio

It is extremely essential for a firm to be able to meet its obligations as they become due. The liquidity ratio measures the ability of a firm to meet its short term obligations (liabilities) and reflect the short term financial solvency of a firm. In fact, the lack of sufficient liquidity of the firm results enable to meet its obligations as they become due to it will result in bad credit image, loss of creditor's confidence or even in legal tangles resulting in the closure of the firm. On the other hand very high degree of liquidity is also bad, idle asset earn nothing so a proper balance is required between high liquidity and lack of liquidity. Liquidity ratios are used to judge firm's ability to meet short-term obligations. Liquidity is a the requirement for the survival of a firm. The short-term creditors of the firm are interested in the short-term solvency. Short-term liquidity ratio involver the relationship between current assets and current liabilities. Two ratio are mainly used to measure the liquidity positions:

i. Current Ratio.

ii. Quick Ratio or Acid Test Ratio

Financial Leverage/Solvency Ratio

The term leverage is defined as the employment of assets or sources of funds for which the firm has to pay a fixed cost or fixed return or fixed charges. These are mainly two type of leverage- operating and financial leverage. The leverage which is associated with assets acquisition activities or investment activities is known as operating leverage related with financing activities is referred to as financial leverage. The term leverage is quite commonly used to

describe the firm's ability to use fixed cost assets or funds to magnify the returns to its owners (Gitman, 1968)

The financial leverage is described as the ability of the firm used fixed financial charges to magnify the effects of changes in EBIT on the firm's earning per share. In other words, financial leverage involve the use of funds obtained at a fixed cost in the hope of increasing the return to the shareholders (Khan & Jain, 1992). There is no hard and fast rule to determine the optimum financial leverage for a firm. It depends upon the number of factors such as; size, nature, economic condition, performance and others. Gitman (1968), stressed that an acceptable degree of financial leverage for a industry or line of business may be highly risky in another due to the different operating characteristics between industries or line of the firms or business. Interest coverage ratio is mainly used to measure the financial leverage.

Activity/Turnover Ratio

The activity ratios are also called turnover ratios because they indicate the speed with which assets are being converted or turned over into sales. The funds of owners and creditors are invested in various assets, to generate sale and profits while being the better managed of assets, the larger amount of sales. These ratios are employed to evaluate the efficiency with which the firm manages and utilizes its assets. A proper balance between sales and assets generally reflects that assets are managed well. Generally, following four ratios are used in practice.

I. Inventory Turnover Ratio.

II. Fixed Assets Turnover Ratio.

III. Total Assets Turnover Ratio.

IV. Average Collection Period.

V. Debtor Turnover Ratio.

Profitability Ratio

Profit is the difference between revenues and expenses over a period. A firm should earn profit to survive and grow over a long period, and it will have no future if it fails to make sufficient profits. Therefore, the financial manager should continuously evaluate the efficiency of its firm in terms of profits. The adequate return and operating efficiency depend upon the profit earned by a company. "A company should be able to produce adequate profit on each rupees of sales. If sales do not generate sufficient profit, it would be very difficult for the firm to cover operating expenses and interest charges, and as a result we fail to earn any profits for owners (Pandey, 1999). The profitability of the firm should also be evaluated in terms of the firm's investment in assets and in terms of firm's investment in assets and in terms of capital contributed by creditors and owners. If the company is unable to earn a satisfactory return on investment its survival is threatened.

Profitability ratios measure the success of the firm in earning a net return on sales or in investment. This ratio give the decision about how effectively the firm in being managed profitability ratios can be classified into major following groups.

I. Net Profit Margin

II. Operating expenses ratio

III. Return on Total Assets

2.1.6 Cash Flow Analysis

Cash flow statement gives complete information about how activities are financed, how financial resources are applied during a period and what is the liquidity position of a firm? The cash flow analysis provides truthful summary of management decision on operating, investing, and financing activities.

Followings are the three steps of preparation of cash flow statement from the direct method.

a. Determination of cash flow from operating activity.

b. Determination of cash flow from investing activities.

c. Determination of cash flow from financing activities.

a. Determination of Cash Flow from Operating Activities: The direct of cash flow converts its income statement from accrual basis to the cash flow from operating activities includes receipt from customers for sales of goods and services (collection from debtors). Cash outflow from operating activities include payment to purchase of materials and for services, payment to employees for services and payment made to government for taxes and duties.

b. Determination of Cash Flows from Investing Activities: Investing activities involves making collecting loans and acquiring and disposing of fixed assets. Cash inflows from investing activities are receipts from sales of shares, debenture or similar instruments of other enterprises. Cash outflow under investing activities are purchases of share and debenture of other enterprises, purchase of fixed assets etc.

c. Determination of Cash Flows from Financing: Financial activities involves obtaining resources from owners and providing them with or return of their investment, borrowing money and repaying amounts borrowed. It also including incoming of cash by issue of share and debenture, issue of long term loan etc. undergoing of cash, redemption of preference share and debenture, repayment long term loan, payment of dividend, repayment of principle with interest etc.

2.2 Research Review

Research review includes some related articles, review of journals, and related dissertation. They were related with financial analysis of hydropower companies.

2.2.1 Review of Journal and Articles

International electrotechnical commission (IEC) is the world leading organization that prepares and publishes that prepare and policies international standards for all electrical, electronic and related technological.

A world of opportunity: Hydro Energy around the Global.

Hydro is high on the global agenda as nations look to energize their economic, bring power to remote regions, and move toward clean, renewable generation. Hydro Review Worldwide (HRW) looks, at the status of hydropower each continent, some of the major project under way and the factors that will drive hydro development in the future.

(Hydro Review Worldwide-volume 20, Issue 2, March-April 2012)

The financial evaluation methods of hydropower

(Browe > Conferences> Artificial intelligence, management)

The financial evaluation methods of hydropower……. E. Borgonouvo, L. Peccati, Sensitivity analysis in investment project evaluation, International journal of production economics …… (jee explore.ieee.org./xels/abs.all.jsp)

This paper appers in: Artificial Intelligence Management Science and Electronic Commerce (AI MEC), 2011 second conference on, The article will provide an idea to investor for review and investment decision. Making without errors through the use of funds and financing plan, sale estimates, the

total cost, current asset, loan and repayment term, profit and distribution, solvency, profit ability and the financial sensitivity.

Taylor & Francis Online:

Extended benefit - Cost analysis: quantifying at Feb 17, 2012. It develops the financial economic and extended benefit - Cost analysis assuming the hydropower. ……. (www.transfonding.com/doi/asb/10.1080….)

Project Appraisal, value 9, Issue 4, 1994

Extended benefit- Cost analysis: qualifying some environment impact in a hydropower project.

Traditionally, economic analyses were confined to inputs and outputs incurred or produced directly by the project. Now, many indirect costs are includes in the economic analyses by means of environmental and/or non-market valuation. This process is called the intended benefit -cost analysis. A case study is presented for a hydropower project from Srilanka, for which an attempt was made to quantify and incorporate in monetary terms the cost of the some environmental impacts to the economic feasibility, using valuation techniques based on the principle of environmental economics. It develops the financial, economic and extended benefit- Cost analyses assuming the hydropower project to be demand diven. (Dr. Malik Rana Singhe: Page 243-251)

Evaluation of static hedging strategies for hydropower producers in Nordic Market

In this paper, develop an optimization model to derive static hedge position for hydropower producers with different risk characteristics previous research has primarily considered dynamic hedging, however, static hedging is the common choice among hydropower producer because of its simplicity. Our contribution is to evaluate such hedging out of sample. the hedging strategies, we analyze includes a natural hedge, which means no hedging, and output from an

optimization model that we develop our selves. The result show that, although optimized positions vary over time, hedging with use of forward contracts significantly reduces the risk in terms of value —— at — risk, conditional value of value — at — risk and standard deviation of the revenue. Furthermore, this improvement results in only a minor reduction in mean revenue.

Risk Analysis for Oversea Hydropower Plant BOT Project Business

China has been developing very fast in recent decades. Response to the government to the government's call of "going out development strategy", the passion of our engineer contractors for foreign direct investment is in upswing. BOT (Build Operate Transfer), a means of project financing, has been globally introduced and put into practice in both developing and developed countries as a new kind of international economic and technical co-orperation. In order to enlarge the international market and gain a foothold, Chinese engineering contractors must participate in over-sea BOT projects. Developing an oversea hydropower plant BOT project, there always goes with such as political risk, economical risk, financial risk, social risk, environmental ……..risk, and risk of hydropower industry etc. How to analyze all the risk and establish strict risk management successful BOT project as well as core in project negotiation. The main content of this article is risk researching is the oversea hydropower plant BOT project. Risk researching is the precondition of the project's decision making and risk analysis and countermeasures and so on. It the first part present the background of this researching article and concludes oversed investment is international trend, then brings forward risks of oversea hydropower plant BOT project and necessity of the risk researching. The 2nd part, recognizes and analyzes investment environment risk and hydropower industrial risks according to the characteristics of oversea hydropower plan BOT project, the researching works includes qualitative analysis. The final part introduces Khadrori project as typical case, analyzes all the risks which met in the project construction, and brings forward relevant countermeasures for explaining risks is inevitable in an oversea BOT project. The author hopes

these real experience and lessons could be used for reference by Chinese engineering contractors. Finally, the conclusion is that developing oversea hydropower plant BOT project is indispensable. Risk research should base on the hydropower industrial risk (in micromic) and the investment environment risks (in macroscopically). The keystones are investment environment risk analysis and countermeasure of the host country especially political risk. (www.business-finance.org/industrial)

The article of hydropower project: Financial analysis with the country of Vietnam published on March 26, 2011. The objective of this article is to undertake and present a financial analysis of the proposed Trung son hydropower (the project) that meets the appraisal requirements of the World Bank. The Government of Vietnam (Gov) has requested that the Bank consider the provision of a loan to the socialist Republic of Vietnam for the funding of a portion of the cost of the project. The loan is to be provided by the International Bank for Reconstruction and Development (IBRD) and onlet to Vietnam Electricity (EVN), the project owner. In addition to this introductory section, article is presented in three sections as follows: section two, scope and key assumption, section three, project financial analysis, and section four, project company financial projections. In addition to the main text of this report, apex 'A' provides a presentation on of detailed financial analysis. Appex 'B' provides projected financial statements (Income statement, balance sheet, cash flow statement) for the project company. (www.wds.worldbank.org/…../ WDSServlet)

Sharma (2011) conducted the study of problem and prospects of hydroelectricity status and focus of the Budge (2068/069) in Nepal on the study, hydroelectricity is the most important sources in Nepal with a total installed capacity of about 800 MW at present. Hydroelectricity can facilitate the development of agriculture, industry, transportation, forest conservation, import substitution of petroleum product and export promotion of electricity. He also suggest that government has shown the concern of power supply in the

nation, which need implementation in reality through immediate action. Program just for gaining political popularity should be discouraged. Nepal's hydroelectric potential exceeds her requirement and can be used to boost up exports on a substantial scale. Annul investment on hydropower should be made continued in the series of year, through the country itself. Domestics and foreign investment encourages in hydropower sector. The deposited fund of Nepal Army and Nepal police should be mobilized by giving proper security. Political commitment on hydropower development should be made from the major political parties. (Pragymanch, year 25, issue No. 11, 2011)

2.3 Review of Dissertation

Under this section various thesis related to this study have been reviewed. These are as follows.

Basyal (1986) has done a study on the, "Financial statement analysis of National Trading Limited" in 1986 the basis basic objective of this study is to identify the strength and weakness of the National Trading Limited in its financial and operational matters.

In this study, he find the gross profit of the company reduced sharply, the short term solvency position of the company deteriorated as shown by extremely low current ratio and quick ratio, the working capital position of the company is extremely precarious and the efficiency in operation is also disappointing. He also, find that the management performance of the company has reflected unsatisfactory financial state of affairs as it marked by high ratios of net loss to negative net worth and most of the funds are applied for meeting the operating losses.

Deoja (2001) conducted study entitled, "A comparative study of the financial performance between Nepal State Bank of India Limited and Nepal Bangladesh Bank Limited. The researcher's main objective of the study was to evaluated the trend of deposit and loan and advances of NSBIL and NBBL and to evaluate the liquidity, profitability, capital structure, turnover and capital

adequacy position of NSBIL and NBBL. Through research found that the cash and bank balance to current asset, saving deposit to total deposit of NABIL are higher while filed deposit to total deposit, loans and advanced to current asset of NBBL are higher, and NBBL has better turnover than NSBIL in term of loan and advances to total deposit ratio and loan and advances to fixed deposit ratio. Through the study of the different ratios has conducted that both banks are highly leveraged.

Mr. Gurung(2008) conducted the research on "A case on the financial performance analysis of standard chartered Bank Nepal Limited in CAMEL Framework" with the main objective to analyze capital adequacy & liquidity position of SCBNL and compare with regulatory minimum capital requirement, management soundness, quality of assets and evaluate risk weighted assets, to evaluate the level, trend and stability of SCBNL's earning. SCBNL has not met capital adequacy the requirement of NRB during the study period, total loan is found decreasing trend during the study period, the quality of asset is strong over the study period, the bank has maintained reasonable liquid position on its loans and advances but not adequate liquidity it the value.

Thapa (2007) has conducted a research on "Financial Performance analysis of Nepal electricity Authority" The main objectives of study was to analyze the trends and liquidity position, trends of turnover ratio, debt servicing of capacity, profitability condition and trend of working capital of Nepal electricity Authority (NEA). This study is associated with some specific objectives were to analyze the performance of NEA through financial analysis. Its concludes that the liquidity position of NEA is decreasing year by year. The observed value of current and quick ratio also show the poor short term liquidity position over the study period. The bills receivable are blocked the revenue and indications in the reduction profits. NEA could not utilize the assets properly and using excessive debt and does not proper utilized and it indicates higher probability of default. There is no effective of total assets of NEA.

2.4 Research Gap

From the above it is clear that different studies have focused on financial analysis of hydropower companies. Many researcher were done financial analysis of banking and financial sectors but not research in hydropower sectors. This research has attempted to analyze the financial analysis of hydropower companies obtaining recent data to find out the objective of research work.

CHAPTER-III

RESEARCH METHODOLOGY

3.1 Introduction

Research methodology is a path or guidelines of research works which makes sequential and systematically. Research methodology is the investigation tools of certain area and it means clearly observation of certain object. In order to accomplish the objectives at this stud the research methodologies have been designed on the basis of secondary data by using financial and statistical tools.

This chapter deals with the research methodology used to ascertain the study objectives. Under this, research design, nature and sources of data, population and sample and method of data analysis technique are discussed.

3.2 Research Design

Research design is an outline or strategy for collection and analysis of data. It acts as a top most frame works for the study, guiding and collection and analysis of data, as it is cheaper and effectively. Guidelines for planning and executing research work. It is the outline, the scheme and standard of the operation of the variables. Strategy implies how the research objectives will be reached and how the problem encountered in the research will be tackled.

The main objective of the study is analyze financial condition, and profitability of the hydropower companies. The study follows the analytical and descriptive research design. In order to achieve the objective of the study, secondary data has been used.

3.3 The Population and Sample

Population of this study includes all listed Hydro power companies in Nepal stock exchange. At present there are 4 hydro power companies listed their

share in NEPSE. They are: Chilime hydro power company Ltd. (CHPCL), Butwal power company Ltd. (BPCL), Arune valley hydro power company Ltd (AHPCL) and National Hydropower Company Limited (NHPCL). They have been only considered as population for the study, two leading private Hydro power companies are selected as sample. The sampled hydro power companies are chilime hydro power company limited and Butwal power company limited which is convenience sampling method.

3.4 Tools for Analysis

For the purpose of data analysis, various financial and statistical tools have been used to achieve objective of the study. The evaluation of data has been carried out of the pattern of data available.

Different tools have been selected according to the nature of data as well as subject matter. The major tool employed for the analysis of the data is ratio analysis, which established the numerical relationship between two variables of the financial statement. Besides financial tools, the statistical tools are also used.

3.4.1 Financial Tools

Financial analysis is the process of identifying the financial strength and weakness of the firm by properly establishing relationship between the items of the balance sheet. In this study, ratio analysis is used as the financial tools for the data analysis.

3.4.1.1 Ratio Analysis

Ratio analysis is a technique of analyzing and interpreting financial statement to evaluate the performance of an organization by creation the ratio from the figure of different accounts consisting in income statement, balance sheet and profit and loss account. The qualitative judgement concern financial performance of the a firm can be carried out with the help of ratio analysis.

Even though there are many ratios, only those ratios have been covered in this study.

To evaluate the financial condition and performance of a company, the financial analyst needs, certain yards- sticks. The yardstick frequently use is a ratio, or index, relating two pieces of financial data to each other. Analysis and interpretation of various ratios should give experienced, skilled analysts a better understanding of the financial condition and performance of the firm than they would obtain from analysis of the financial data alone.

The analysis of financial ratio involves two type of comparison. First, the analyst can compare a present ratio with past and expected future ratios for the same company. The current ratio for the present year end could be compared with the current ratio for the preceding year end. When financial ratio are arrayed on a spreadsheet over a period of years, the analyst can study the composition of change and determine whether there has been an improvement or a deterioration in the financial condition and performance over time. The second method of comparison involves comparing the ratios of one firm with those of similar firms or with industry averages at the same point in time. Such comparison gives insight into the relative financial condition and performance of the firm.

Types of Ratio

The parties which generally undertake, financial analysis are short term creditors are main interested in firm's to meet their claims over a very short period of time. However, long-term creditors are more interested in the firm's long term solvency and survival of the firm. Similarly, owners/investors are more concentrated about firm's earnings. As such, they concentrate on the analysis of the firm's present and future profit ability and financial conditions. Management is interested in evaluating overalls activity of the firm's performance. In research study, various financial tools are employed for the

analysis. There are more then 200 ratios existing study, but in this study, some elected ratio are used. These are as follows.

- Liquidity Ratio
- Activity/Turnover Ratio
- Profitability Ratio

Liquidity Ratio

Current Ratio: The current ratio is measure of the firm's short term solvency. It indicates the vailability of current asset in rupees for every one rupee of current liability. A ratio of greater than one means that the firm has more current assets, than current claims against them Pandey (1999). Current ratio is the proportion of current assets to current liabilities:

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

Current Assets: Cash and those assets, which can be converted into cash within a year, such as marketable securities, account receivable, inventories and prepaid expenses.

Current liabilities: All the obligations maturity within a year such as creditors, bills payable, accured expenses, bank over draft, income tax liability, interest and long term debt maturity within current year.

The current ratio represents a margin of safety for creditors. Normally as a standard rule, a current ratio 2:1 is considered satisfactory for most firms, although an illogical standard 2:1 should not be blindly followed. Firm, with less then 2:1 current ratio may be doing well and with 2:1 or higher ratio may be struggling to meet their liabilities. So it is a test quantity, not quality.

Quick Ratio: Quick ratio is the proportion of quick assets to current liabilities, which is more accurate of liquidity than the current ratio. Quick asset may be defined as current assets minus inventory quick or liquid assets have nature of immediate or timely convertibility into cash without a loss of value whereas, closing stock is not convertible into cash in timely and value of closing stock

may decline while converting into cash. In essence of the quick ratio it is said that "It is a measurement of a firm's activity to convert its current assets quickly into cash in order to meet its current liabilities" Khan & Jain (1992). It is calculated as follow:

Quick Asset = $\frac{Current\ Asset - Invventries}{Current\ Liabilities}$

Inventory takes more time to convert into cash processing through receivable and excluded from current assets. As a guideline 1:1 quick ratio is believed adequate for most firms as the standard higher ratio indicates that the firm has excessive quick assets, and indicates inefficient management. A low ratio it the indicator of difficulties in the timely payment of future bills.

Activity/Turnover Ratio: Inventory Turnover Ratio: Inventory turnover ratio indicates how rapidly the inventory turning into sales. Inventory turnover ratio calculated by dividing the sale by inventory.

Inventory Turnover Ratio = $\frac{Sales}{Inventories}$

Generally, high inventory turnover is indicative of good inventory management. Sometimes a comparatively high inventory turnover ratio may be adversely result because there is chance of very low or danger level of stocks. When the inventory turnover ratio is relatively low, it indicates slow-moving inventory or obsolete of some stocks. Thus, too high and low inventory turnover ratio should be considered further.

Capital Employed Turnover Ratio: This ratio is calculated to know the effectiveness it utilizing the capital employed for making sales activity. Higher the capital employed turnover ratio shows the maximum utilization of capital employed for making sales activity. The following formula is applied to calculated capital employed turnover ratio.

Capital Employed Turnover Ratio = $\frac{Sales}{Capital\ Employe}$

Capital employed= Total asset – Current liabilities

Fixed Asset Turnover Ratio: The firm may wish to know its efficiency of utilizing fixed asset and current assets. Fixed Asset Turnover Ratio measures the efficiency with which the firm is utilizing its investment in its various fixed assets. It is calculated as:

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

Net fixed asset is defined as gross fixed asset minus depreciation. The ratio expresses that a rupee of investment in a net fixed asset generates the resulted sales. Generally, high fixed assets turnover ratio indicates efficient utilization or fixed asset while in efficiency in utilization is shown by low fixed asset turnover ratio.

Total Assets Turnover Ratio: Similarly, as fixed assets turnover ratio total asset turnover ratio indicates the sales generated per rupee of investment in the total assets. The ratio is calculated as:

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

Where, total assets constitute the fixed assets as well as current assets and investment on the firm. Generally, higher turnover ratio shows efficiency in utilization or firm's limited resources and vice-versa.

Profitability Ratio

Net Profit Margin: The net profit margin established the relationship between net profit and sales. Net profit is obtained when operation, expenses, interest and taxes are minus from the gross profit. The ratio measures the firm's ability to change each respect sales into net profit. Thus net profit margin computed by the following way:

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

Generally, it is also expressed in percentage. A higher ratio is the sign of efficient management. Hence higher percentage is preferable of the company and vice versa.

Return on Total Assets Ratio: Measures the profitability of Hydropower Company that explains a firm to earn satisfactory return on all financial resources invested in the hydropower company's assets. The ratio explains net income for each unit of assets.

The return on total assets ratio is calculated by following formula.

$$\text{Return on Total Assets} = \frac{Net\ Profit\ After\ tax}{Total\ Assets}$$

Higher ratio indicates efficiency in utilizing its overall resources and vice versa. From the point of view of judging operational efficiency, rate of return on total assets is more useful measure.

Return on shareholders' Equity : Shareholders are the owners of the company. To measure the return of shareholders, we use on shareholders, equity. This ratio analyze whether the company has been able to provide higher return on investment to owners or not. It is calculated as follow.

$$\text{Return on shareholder's Equity} = \frac{Net\ Profit\ After\ Tax}{Share\ Holder'Equity}$$

A company's owners always prefer higher ratio of return on shareholder's equity. The higher ratio indicates the higher profitability of the firm and vice versa.

Earnings Per share (EPS) Analysis : The profitability of hydropower from the point of view of the ordinary shareholders is earning Per share. The ratio explains net income for each unit of share. Earning is Per share of an organization give the strength of the share in the market. It shows how much of the total earnings belong to the ordinary shareholders. EPS is calculated as:

$$\text{EPS} = \frac{Net\ income}{No.of\ Ordinary\ Shares}$$

Dividend Per share (DPS) Analysis : Dividend Per Share is calculated to know the share of dividend that the shareholders receive in relation to the paid up value of the share. A large number of Present and potential investors may be interest in the dividend Per share, rather than the earning Per share. Therefore, an institution offering a high dividend Per share is regarded as efficient in fulfilling shareholders expectations, which will also enable to increase the value of an institution.

Dividend Per Share is the earning distribute to ordinary shareholders divided by the number of ordinary share outstanding.

$$\text{DPS}=\frac{Total\ Dividend}{No.of\ ordinary\ Shares}$$

Price Earnings Ratio : Price earnings ratio reflects the price currently being paid by the market for the each rupee of currently reported EPS. In other words, it measures investor expectations and the market appraisal of the performance of a firm. It is an indicates view of investors think the hydropower companies would perform better in the future. Higher market price suggest that investor expect earning to grow and this gives a high P/E ratio implies that investor feds that earning are not likely to rise. P/E ratio is calculated as follows:

$$\text{P/E Ratio} = \frac{Market\ Price\ Per\ Share}{Earning\ Per\ Share}$$

Operating Expenses Ratio: A ratio between operating expenses to sales is know as operating ratio. It is the standard way for evaluating operating efficiency, which can be computed as dividing operating expenses by sales.

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

Operation Expenses is operating expenses includes cost of good sold and operating cost and expenses, selling expenses, distribution expenses, interest on short-term loan etc.

In general higher operating ratio tells inefficience due to higher operating cost in term of sales. Lower operating ratio is favourable since it will generate higher operating income, which will be sufficient to meet interest, divided and other expenses of the firm.

3.4.1.2 Cash Flow Analysis

Cash flow statement is that type of technical device which shows the inflows and outflow of cash and cash equivalent during the year. Cash flow statement is somewhat similar to funds flow statements. Cash flow statement attempts to report only cash movement by the sources and uses of cash. It shows cash generated from various activities such as operating, investing and financing and their need of cash. It makes easier to the basic management decision on operating, investing and financing activities and referents the cash availability, change in financial position of working capital position between two different date.

3.4.2 Statistical Tools

Statistical tools are useful to research the objectives of the study. It help us to analyze the relationship between two or more variable. In this research, the following statistical tools are applied.

The statistical tools are used for data analysis.

- Mean
- Standard Deviation.
- Karl Pearon's Coefficient of Correlation
- Probable Error

3.4.2.1 Mean

The arithmetic mean is the sum of total values of the number of values in the sample.

3.4.2.2 Standard Deviation (S.D.)

Standard deviation is an absolute measure of dispersion. The standard deviation is the square root of mean squared deviation from the arithmetic mean.

3.4.2.3 Correlation Coefficient (r)

Correlation coefficient measure the relationship between two or more than two variable. When they are related the change in the value of one variable is accompanied by the change in the value of the other variable. In the other words, it indicates the direction of relationship among variables.

A method of measuring correlation is called Pearson's coefficient of correlation. It is denoted by 'r',. The correlation coefficient can be calculated by using following formula.

$$r = \frac{N\sum xy - \sum x \sum y}{\sqrt{N\sum x^2 - (\sum x)^2}\sqrt{N\sum y^2 - (\sum x)^2}}$$

Where,

N = Numbers of Observation.

x and y are variable

The decision criteria:

When, r = o, there is no relationship between the variable

r = 1, the variable have perfectly positive correlated.

r = -1, the variable have perfectly negative correlated.

3.4.2.4 Probable Error (P.E.)

P.E. interprets the value of correlation co-efficient. It helps to determine applicability for the measurement of reliability of computed value of the correlation coefficient 'r'. It can be calculated as:

$$\text{P.E.} = 6 \times \frac{0.6745 \times (1 - r^2)}{\sqrt{N}}$$

Where,

r = Correlation Coefficient

N = Number of Pairs of Observation

If the value of r is less than the probable error there is no evidence of correlation, i.e. the value of r is not significant.

If the value of r is more than 6 times of probable error the coefficient of correlation is practically certain, i.e. value of r is significant.

CHAPTER -IV

DATA PRESENTATION AND ANALYSIS

This chapter is the most important past of the study. In this chapter, collected data has been analyzed and presented mathematically. The research has followed the methodology described in this third chapter in order to attain the objectives.

The main objectives of the study to analyze financial condition and profitability of CHPCL and BPCL. To analyze financial position, various presentation and analysis have been presented in this chapter according to analytical research design mentioned in the third chapter using various financial and statistical tools. Thus, application of major variable taken into account for the purpose study are current assets to current liabilities, quick asset to current liabilities, sales to inventories, sales to capital employed. Sales to net fixed assets, sales to total assets, net profit tax to shareholders equity, earning per share, dividend per share, market price per share to earning per share, co-efficient of correlation analysis of different variable of CHPCL and BPCL.

4.1 Financial Analysis

Analysis of financial statement is a purposeful and systematic presentation of information in the financial statement by developing relationship between one figure with other in order to measure the profitability, liquidity, solvency, operating efficiency and growth potentiality of the business organization. The study is conducted using each of the companies financial statement for the last five fiscal years.

4.1.1 Liquidity Ratio

Liquidity ratios are used to measure the firm's ability to meet its short-term obligations. These ratios are comparison of short-term obligation with the resource available and measured by current and quick ratio.

4.1.1.1 Current Ratio

Current ratio is the one of the measurement of liquidity of any firm. Liquidity focuses on the concept of ability of paying short-term obligation of efficiency. It is determined by dividing total current asset by total liability. Generally, current ratio of 2:1 is taken as a standard. High current ratio shows higher degree of liquidity.

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

Table 4.1

Comparative Current Assets to Current Liabilities

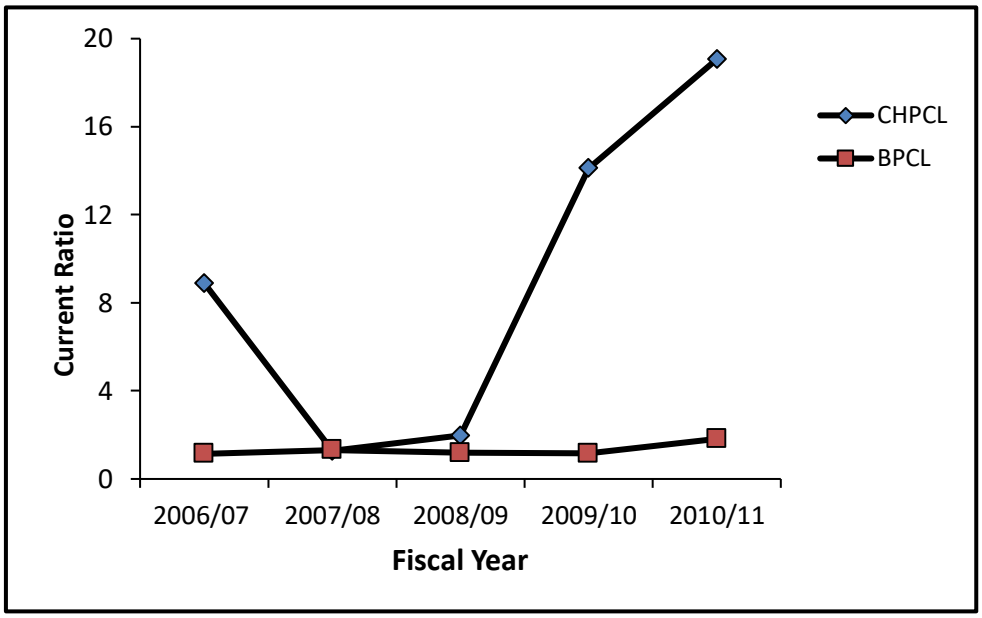
F.Y.	CHPCL	BPCL
2006/07	8.9	1.14
2007/08	1.28	1.31
2008/09	1.97	1.19
2009/10	14.12	1.15
2010/11	19.06	1.82
Average	**9.09**	**1.32**

Source: Appendix- 1

The above table shows that the current ratio of CHPCL and BPCL in five fiscal year. The ratio of CHPCL in the fiscal year 2006/07, 2007/08, 2008/09, 2009/10, 2010/11 are 8.99, 1.28, 1.97, 14.12, 19.06 respectively. The average ratio is 9.09.

Figure 4.1

Comparative Current Assets to Current Liabilities



Similarly, the current ratio of BPCL in the fiscal year 2006/07, 2007/08, 2009/10, 2010/11 are 1.14, 1.31, 1.19, 1.15 and 1.82 respectively. The average ratio is 1.32.

4.1.1.2 Quick Ratio

The quick ratio is a more accurate guide to measure the liquidity position of any firm. The ratio establishes a relationship between quick assets and current liabilities. Liquidity of an asset is convertibility into cash without the loss of value. Quick assets are determined by substracting the prepaid and stock from the total current assets. Therefore, the quick ratio is measured by dividing the total quick assets by the total current liabilities. The quick ratios of CHPCL and BPCL are given below.

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

Table 4.2

Comparative Quick Ratio

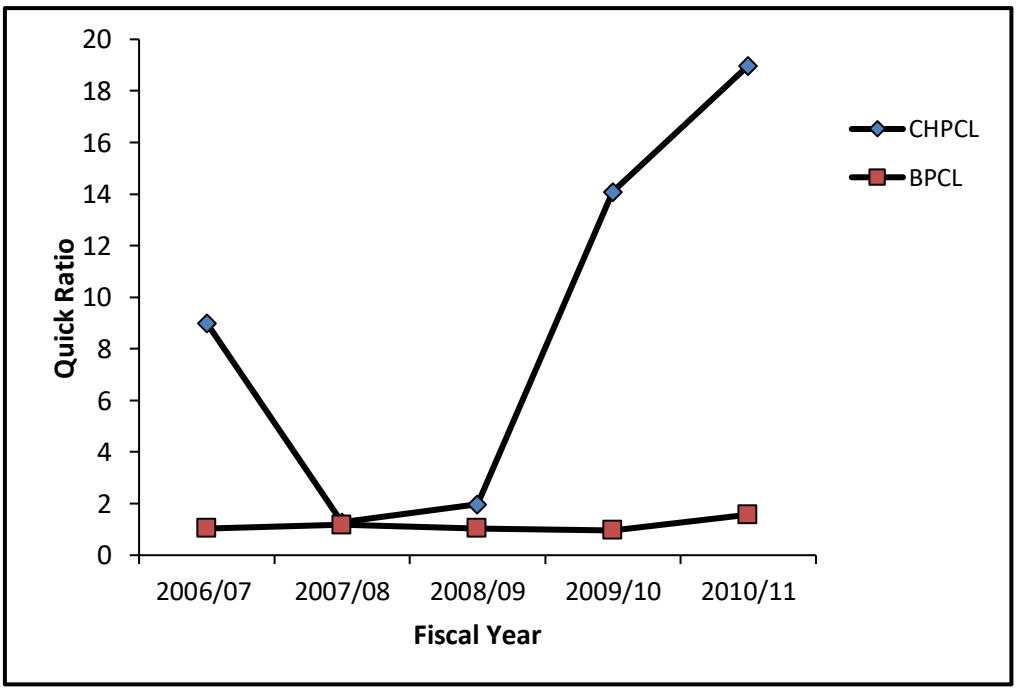
F.Y.	CHPCL	BPCL
2006/07	8.99	1.04
2007/08	1.28	1.18
2008/09	1.97	1.04
2009/10	14.08	0.96
2010/11	18.98	1.57
Average	**9.05**	**1.16**

Source: Appendix-2

The quick ratio of CHPCL are 8.99, 1.28, 1.97, 14.08 and 18.98 in the fiscal year 2006/07, 2007/08, 2008/09, 2009/10 and 2010/11 respectively. The quick ratio of the fiscal year 2006/07, 2009/10 and 2010/11 are highly liquid.

Figure 4.2

Comparative Quick Ratio



Similarly, the quick ratio of BPCL are 1.04, 1.18, 1.04, 0.96 and 1.57 in the fiscal year 2006/07, 2007/08, 2008/09, 2009/10 and 2010/11 respectively.

4.1.2 Activity/ Turnover Ratio

4.1.2.1 Fixed Asset Turnover Ratio

The assets are sum of fixed and current asset. Fixed asset have direct effect on the generation of sales. However, also other assets contribute to the production and sales activities of the firm. Therefore, the firm must manage its total assets efficiently and should generated maximum sales through proper utilization. The total assets turnover ratio shows the CHPCL and BPCL as given below.

Table 4. 3

Comparative Fixed Assets Turnover Ratio

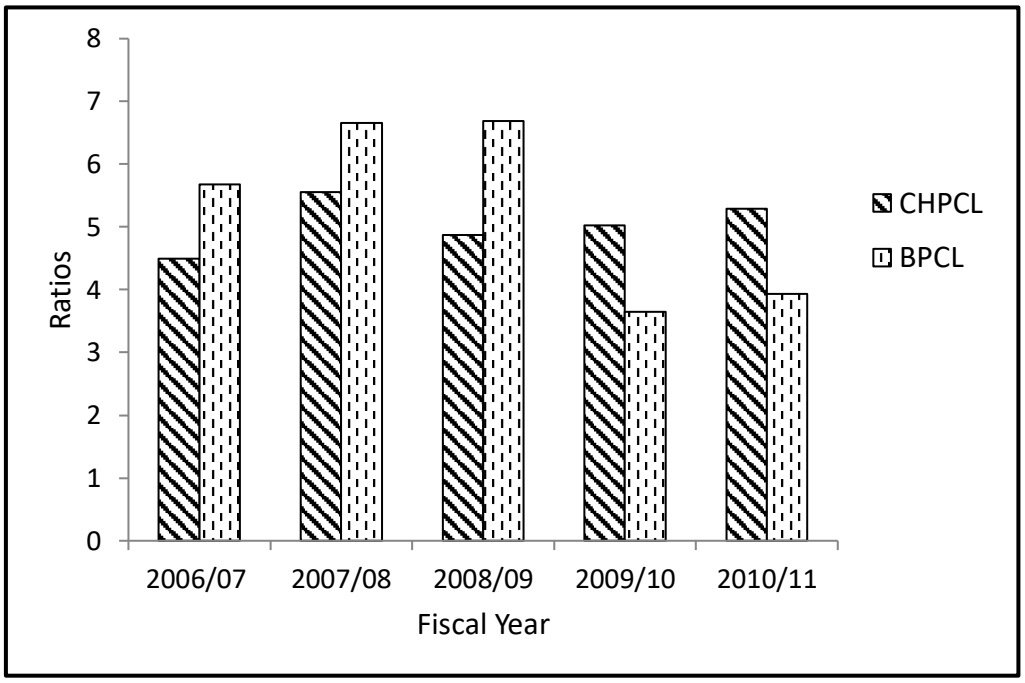
F.Y.	CHPCL	BPCL
2006/07	4.49	5.68
2007/08	5.56	6.66
2008/09	4.87	6.69
2009/10	5.02	3.65
2010/11	5.29	3.93
Average	**3.89**	**5.21**

Source: Appendix-3

The ratio measure the efficiency of utilizing fixed asset towards contribution of sales. The higher ratio indicates better business performance and lower ratio indicates inefficient utilization of fixed assets. The ratios of CHPCL are 4.49, 4.56, 4.87, 5.02 and 5.29 times in the fiscal year 2006/07

Figure 4.3

Comparative Fixed Assets Turnover Ratio



The ratio of BPCL are 5.68, 6.66, 6.69, 3.65 and 3.93 times in the fiscal year 2006/07, 2007/08, 2008/09, 2009/10 and 2010/11 respectively. The average ratio is 5.21 times.

4.1.2.2 Inventory Turnover Ratio

Every business organization has to maintain a certain level of stock for fulfillment the requirement of the business inventory turnover ratio indicators whether the investment in the inventory is effectively used or not. It indicates efficiency of inventory management. The ratio is calculated as.

Inventory Turnover Ratio = $\frac{Sales}{Inventory}$

Table 4.4

Comparative Inventory Turnover Ratio

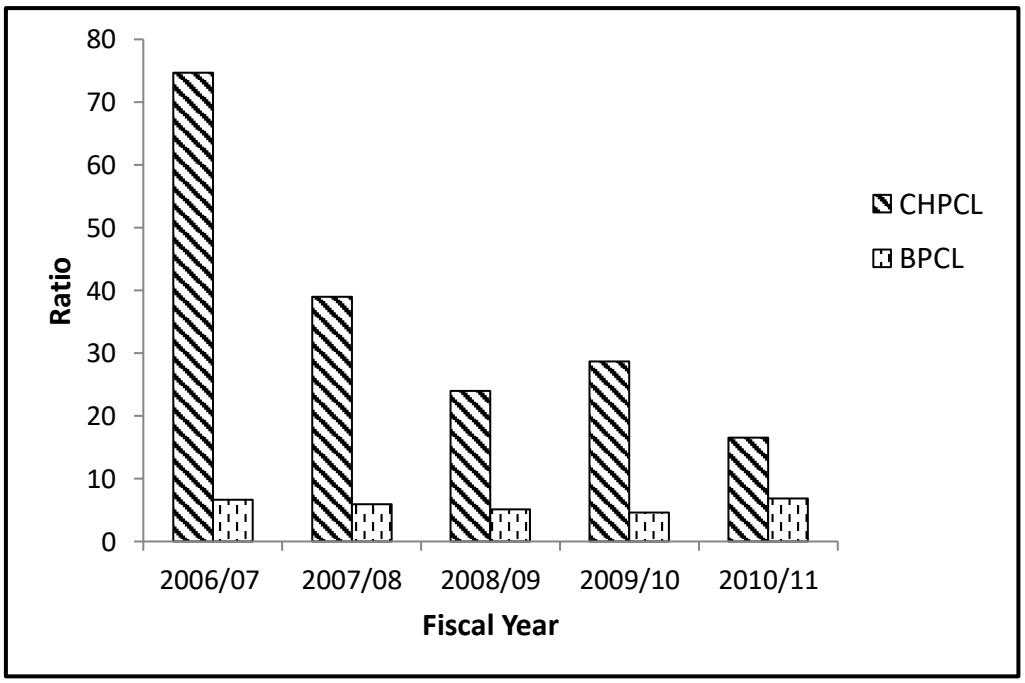
F.Y.	CHPCL	BPCL
2006/07	74.71	6.67
2007/08	38.97	5.98
2008/09	23.95	5.08
2009/10	28.69	4.59
2010/11	16.56	6.88
Average	**36.56**	**5.88**

Source: Appendix-4

The inventory turnover ratio of CHPCL are 74.71, 38.97, 23.95, 28.69 and 16.56 times in the fiscal year 2006/07, 2007/08, 2008/09, 2010 and 2010/11 respectively.

Figure 4.4

Comparative Inventory Turnover Ratio



The ratios are BPCL, 6.67, 5.98, 5.08, 4.59 and 6.88 times in the fiscal year 2006/07, 2007/08, 2008/09, 2010 and 2010/11 respectively

4.1.2.3 Capital Employed Turnover Ratio

This ratio is calculated to know the effectiveness in utilizing the capital employed for making sales activities. Higher the capital employed turnover ratio shows the maximum utilization of capital employed and lower the capital employed turnover ratio shows the inefficient utilization of capital employed for making sales activity.

$$\text{Capital Employed Turnover Ratio} = \frac{Sales}{Capital\ Employ}$$

Capital Employed = Total Asset – Current Liabilities

Table 4.5

Comparative Total Sales to Capital Employed Ratio

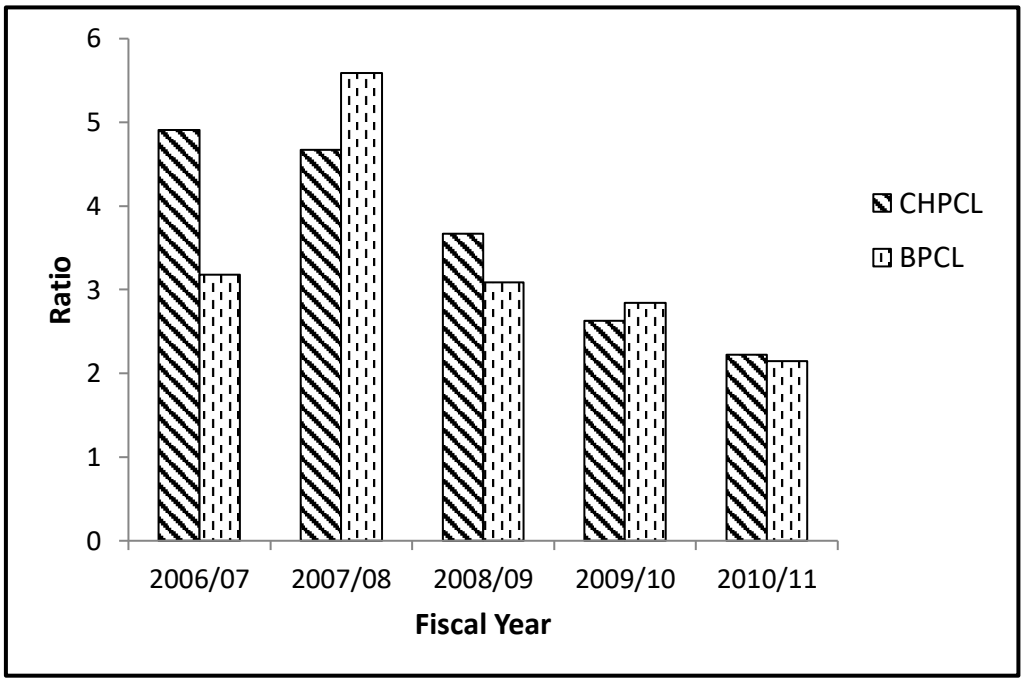
F.Y.	CHPCL	BPCL
2006/07	4.91	3.18
2007/08	4.67	5.59
2008/09	3.67	3.09
2009/10	2.63	2.84
2010/11	2.22	2.15
Average	**3.22**	**2.97**

Source: Appendix-5

The capital employed turnover ratio of CHPCL are 4.91, 4.67, 3.67, 2.63 and 2.22 times in the fiscal year 2006/07, 2007/08, 200809, 2009/10 and 2010/11 respectively. The average ratio is 3.22 times.

Figure 4.5

Comparative Capital Employed Turnover Ratio



The capital employed turnover ratio of BPCL are 3.18, 3.59, 2.84 and 2.15 times in the fiscal year 2006/07, 2007/08, 2008/09, 2009/10 and 2010/11 respectively. The average ratio is 2.97 times.

4.1.2.4 Total Asset Turnover Ratio

The ratio measure the efficiency or utilizing total assets toward contribution of sales. Higher the total asset turnover ratio indicates better performance and lower ratio indicates lower performance of business. The ratio is calculated as:

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

Table 4.6

Comparative Total Asset Turnover Ratio

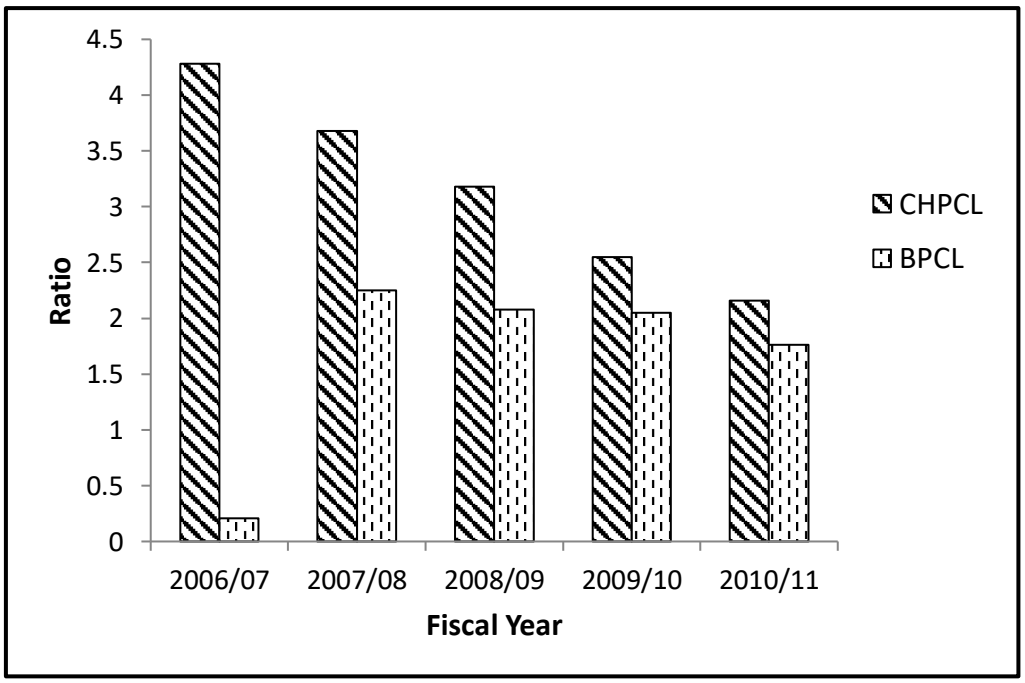
F.Y.	CHPCL	BPCL
2006/07	4.28	0.21
2007/08	3.68	2.25
2008/09	3.18	2.08
2009/10	2.55	2.05
2010/11	2.16	1.76
Average	**2.77**	**1.35**

Source: Appendix-6

The total asset turnover ratio of CHPCL are 4.28, 3.68, 3.18, 2.55 and 2.16 times in the fiscal year 2006/07, 2007/08, 2008/09, 2009/10 and 2010/11 respectively. The average ratio is 2.77 times.

Figure 4.6

Comparative Total Asset Turnover Ratio



Similarly, the case of BPCL, ratio are 0.21, 2.25, 2.08, 2.05 and 1.78 times in the fiscal years 2006/07, 2007/08, 2008/09, 2009/10 and 2010/11 respectively. The average ratio is 1.35 times.

4.1.3 Profitability Analysis

Profitability analysis is used to measure the profitability position of the firm. It can use to various tools to measure it.

4.1.3.1 Net Profit Margin

It shows the relationship between net profit and sales. In the following table, the net profit and revenue from sale of electricity and others are shown and the figures are used to calculate the net profit to sales ratio.

The sales are the basic self-motivated force in a business activities without sufficient sales of goods and services, business may successful. The ratio of net profit to sales shows the profitability of firms indicating that the only increase in sales. From this ratio, it can also be obtained the information of the total expenses incurred during a certain period.

Table 4.7

Comparative Net Profit Margin to Sales Ratio

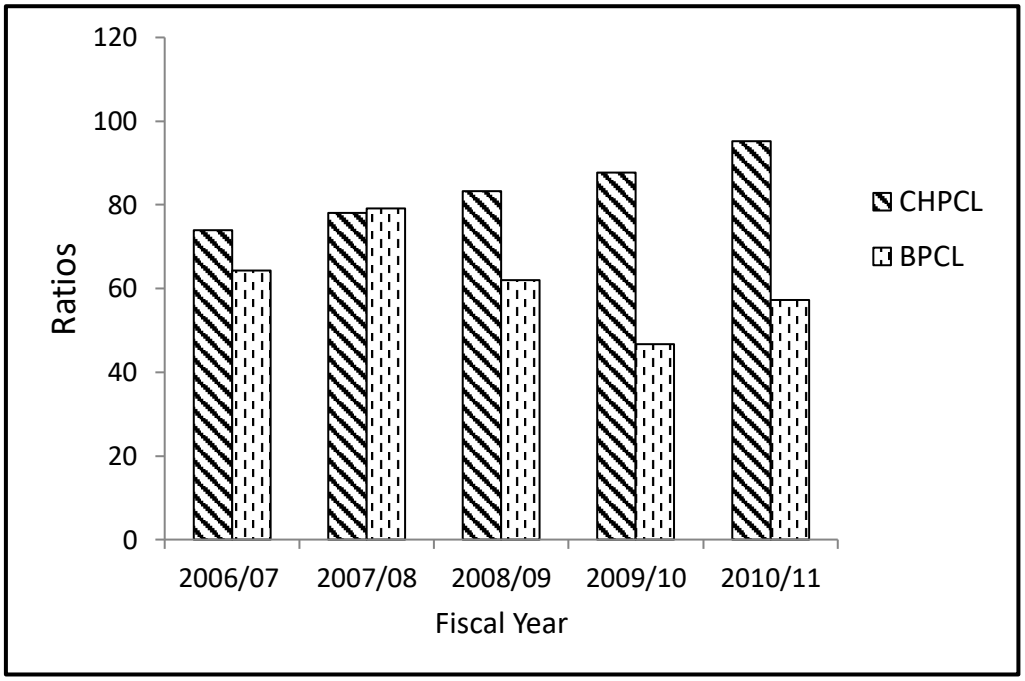
Fiscal Year	Net Profit Margin to Sales Ratio (%)	
	CHPCL	BPCL
2006/07	73.87	64.35
2007/08	78.08	79.21
2008/09	83.24	61.95
2009/10	87.69	46.73
2010/11	95.26	57.32
Average	83.63	61.91

Source Appendix - 7

The Net Profit Margin Ratio of CHPCL are 73.87%, 78.08%, 83.24%, 87.69% and 95.26% in the fiscal year 2006/07, 2007/08, 2008/09, 2009/10 and 2010/11 respectively. The average ratio is 83.63%.

Figure 4.7

Comparative Net Profit Margin



In the case of BPCL, the Net Profit Margin Ratio are 64.35%, 79.21%, 61.95%, 26.73% and 57.32% in the fiscal year 2006/07, 2007/2008, 2008/09, 2009/10 and 2010/11 respectively. The average ratio is 61.91%.

4.1.3.2 Calculation of Return on Total Assets

Return on total assets ratio measures the profitability of companies that explains a firm to earn satisfactory return on all financial resources invested in the company's assets, otherwise its survivable is threatened. The ratio explains net income for each unit of assets. Higher ratio indicates efficiency in utilizing its overall resources and vice-versa. Rate of return on total assets is major tools to judge the operational efficiency of a company. It calculated as follows.

$$\text{ROA} = \frac{Net\ Income}{Total\ Assets}$$

Table 4.8

Comparative Return on Total Assets

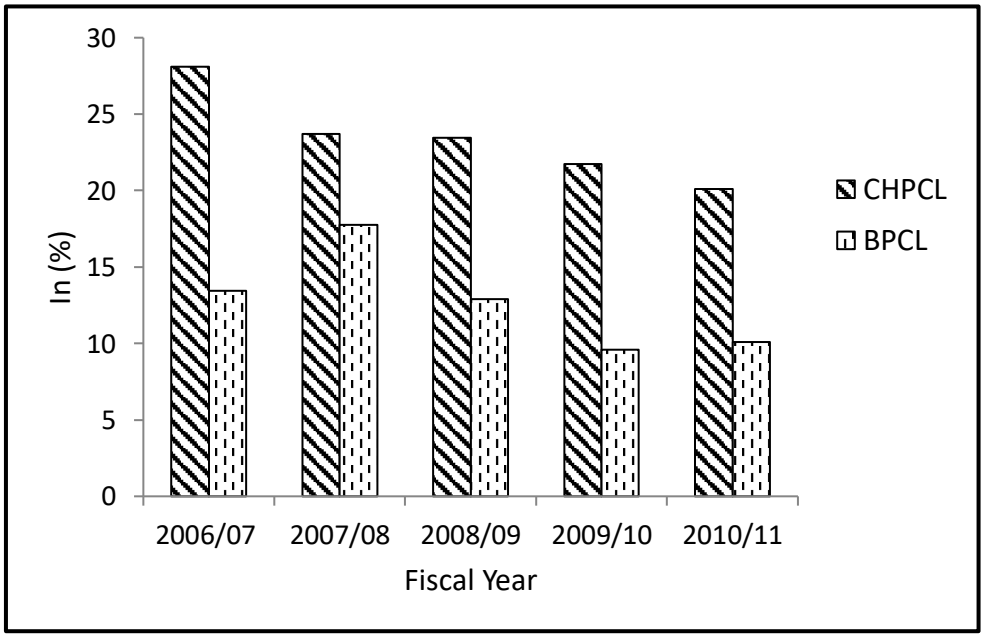
Fiscal Year	Return on Total Assets (%)	
	CHPCL	BPCL
2006/07	28.09	13.43
2007/08	23.71	17.77
2008/09	23.46	12.88
2009/10	21.73	9.58
2010/11	20.09	10.08
Average	23.42	12.75

Source: Appendix- 7

The above table 4.7, return on total asset of CHPCL are 28.09%, 23.71%, 23.46%, 21.73% and 20.09% in the fiscal year 2006/07, 2007/2008, 2008/09, 2009/10 and 2010/11 respectively. The average return on total asset of CHPCL is 23.42%.

Fig. 4.8

Comparative Return on Total Assets



The return on total assets of BPCL are 13.43%, 17.77%, 12.88%, 9.58% and 10.08% in fiscal year 2006/07, 2007/08, 2008,08, 2008/09, 2009/10 and 2010/11 respectively. The average ratio is 12.45%.

4.1.3.3 Calculation of Return on Shareholders Equity

A return on shareholder's equity measure of productivity of shareholder's funds. It carries the relationship of return on shareholder's equity. The shareholder's equity includes common share capital, preference share capital and reserve and surplus. Management's objectives is to generate the maximum return on shareholder's investment in the firm. Therefore, ROE is the important tools to measurement of company's success in fulfilling its goals. This ratio is great interest and value to the present as well as the perspective shareholders and also of great concern to management, which has the responsibility of maximizing the owner's welfare. The ratio equals the net profit after taxes divided by common stockholders.

$$\text{ROE} = \frac{NPAT}{Shareholder'Equity}$$

Table 4.9

Comparative Return on Shareholder's Equity

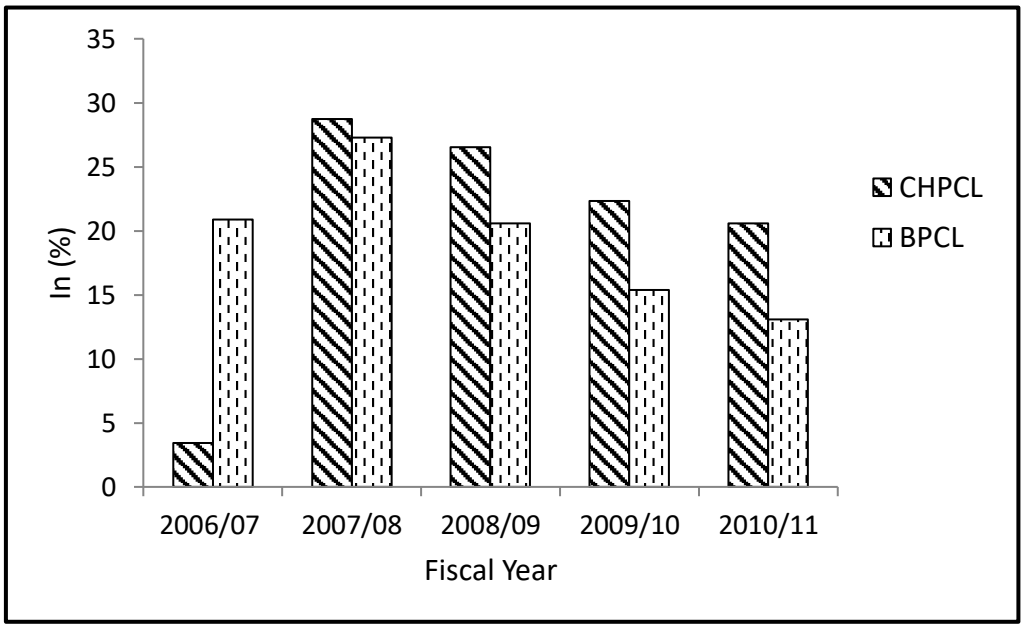
Fiscal Year	Return on Shareholder's Equity (%)	
	CHPCL	BPCL
2006/07	3.42	20.9
2007/08	28.71	27.3
2008/09	26.51	20.6
2009/10	22.35	15.4
2010/11	20.58	13.1
Average	20.31	19.46

Source: Appendix- 8

Above table exhibits ROSHE of sampled companies. In the case of CHPCL, in the fiscal year 2006/07, the ratio is 3.42% that implies that one rupee investment by shareholders equity earned 3.42 paisa in one year. In the fiscal year 2007/08, 2008/09, 2009/10 and 2010/11 are 28.71%, 26.51%, 22.35% and 20.58% respectively. The average ratio is 20.31 of CHPCL.

Fig. 4.9

Comparative Return on Shareholder's Equity



The return on shareholder's equity of BPCL are 20.9%, 27.3%, 20.6%, 15.4 and 13.1% in the fiscal year 2006/07, 2007/08, 2008/09, 2009/10 and 2010/11 respectively. The average ratio is 19.46%.

4.1.3.4 Earning Per Share

The profitability of company from the point of view of the ordinary shareholder's is earning per share. The ratio explains net income for each unit of share. Earnings per share of an organization give the strength of the share in the market. It shows how much theoretically belongs to the ordinary shareholders. The EPS is calculated as below.

$$\text{Earning Per Share} = \frac{Net\ Income}{No.of\ Shares\ Outstanding}$$

Table No. 4.10

Comparative Earning Per Share

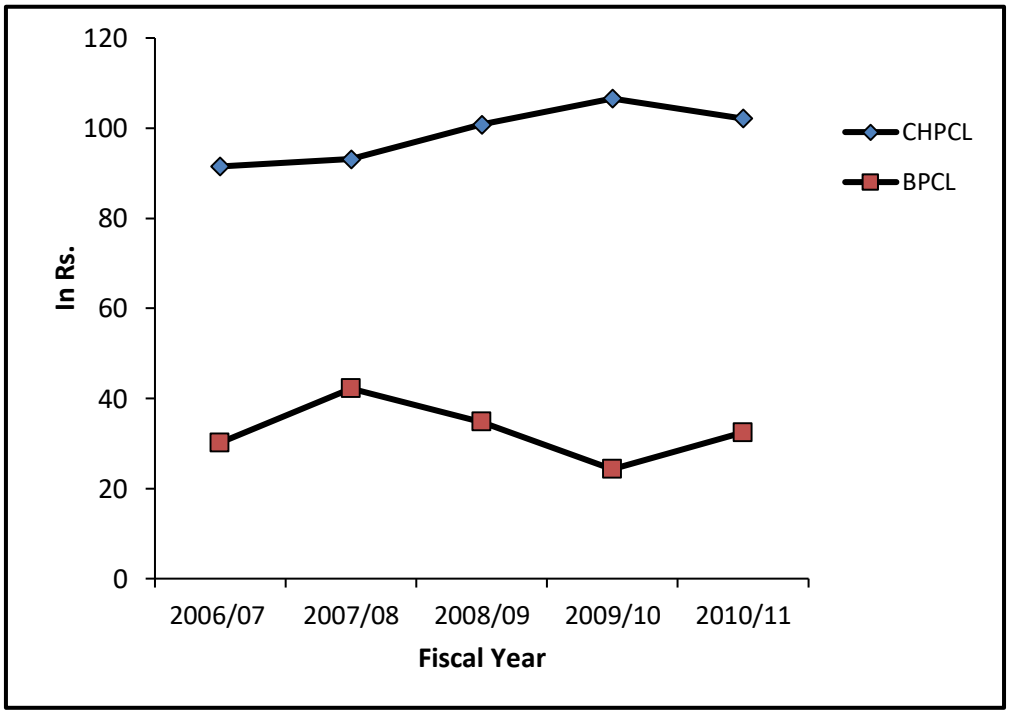
Fiscal Year	Earning Per Share (EPS)	
	CHPCL	BPCL
2006/07	91.49	30.13
2007/08	93.12	42.18
2008/09	100.79	34.75
2009/10	106.56	24.29
2010/11	102.12	32.40
Average	98.82	32.75

Source: Appendix- 9

The earning per share of CHPCL are 91.49, 93.12, 100.79, 106.56 and 102.12 in the fiscal years 2006/07, 2007/08, 2008/09, 2009/10 and 2010/11 respectively. The average EPS is 98.82. The overall trend is increasing. The highest EPS is 106.56 during the year 2009/10.

Fig. 4.10

Comparative Earning Per Share



Similarly, the earning per share of BPCL in the year 2006/07, 2007/08, 2008/09, 2009/10 and 2010/11 are 30.12, 42.18, 34.75, 24.29 and 32.40 respectively. The average EPS is 32.75.

4.1.3.4 Dividend Per Share

Companies generally prefer to pay cash dividends. They finance their expansion and growth by issuing new shares or borrowing companies like to follow a stable dividend policy since investigators generally prefer such policy for certainly reason. A stable dividend policy doesnot constitute constant DPS, but of reasonably predicable dividend policy.

$$\text{DPS} = \frac{Total\ Dividend}{No.of\ Ordindary\ shares}$$

Table 4.11

Comparative Dividend Per Share

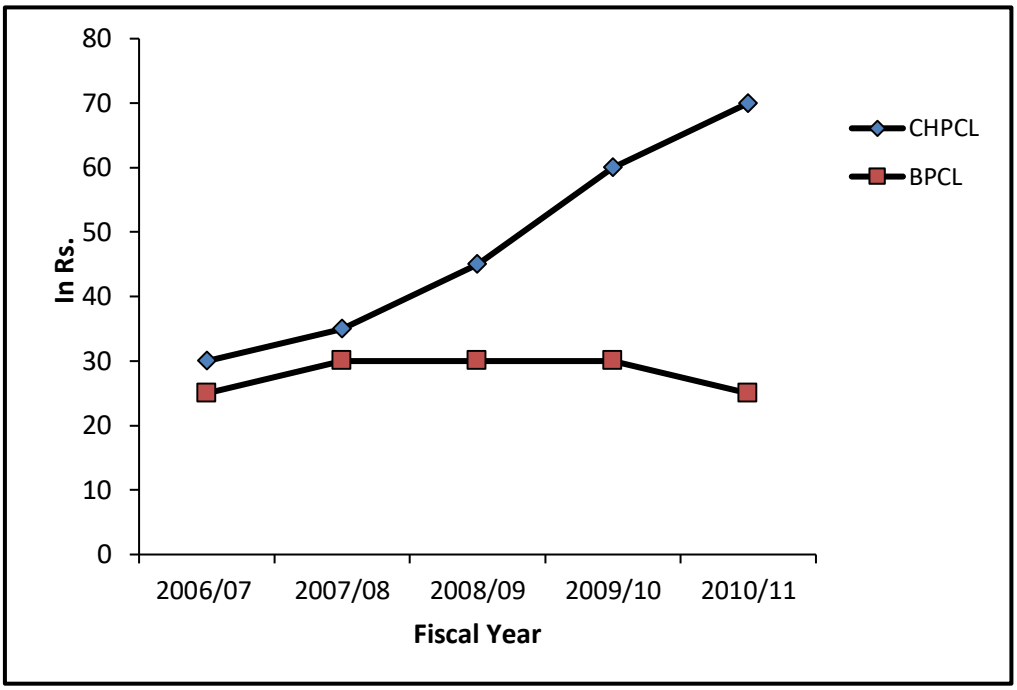
Fiscal Year	Position of Comparative DPS	
	CHPCL	BPCL
2006/07	30	25
2007/08	35	30
2008/09	45	30
2009/10	60	30
2010/11	70	25
Average	40	28

Source: Appendix- 10

The dividend per share of CHPCL are 30, 35, 45, 60 and 70 in the fiscal year 2006/07, 2007/08, 2008/09, 2009/10 and 2010/11 respectively. The average DPS of CHPCL is 48.

Fig. 4.11

Comparative Dividend Per Share



Similarly, the dividend per share of BPCL are 25, 30, 30, 30 and 25 in the fiscal year 2006/07, 2007/08, 2008/09, 2009/10 and 2010/11 respectively. The average DPS is 28.

4.1.3.5 Price Earning Ratio

Price earning ratio reflects the price currently being paid by the market for each rupee of currently reported EPS. In other words, it measures investor expectation and the market appraisal of the performance of a firm. It is an indication of the way investor think that the companies would perform better in future. Higher market price suggest that investor expect earning to grow and this gives a high P/E ratio implies that investor feels that earning are not likely to rise. Price earnings ratio is calculated as follows:

$$\text{P/E Ratio} = \frac{Market\ Price\ Per\ Share}{Earning\ Per\ Share}$$

Table No. 4.12

Comparative Price Earning Ratio

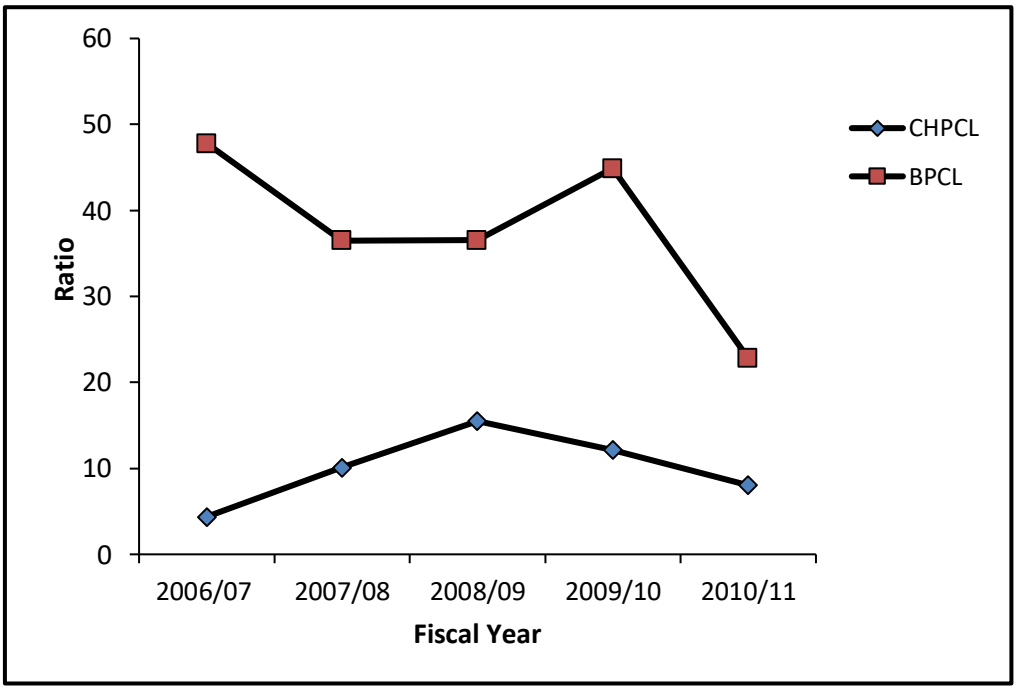
Fiscal Year	Position of Comparative DPS	
	CHPCL	BPCL
2006/07	4.37	47.79
2007/08	10.09	36.51
2008/09	15.49	36.55
2009/10	12.16	44.87
2010/11	8.05	22.81
Average	10.03	37.71

Source: Appendix- 11

The price earning ratio of CHPL are 4.37%, 10.9%, 15.49%, 12.16% and 9.05% in the fiscal year 2006/07, 2007/08, 2008/09, 2009/10 and 2010/11 respectively. The highest rate in the fiscal year 2008/09 and lowest in fiscal year 2006/07. The average ratio is 10.03%.

Figure 4.12

Comparative Price Earning Ratio



Similarly the price earning ratio of BPCL are 47.79%, 36.51%, 36.55%, 44.87% and 22.81% in the fiscal years 2006/07, 2007/08, 2008/09, 2009/1 and 2010/11 respectively. The average P/E ratio is 37.71%.

4.1.3.6 Operating Expenses Ratio

The operating expenses ratio establishes relationship between operating expenses and sales revenue. The operating ratio is the measuring tools of operating efficiency. The calculation of this ratio comprises computation of all operating expenses, cost of goods sold and general administrative expenses. 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. A lower operating ratio is favorable and higher operating ratio is unfavorable.

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

Table No. 4.13

Comparative Operating Expenses Ratio

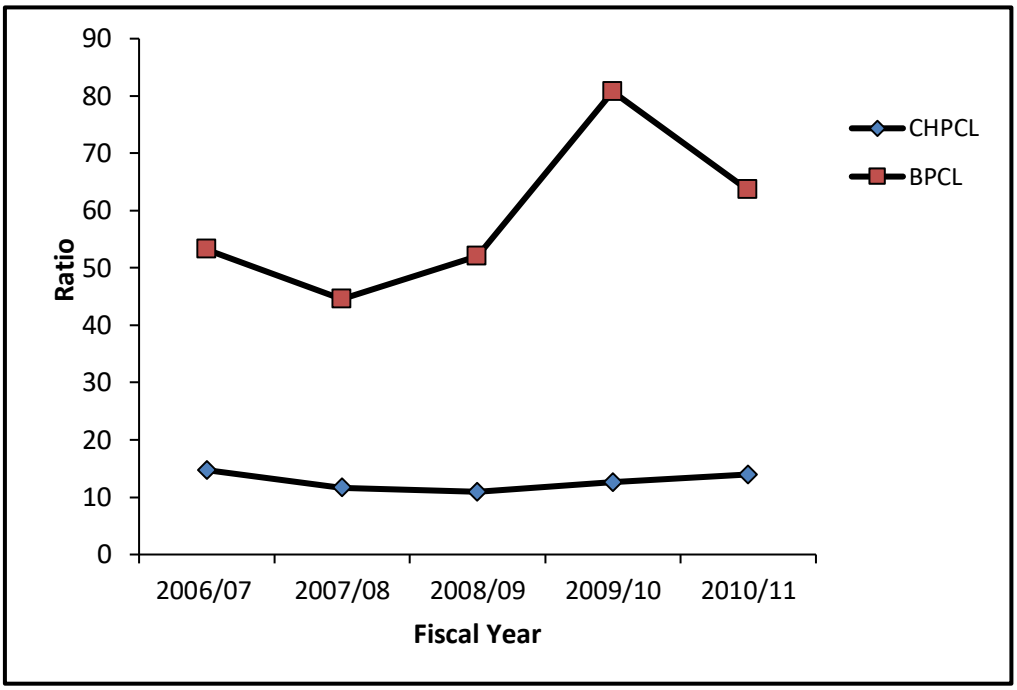
Fiscal Year	Operating Expenses Ratio	
	CHPCL	BPCL
2006/07	14.72	53.22
2007/08	11.67	44.56
2008/09	10.94	52.04
2009/10	12.62	80.76
2010/11	13.96	63.58
Average	12.78	58.83

Source: Appendix- 11

The operating ratio of CHPCL are 14,72%, 11.67%, 10.94%, 12.62%, 13.96% in the fiscal year 2006/07, 2007/08, 2008/09, 2009/10 and 2010/11 respectively. The average operating ratio expenses is 12.78% .

Figure 4.13

Comparative Operating Expenses Ratio



Similarly the operating expenses ratio of BPCL are 53.22%, 44.56%, 52.04%, 80.76% and 63.58% in the fiscal years 2006/07, 2007/08, 2008/09, 2009/1 and 2010/11 respectively. The average operating expenses ratio is 58.83%.

4.1.2 Cash Flow Statement

Cash flow statement shows the cash inflows and outflows of cash and cash equivalent during the time period. Cash flow statement attempts to report only cash movement by the source and use of cash. It shows the clear picture of cash generated from various activities such as operating, investing and financing activities.

Cash flow statement of CHPCL and BPCL are given below

Table 4.14

Cash Flow Statement of Chilime Hydropower Company

Particular	Fiscal Year	
	2009/10	**2010/11**
a) Cash Flow from Operating Activities	108457729.17	198837562.27
1. Net Profit/Loss before Taxable & Abnormal Income	777431846.81	843139339.31
Adjustments:		
Add		
1. Depreciation	104732089.17	106217662.06
2. Deferred Expenditure		2182681.29
3. Loss on Exchange	174495.30	-
4. Loss on Sale of fixed Assets	1150558.26	-
Subtraction		
1. Profit from Sale of Fixed Assets	(174495.30)	-
2. Interest Income	(108941205.45)	(190520742.26)
Cash Flow before Changes in working Capital	774373288.79	761018940.40
Change in Working Capital		
1. (Inc.)/Dec. in Current Assets	(659359625.73)	(566865983.14)
2. Inc. (Dec.) in Current Liabilities	(6555933.89)	4684605.02
Operating Cash Flow after Change in Working Capital	(665915559.62)	(562181378.12)
Interest Paid	-	-
Net Cash Flow from Operating Activities (A)	(665915559.62)	(562181378.12)
b. Cash Flow from Investment Activities		
1. Interest & Dividend Received	108941205.45	190520742.26
2. (Inc.)/Dec. in fixed Assets of New Project	(93875337.39)	(127608233.86)
3. Proceed from fixed Assets	455000.00	-
4. Increase in Deferred Expenditure	-	(7549929.15)
Net Cash flow from investments (B) activities	15520868.06	55362579.25
c. Cash Flow from Financial Activities		
1. Issue of Share Capital	-	96000000.00
2. Share Premium	-	174486000.00
3. Dividend Paid	(328320000.00)	(495360000.00)
Net Cash Flow from Financial Activities	(328320000.00)	(224874000.00)
Change in Cash Increase/Decrease (A+B+C)	(204341402.77)	29326141.52
Opening Cash Balance	248470886.59	44129483.82
Closing Cash Balance	44129483.82	73455625.32

Table 4.15

Cash Flow Statement of Butwal Power Company

Particular	Fiscal Year	
	2009/10	2010/11
Cash Flow from Operating Activities		
Profit (loss) before Bonus and Tax	254897024	377038284
Adjustment for.		
Ordinary Depreciation.	53085001	52791501
Depreciation Charged to Grant Aid in Reserve	7547367	9407824
Foreign Currency Exchange	3651236	
(Gain)/Loss		4283426
Interest Expenses	18103700	25240213
Interest Received	(6407572)	(15824992)
provision Loss (Income) in Investment	(137802992)	(164265280)
Provision for Expenses	-	13303987
(Gain)/Loss on Disposal of Stock	601916	(2295016)
Deferred Revenue Expenses	90134	749372
Written off of Assets	10964101	1030817
Operating Profit before working Capital Change	212212941	295099905
Decrease/ (Increase) in Debtors & Accounts Receivable	77633259	(90414287)
Decrease/ (Increase) in stocks	(12422008)	23425452
Decrease/(Increase) in Advance & Deposit Paid	(30330314)	(67153314)
Decrease/(Increase) creditors & Account Payable	(145076216)	21937559
Decrease/(Increase) in Advance & Deposit Received	23356196	(42698479)
Cash Generated from Operations	125373958	140196837
Interest Paid	(18103700)	(25240413)
Foreign Currency Exchange (Gain/(Loss)	(3651236)	(4283426)
Bonus Paid	(9659329)	(5457355)
Tax Paid	(12246889)	(27591593)
Prior Year Adjustment	(111018)	(737231)
Net Cash Flow from Operating Activities (A)	81601786	76886819
Cash Flow from Investing Activity		
Purchase of Fixed Assets	(87922633)	(83363120)
Investment in Share	(101077104)	(125642158)
Decrease/(increase) in work in Progress	(52248919)	(110084250)
Interest Received	64075572	15824992
Dividend Received	137802992	164265280

Net Cash Flows from Investing activities (B)	(97038091)	(138999255)
Cash Flows from Financing Activities.		
Increase/(Decrease) in Grant Aid in Reserve	44006922	33170932
Increase/(Decrease) in Long term Loan	31241188	60141210
Dividend Paid	(167811540)	(178622251)
Net Cash Flows from Financing Activities (C)	(92563430)	(85310109)
Net Changes in Cash & Cash Equivalents (A+B+C)	(107999734)	(147422546)
Opening Cash Balance	137392866	29393132
Short-term Loan	205494751	162931639
Closing Cash Balance	234887883	44902225

4.2 Correlation Analysis

Correlation analysis enables us to have an idea about the degree and direction of the relationship between two or more variables. The correlation is a statistical tool which studies the relationship between two or more variable and correlation analysis involves various methods and techniques used for studying and measuring the extent of the relationship between the two or more variables. It is denoted by 'r'. However, it fails to reflect upon the cause and effect relationship between the variables. Although there three types of correlation i.e. simple, partial and multiple but here we follows on simple, correlation based on "Pearson's coefficient of correlation. In the following section correlation between different variables are calculated and presented of the sampled companies.

- Current Assets and Current Liabilities
- EPS and ROA
- EBIT and DPS
- Net Profit & Net Worth

4.2.1 Current Asset and Current Liabilities

The relationship between the current asset and current liabilities have been shown in the following table below. The current assets includes cash within a year, such as marketable securities, account receivables, prepaid expenses,

sundry debtors, bill payable, advance receivable etc. Similarly, current liabilities involves the sundry creditors, bills payable, accured expenses, bank overdraft, income tax liabilities etc. The correlation indicates whether there is positive or negative correlation between current assets and current liabilities and their respective probable error is also presented. P.E. interprets the value of correlation coefficient. It helps to determine applicability for the measurement of reliability of the computed value of the correlation coefficient (r).

Table 4.16

Comparative Correlation Coefficient between Current Asset and Current Liabilities with Probable Error

CHPCL		BPCL	
Correlation Coefficient(r)	**Probable Error 6 (P.E.)**	**Correlation Coefficient (r)**	**Probable Error 6 (P.E)**
0.75	0.792	0.749	0.79

Source: Appendix

Karl Pearson's correlation between current asset and current liabilities of CHPCL is 0.75 there is positive correlation between CA and CL. The probable error 6 (P.E.) of CHPCL is 0.792. P.E is greater the correlation (r). r is insignificant. Similarly, the correlation coefficient of BPCL is 0.749. It is positive correlation between CA and CL. Probable is 0.79, greater than r so r is insignificantly.

4.2.2 Return on Asset and Earning Per Share

The correlation between ROA and EPS of sampled companies are analyzing in order to examine significant or not. It is assumed that there is significant relationship between ROA and EPS. Positive value show the positive relation and negative value show the negative relation.

Table 4.17

Comparative Correlation Coefficient between ROA and EPS

CHPCL		BPCL	
Correlation Coefficient(r)	**Probable Error 6 (P.E.)**	**Correlation Coefficient (r)**	**Probable Error 6 (P.E)**
-0.798	0.67	0.79	0.9929

Karl Pearson's correlation between ROA and EPS of CHPCL -0.7985. It is negative correlation. The P.E. is 0.67. The case of BPCL correlation coefficient (r) is 0.9929 greater the r correlation coefficient (r) is insignificantly.

4.2.3 EBIT and DPS

Shareholders get the dividend as return and EBIT is operating profit of the company. Here correlation coefficient of EBIT and DPS has been presented of concerned companies to analyze whether there is positive or negative correlation between dividend and operating profit. Following table shows the relationship between these variables of sampled companies. And to check the significant of these calculated correlations. P.E. is also presented.

Table 4.18

Correlation Coefficient between EBIT and DPS with Probable Error

CHPCL		BPCL	
Correlation Coefficient(r)	**Probable Error 6 (P.E.)**	**Correlation Coefficient (r)**	**Probable Error 6 (P.E)**
0.8516	0.4973	-0.1281	1.7802

Source: Appendix 17

In the above table, correlation coefficient of CHPCL is 0.8516, i.e. positive correlation between EBIT and DPS. 6PE of respected correlation is 0.4973,

which is less than correlation coefficient (r). Similarly, in the case of BPCL, the correlation coefficient between operating profit and dividend is -0.1281. It is negative correlation between operating profit and dividend per share. The 6P.E. of respected correlation is 1.7802.

4.2.4 Correlation Coefficient Net Profit & Net Worth

Shareholders get the dividend as return from the net profit. Net worth includes shareholders equity plus long term debt. Hence, correlation coefficient of net profit and net worth has been presented of concerned companies to analyze whether there is positive or negative correlation between net profit and net worth. Following table shows the relationship between these variable of sampled companies. And the check the significant of these calculated correlation P.E. is also presented.

Table 4.19

Correlation Coefficient between Net Profit and Net Worth

CHPCL		BPCL	
Correlation Coefficient(r)	**Probable Error 6 (P.E.)**	**Correlation Coefficient (r)**	**Probable Error 6 (P.E)**
0.9648	0.1252	0.3657	1.568

In the above table, correlation coefficient of CHPCL is 0.9648, i.e. positive correlation between net profit and net worth. 6PE of respected correlation is 0.1252, which is less than correlation coefficient (r). Similarly, in the case of BPCL, the correlation coefficient between net profit and net worth is 0.3657. It is positive correlation between net profit and net worth. The 6PE is respected correlation is 1.568.

4.3 Major Finding of the Study

- The liquidity position of CHPCL are fluctuately trends CHPCL has high current ratio is the fiscal year 2010/11 is 19.06:1. It is maximum, show the idle cash in firm or company cannot utilization proper cash. Perhaps, company will invest four hydropower projects in near future. We can says, company cannot manage the cash in a company. The average current ratio is 9.09. The quick ratio is also fluctuate trend. Company's strong payable position is harmful for a company. Cash will be idle in a firm are harmful. The other hands BPCL's current ratio is satisfaction. Companies manage their cash sources in other productivity proper places.

- The inventory turnover ratio of CHPCL is decreasing trend. The company has high inventory turnover ratio that good manage the inventory. BPCL also high inventory turnover ratio. It means both company good manage the inventory. But CHPCL has high ratio than BPCL.

- Capital employed turnover ratios are decrease trend of CHPCL and BPCL. Both company effectively utilizing the capital employed for making sales activities.

- The total asset turnover ratio are decreasing trend of CHPCL but company efficiency utilize their total asset. BPCL has stable position of total asset turnover ratio. CHPCL has more utilized their fixed asset than BPCL. Both companies are successful to use their fixed asset to use effectively.

- The net profit margin ratio of CHPCL and BPCL are fluctuate trend, if company sells electricity to NEA. Company may produce electricity will sell simply during the power exist period. Both companies has good profit margin ratio.

- The return on total assets ratio of CHPCL and BPCL are decreasing trend. Both has effectively utilize their total asset. ROA ratio of CHPCL greater than BPCL. It means CHPCL greater profitability. Both companies are high ROA.

- The Net Profit margin ratio helps to determine the operational efficiency of the management. The profit margin ratio of CHPCL are 73.87%, 78.08 %, 73.24%, 87.69% and 95.26%. It is increase trends. Shows high operational efficiency of management. In the case of BPCL, the ratios are 64.32%. It is stable trends. Both companies utilize their operational efficiency.

- Return on total assets ratio indicates the ability of generating profit per rupees of total asset. It also evaluates the present return on the total assets as a guide for return expected on future purchase of assets. The average ratio of CHPCL is 23.42%. The average ratio of BPCL is 12.75%. The high ratio of CHPCL indicates more operating efficiency of management.

- Return on shareholder's equity ratio is to determine how efficiency the funds supplied by shareholders have been used. The average ROE of CHPCL is 20.31% and BPCL is 19.46%. CHPCL has greater ROE than BPCL.

- EPS measure the profit available to equity shareholders on per share basis. The average EPS of CHPCL is 98.82% and average of BPCL is 32.75%. Shareholder's of CHPCL has more EPS than BPCL's shareholders.

- The average DPS of CHPCL is 48 and average DPS of BPCL is 28. The higher DPS indicates the management efficiency of the company.

- Price earning ratio indicates the relationship between market value per share and earning per share. It ratio helps to the share buy or not in the

stock markets. The average P/E ratio of CHPCL is 11.66% and average P/E ratio BPCL is 37.71%.

- The cash flow statement shows that the cash balance of CHPCL are 677109896, 248470886.59, 44129483.82 and 73455625.32 in the fiscal year 2007/08, 2008/09, 2009/10 and 2010/11 respectively. On the case of BPCL, the cash balance are (138409693), (118914919), 234887883 and 44902225 in the fiscal year 2007/08, 2008/09, 2009/10 and 2010/11 respectively The cash balance of CHPCL is more than BPCL's cash balance.

- Correlation coefficient between current assets and current liabilities are positive relationship. Probable error is greater than correlation coefficient (r). So, r is insignificant.

- The correlation between ROA and EPS of CHPCL is negative. It is negative relationship. Probable error is 0.65. Similarly, the case of BPCL, correlation coefficient r is 0.79. It positive correlation coefficient. P.E. is greater than r. correlation coefficient r is insignificantly.

- The correlation coefficient between EBIT and DPS of CHPCL is 0.8516. It is positive correlation the 6 (P.E.) is 0.4973 less than correlation coefficient r. So r is significant. The correlation coefficient is BPCL is -0.1281. It is negative correlation. The PE is greater than r. So r is insignificant.

CHAPTER-V

SUMMARY, CONCLUSION AND RECOMMENDATION

This is the concluding chapter of the study. This chapter is divided into three sub-chapters are summary, conclusions and recommendations. In this chapter, we summarize the study in brief. In the last sub-chapter some recommendations have given, which are useful to stakeholders and to concerned as well. They can use these recommendations to take some correction actions to draw decisions.

5.1 Summary

The study was conducted within the financial analysis of hydropower companies listed in Nepal Stock Exchange over the five year study period from F.Y. 2006/07 to 2010/11 following a descriptive as well as analytical research design. The study is based on secondary data. Annual reports and other financial statements and used for the analysis of the study of CHPCL and BPCL as the major source of data. The analysis of financial statement is done to obtain a better insight into a firm's positive. Various methodology and tools have been applied to identify the financial position of companies.

The major objective of the study to analyze the financial position of CHPCL and BPCL, which deals with the specific objectives of the study to analyze the profitability condition of CHPCL and BPCL, financial efficiency, and relationship between net profit and net worth of CHPCL and BPCL various academic material were review in order to build up to conceptual foundation and to find out the clear destination of the research work. Historical background of hydropower in Nepal, major hydropower station of Nepal, currently construction hydropower project in Nepal, advantage and disadvantage of hydropower project were reviewed as conceptual review. On

the other hand, review of journal of International Electrotechnical Comission (IEC), Journal of Artificial Intelligence Management and Electronic Commerce (AIMEC) and Articles Evaluation of Static Hedging Strategies for Hydropower Producers in Nordic Market, Risk Analysis for Oversea Hydropower Plant BOT Project Business, review of dissertation are clear the concept of financial analysis of hydropower companies. The study was descriptive and analytical research design has been followed. The required data and information were collected from secondary sources.

Financial tools were used to evaluate the financial condition, current ratio, quick ratio, inventory turnover ratio, capital employed turnover ratio, fixed assets turnover ratio, total assets turnover ratio, net profit margin ratio, return on total assets ratio, return on shareholder's equity, EPS, DPS P/E ratio, operating expenses ratio and cash flow analysis of CHPCL and BPCL. Similarly, graphically presentation and statistically tools are applied.

5.2 Conclusion

In this study, comparisons between concerned hydropower companies has been done taking data of these companies. To evaluate the financial analysis, different types of tools and technique are used. The following conclusion can be drawn.

- The liquid position of CHPCL and BPCL are satisfactory, CHPCL keep the idle cash but BPCL manage their cash resources. The current ratio of CHPCL has overlapping. The current ratio of BPCL is satisfactory.
- Inventory turnover ratio of CHPCL is greater than BPCL. CHPCL utilize their inventory resource efficiency than BPCL.
- Capital employed turnover ratio of CHPCL is also greater than ratio of BPCL. It means CHPCL maximum utilize of the capital employed for making sales activities.

- The higher asset turnover ratio of CHPCL is higher than BPCL. It ratio indicates high business performance of the organization. Total assets utilize to respect the sales.

- Net profit margin ratio respect with sales that indicates the operational efficiency of the organization. Net profit margin ratio of CHPCL greater than BPCL indicates that CHPCL give more profit.

- ROA of CHPCL is greater than ROA of BPCL. Both leading company of hydropower are utilize the their total asset properly.

- ROE of both companies are similar ROE of CHPCL is nearly high than BPCL's ROE.

- EPS and DPS are indicates the management efficiency of the companies. The EPS and DPS are not same. EPS of companies does not give as DPS the certain amount as the retained earning. EPS and DPS of CHPCL is greater than BPCL.

- Closing cash balance of CHPCL is greater than BPCL. Both companies cash manage the efficiency.

- Correlation coefficient between CA and CL are positive relationship correlation coefficient (r) is insignificant.

5.3 Recommendations

In this section of study, few points than can be helpful to stakeholders as well as to the company are recommended based upon above calculations and drawn conclusions. These recommendation are guidelines, which would be helpful in taking prompt and appropriate decision about financial analysis and profitability. The recommendation are given below.

- The liquidity position of CHPCL are fluctuately trends. The current ratio of CHPCL highest in the fiscal year 2010/11. On the view of owner, the idle cash harmful of the company. I suggest to CHPCL that reduce

current ratio. High current ratio favorable for creditors. It shows that the high capacity to pay. CHPCL also reduce quick ratio. In case of BPCL was satisfactory to meet the standard norms. Both company do not care with the standard norms. Both company do not care with the standard norms of ratios. I suggest to both company should maintain the ratio with its norms.

- The inventory turnover ratio of CHPCL is decrease trends. Inventory turnover ratio indicates whether the investment in inventory is efficiently use or not. Both company efficiently use in inventory but the trends is decreasing. I suggest to both companies that trends convert into increasing trends.

- Capital employed turnover ratio to know the effectiveness in utilizing the capital employed for making sales activities. Higher capital turnover ratio shows the maximum utilization of capital employed. The both companies are satisfied on capital employed turnover ratio but he both companies trends are decreasing convert into increasing trends.

- Total assets turnover ratio measures the efficiency of utilizing total asset towards contribution of sales. CHPCL has high ratio indicators better business performance. In the case of BPCL has satisfied ratio. But both companies ratio are decrease trends. I suggest to both companies that convert into the increasing trend.

- Net profit margin ratio of both companies are fluctuate trends. It trends makes stable to face the any kinds challenges.

- ROA indicates the ability of generate the profit and it also evaluates the present return. ROA of both companies are fluctuate trends. It makes stables.

- ROE, EPS and DPS are fluctuate trends. Company should try to makes the stable or increasing trend.

BIBLIOGRAPHY

Books/Article/Journals

Asian Development Bank (2002). ***Poverty Reduction in Nepal***: Issue, Finding and Approaches. Manlia: ADB/M, March

Khan, M.Y. (1995). ***Financial Management***, New Delhi: Tata MC Graw Hill.

Kulkarni, P.V. (1983). ***Financial Management***, Bombay: Himalayan Publishing House.

Levin, Rose & Fervos, Sara (1998). ***Corporate Finance***, Kathmandu: Khusbu Prakashan.

Pandey, I.M. (1999). ***Financial Management***, New Delhi: Vikash Publishing House.

Pant, P.R. (1998). ***Field Work Assignment and Report Writing***, Kathmandu: Veena Academic Enterprises.

Pradhan, Radhe Shyam (2003). ***Research in Nepalese Finance***, 1st ed. Kathmandu: Buddha Academic Publishers & Distributors Pvt. Ltd.

Pradhan, Radhe Shyam (2004). ***Financial Management***, 1st ed. Kathmandu: Veena Academic Enterprises.

Roger, R. (2003). ***Appreciating Appreciative Inquiry, New Directions for Evaluation***, Winter 2003. Willey Periodicals inc.

Sharma, P.R. & Chaudhary, A.K. (2060). ***Statistical Method***, 2nd ed. Kathmandu: Khanal Books and Stationery.

Sharma, Puspa Raj. (2004). Micro-Financial: A Powerful Tool for Social Transformation, its Challenges and Principles. ***The Journal of Nepalese Business Studies,*** Vol. No. 1, pp. 69-74, P.N. Campus, Pokhara.

Sharma, Puspa Raj. (2004). Millennium Development Goals and International of Micro-finance 2005 in the Context of Nepal. The Journal of Nepalese Business Studies, Vol. 2. No.2, P.N. Campus, Pokhara

Sharma, Puspa Raj. (2006). Micro-finance and its Service Development Challenges and Opportunity in Nepal. Banijya Sansar Issue 12, Central Department of Management, T.U. Nepal.

Soloman, Ezra (1996). ***Theory of Financial Management.*** New York: Colombia University Press.

Van Horn, James C. (2005). ***Financial Management and Policy***, 12th ed. New Delhi: Prentice Hall of India Private Limited.

Weston, J. Fred & Copeland Thomas E. (1990). ***Managerial Finance***, 9th ed. USA: The Dryden Press.

Wolf, H.K. & Panta, P.R. (2005). ***Social Science Research & Thesis Writing***, 4thed. Kathmandu: Buddha Academic Publishers and Distributors Pvt. Ltd.

Dissertations

Thapa, Ram B. (2007). "Financial Performance Analysis of Nepal Electricity Authority", MBS Diss., P.N. Campus, Pokhara, T.U.

Parajuli, Rajendra (2010). "Financial Analysis of Putali Bazar Municipality", MBS Diss. P.N. Campus, Pokhara T.U.

Gurung, Til Bahadur, (2008). "A Case Study on Financial Performance Analysis of Standard Chartered Bank Nepal Limited in Framework of CAMEL". MBS Diss. T.U.

Deoja, S. (2001). "A Comparative Study of Financial Performance between Nepal State Bank of India Ltd. of Nepal Bangladesh Bank Ltd.", Master Diss., T.U.

Annual Reports

Chilime Hydropower Company Limited, Annual Reports (F.Y. 2006/07 to 2010/11)

Butwal Power Company Limited, Annual Report (F.Y. 2006/07 to 2010/11)

Arune Valley Hydropower Development Company Limited, Annual Report.

National Hydropower Development Company Limited, Annual Report.

Websites

www.ministryoffinance

www.hydropower.net

www.arunehydro.com.np

www.bpc.com.np

www.chilime.com.np

www.hydropowernews news

www.hydronews.net

www.hydropower-dams.com

www.nea.org.np

www.nepalstock.co.uk

www.nepalstock.com.np

www.nepalstock.org

www.nepjol.info.co.np

www.nejol.info.co.uk

www.nejol.net

www.nrb.org.np

www.tucl.orgnp/content/Nepal/nepali-journalonline.

APPENDIX-1

Current Assets to Current Liabilities

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

Current Assets to Current Liabilities of CHPCL

(In thousands)

F/Y	Current Asset	Current Liabilities	Current Ratios
2006/07	241801.42	268860.09	8.99
2007/08	646230.41	504088.49	1.28
2008/09	995074.77	364892.56	1.97
2009/10	1450092.99	102700.39	14.12
2010/11	2046285.12	107385.00	19.06
average			9.09

Source: Annual Reports

Current Assets to Current Liabilities of BPCL

(In thousands)

F/Y	Current Asset	Current Liabilities	Current Ratios
2006/07	647416	568510	1.14
2007/08	746138	570323	1.31
2008/09	743837	624543	1.19
2009/10	651519	566569	1.15
2010/11	600391	328979	1.82
average			1.32

Source: Annual Reports

APPENDIX - 2

Quick Assets to Current Liabilities

Quick Ratio= $\frac{Current\ Assets - Inventories}{Current\ Liabilities}$

Quick Assets to Current Liabilities of CHPCL

In thousands

F/Y	Quick Assets	Current Liabilities	Quick Ratio
2006/07	241801.42	268860.09	8.99
2007/08	65623041	504088.49	1.28
2008/09	995074.77	364892.56	1.97
2009/10	1450092.99	98773.26	14.08
2010/11	2046285.12	98977.1	18.98
average			9.05

Source: Annual Reports

Quick Assets to Current Liabilities of BPCL

F/Y	Quick Assets	Current Liabilities	Quick Ratio
2006/07	588520	568510	1.04
2007/08	671491	570323	1.18
2008/09	651114	624543	1.04
2009/10	546976	566569	0.96
2010/11	516978	328979	1.57
average			1.16

Source: Annual Reports

APPENDIX-3

Fixed Assets Turnover Ratio

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

Fixed Assets Turnover Ratio of CHPCL

(In thousands)

F/Y	Sales	Net Fixed Assets	Ratio
2006/07	903540.79	2010584.74	4.49
2007/08	870014.52	1908117.93	4.56
2008/09	88445.99	1812714.81	4.87
2009/10	886564.91	1764620.42	5.02
2010/11	885046.36	1671819.46	5.29
average			3.89

Source: Annual Reports

Fixed Assets Turnover Ratio of BPCL

F/Y	Sales	Net Fixed Assets	Ratio
2006/07	392938	691969	5.68
2007/08	446732	670639	6.66
2008/09	470688	703466	6.69
2009/10	479809	721034	6.65
2010/11	573892	1459337	3.93
average			5.21

Source: Annual Reports

APPENDIX-4

Inventory Turnover Ratio

Inventory Turnover Ratio = $\frac{Sales}{Inventory}$

Inventory Turnover Ratio of CHPCL

(In thousands)

F/Y	Sales	Inventory	I/T Ratio
2006/07	903540.79	12093.61	74.71
2007/08	870014.52	22321.95	38.97
2008/09	883445.99	36894.30	23.95
2009/10	886564.91	30901.73	28.69
2010/11	885046.36	53455.05	16.56
average			36.56

Source: Annual Reports

Inventory Turnover Ratio of BPCL

F/Y	Sales	Inventory	I/T Ratio
2006/07	392938	58896	6.67
2007/08	446732	74647	5.98
2008/09	470688	92723	5.08
2009/10	479809	104543	4.59
2010/11	573892	83413	6.88
average			5.84

Source: Annual Reports

APPENDIX -5

Total Sales to Capital Employed Ratio

Capital Employed Turnover Ratio= $\frac{Sales}{Capital\ Employed}$

Capital Employed = Total assets - Current liabilities

Total Sales to Capital Employed Ratio of CHPCL

F/Y	Sales	Capital Employed	Capital Employed Turnover Ratio
2006/07	903540.79	1841884.76	4.91
2007/08	870014.52	1862190.39	4.67
2008/09	883445.99	2408447.34	3.67
2009/10	886564.91	3375387.6	2.63
2010/11	885046.36	3988968.34	2.22
average			3.22

Source: Annual Reports

Total Sales to Capital Employed Ratio of BPCL

F/Y	Sales	Capital Employed	Capital Employed Turnover Ratio
2006/07	392938	1234855	3.18
2007/08	446732	1245556	3.59
2008/09	470688	1520363	3.09
2009/10	479809	1689925	2.84
2010/11	573892	2664772	2.15
average			2.97

Source: Annual Reports

APPENDIX 6

Total Assets Turnover Ratio

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

Total Assets Turnover Ratio of CHPCL

F/Y.	Sales	Total Assets	Ratio
2006/07	903540.79	2110745.66	4.28
2007/08	870014.52	2366278.88	3.68
2008/09	883445.99	2773339.90	3.18
2009/10	886564.91	3478087.99	2.55
2010/11	885046.36	4096353.34	2.16
average			2.77

Source: Annual Reports

Total Assets Turnover Ratio of BPCL

F/Y	Sales	Total Assets	Ratio
2006/07	392938	1882271	0.21
2007/08	446732	1991692	2.25
2008/09	470688	2264200	2.08
2009/10	479809	2341444	2.05
2010/11	573892	3265163	1.76
average			1.35

Source: Annual Reports

APPENDIX -7

Net Profit Margin to Sales Ratio

Net Profit Margin Ratio = $\frac{Net\ Profit\ Margin\ Ratio}{Sales} \times 100$

Net Profit Margin Ratio of CHPCL

F/Y	Net Profit	Sales	Ratio (%)
2006/07	667476.97	903540.79	73.87
2007/08	679372.06	870014.52	78.08
2008/09	735360.52	883445.99	83.24
2009/10	777431.85	886564.91	87.69
2010/11	843139.34	885046.36	95.26
average			83.63

Source: Annual Reports

Net Profit Margin Ratio of BPCL

F/Y	Net Profit	Sales	Ratio (%)
2006/07	252840	392938	64.35
2007/08	353879	446732	79.21
2008/09	291592	470688	61.95
2009/10	224233	479809	46.73
2010/11	328970	573892	57.32
average			61.91

Source: Annual Reports

APPENDIX-8

Return on Total Assets

Return on Total Assets=$\frac{Net\ ptofit\ after\ Tax}{Shareholder's Equity}$

Return on Total Assets of CHPCL

F/Y	Net Profit After Tax	Total Assets	ROA (in%)
2006/07	66476.97	2375736.12	28.09
2007/08	679372.06	2865714.02	23.71
2008/09	735360.52	3134868.99	23.46
2009/10	777431.85	3577424.91	21.73
2010/11	843139.34	4195007.61	20.09
average			23.42

Source: Annual Reports

Return on Total Assets of BPCL

F/Y	Net Profit After Tax	Total Assets	ROA (in%)
2006/07	252840	188271	13.43
2007/08	353879	1991692	17.77
2008/09	291592	2264200	12.88
2009/10	224,233	2341444	9.58
2010/11	328970	3265163	10.08
average			12.75

Source: Annual Reports

APPENDIX-9

Return on Shareholder's Equity

Return on Shareholder's Equity=$\frac{Net\ ptofit\ after\ Tax}{Shareholder's Equity}$

Return on Shareholder's Equity of CHPCL

F/Y	Net Profit	S.E	ROE
2006/07	66476.97	1942245.66	28.0
2007/08	679372.06	2366278.88	
2008/09	735360.52	2773339.90	
2009/10	777431.85	3478087.99	
2010/11	843139.34	4096353.34	
average			

Source: Annual Reports

Return on Shareholder's Equity of BPCL

F/Y	Net Profit	S.E	ROE
2006/07	252840	1210563	20.09
2007/08	353879	1294155	27.03
2008/09	291592	1417260	20.06
2009/10	224,233	1456788	15.04
2010/11	328970	2504757	13.01
average			19.46

Source: Annual Reports

APPENDIX-10

Earning per Share

$$EPS=\frac{Net\ Income}{No.of\ Share\ outstanding}$$

Earning per Share of CHPCL

In NPR

F/Y	Earning Per Share
2006/07	91.49
2007/08	93.12
2008/09	100.79
2009/10	106.56
2010/11	102.12
average	98.82

Source: Annual Reports

Earning Per Share of BPCL

In NPR

F/Y	Earning Per Share
2006/07	30.13
2007/08	42.18
2008/09	34.75
2009/10	24.29
2010/11	32.40
average	32.75

APPENDIX-11

Dividend per Share

$$DPS=\frac{Total\ Dividend}{No.of\ Ordinary\ Shares}$$

Dividend per share of CHPCL

In NPR

Fly	Dividend per Share
2006/07	30
2007/08	35
2008/09	45
2009/10	60
2010/11	70
average	48

Source: Annual Reports

Dividend per Share of BPCL

In NPR

F/Y	**Dividend per Share**
2006/07	25
2007/08	30
2008/09	30
2009/10	30
2010/11	25
average	28

Source: Annual Reports

APPENDIX -12

Price Earning Ratio

Price Earning ratio of CHPC

F/Y	Market price per Share	EPS	P/E ratio
2006/07	940	91.49	10.27
2007/08	1562	93.12	16.77
2008/09	1296	100.79	12.86
2009/10	1101	106.56	10.33
2010/11	822	102.12	8.05
average			11.66

Source: Annual Reports

Price Earning ratio of BPCL

F/Y	Market price per Share	EPS	P/E ratio
2006/07	1440	30.13	47.79
2007/08	1540	42.18	36.51
2008/09	1270	34.75	36.55
2009/10	1090	24.29	44.87
2010/11	739	32.40	22.81
average			37.71

Source: Annual Reports

APPENDIX -13

Operating Expenses to Sales

Operating Expenses Ratio = $\frac{Operating\ Expense}{Sales}$

Operating Expenses to Sales of CHPCL

F/Y	Operating Expenses	Sales	Ratio
2006/07	132992.7	903540.79	14.72
2007/08	101572.49	870014.52	11.67
2008/09	96638.09	883445.99	10.94
2009/10	111931.11	886564.91	12.62
2010/11	126183.61	885046.36	13.96
average			12.78

Source: Annual Reports

Operating Expenses to Sales of BPCL

F/Y	Operating Expenses	Sales	Ratio
2006/07	201996	392938	53.22
2007/08	199046	446732	44.56
2008/09	244953	470688	52.04
2009/10	387488	479809	80.76
2010/11	364883	573892	63.58
average			58.83

Source: Annual Reports

Appendix -14

Correlation coefficient Between Current Assets and Current Liabilities

Probable Error

$$r = \frac{N\sum xy - \sum x \sum y}{\sqrt{N\sum x^2 - (\sum x)^2} \times \sqrt{N\sum Y^2 - (\sum Y)^2}}$$

where,

N = Numbers of Observations

X and Y are variables.

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

where,

r = Correlation coefficient

N = Number of Pairs of Observations.

Correlation coefficient Between TD and SHE of CHPAL. (In million)

F/Y	**Current Assets (X)**	**Current Liabilities (Y)**	**XY**	**X^2**	**Y^2**
2006/07	241.80	268.86	65010.35	58467.24	72285.69
2007/08	646.23	504.09	325758.08	417613.21	254106.73
2008/09	995.07	364.89	363091.09	990164.30	133144.71
2009/10	145.01	102.70	14892.53	21027.90	10547.29
2010/11	204.63	107.38	21973.17	41873.44	11530.46
Total	$\sum x = 2232.74$	$\sum y = 1347.92$	$\sum xy$= 790725.24	$\sum x^2 = 1529146.08$	$\sum y^2 = 481614.88$

$$r = \frac{N\sum xy - \sum x \sum y}{\sqrt{N\sum x^2 - (\sum x)^2}\sqrt{N\sum y^2 - (\sum y)^2}}$$

$$= \frac{5\times 790725.22 - 2232.74\times 1347.92}{\sqrt{5\times 1529146.08 - (2232.74)^2}\sqrt{5\times 481614.88 - (1347.92)^2}}$$

$$= 0.75$$

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

$$= 6\times \frac{0.6745\times[1-(0.75)^2}{\sqrt{5}}$$

$$= 0.792$$

Correlation coefficient between TD and SHE of BPCL (in million)

F/Y	Current Assets (X)	Current Liabilities (Y)	XY	X^2	Y^2
2006/07	647.42	568.51	368064.74	419152.65	323203.62
2007/08	746.14	570.32	425538.56	556724.89	325264.90
2008/09	743.84	624.54	464557.83	553297.95	390050.21
2009/10	651.52	566.57	369131.68	424478.31	321001.56
2010/11	600.39	328.98	197516.30	360468.15	108227.84
Total	$\sum x = 3389.31$	$\sum y = 2658.92$	$\sum xy = 1824809.11$	$\sum x^2 = 2314121.95$	$\sum y^2 = 1467748.13$

$$r = \frac{N\sum xy - \sum x.\sum y}{\sqrt{N.\sum x^2 - (\sum x)^2}\sqrt{N\sum y^2 - (\sum y)^2}}$$

$$= \frac{5\times 1824809.11 - 3389.31\times 2658.92}{\sqrt{5\times 2314121.956 - (3389.31)^2}\sqrt{5\times 1467748.13 - (2658.92)^2}}$$

$$= 0.749$$

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

$$=6\times\frac{0.6745\times(1-(0.749)^2}{\sqrt{5}}=0.79$$

Appendix -15

Correlation Coefficient between ROA and EPS of CHPCL

Correlation coefficient Between ROA and EPS of CHPAL. (In million)

F/Y	ROA (X)	EPS (Y)	XY	X^2	Y^2
2006/07	28.09	91.49	2569.95	789.05	8370.42
2007/08	23.71	93.12	2207.87	562.16	8671.33
2008/09	23.46	100.79	2364.53	550.37	10158.62
2009/10	21.73	106.56	2315.55	472.19	11355.03
2010/11	20.09	102.12	2051.59	403.61	10428.49
Total	$\sum x = 117.08$	$\sum y = 494.08$	$\sum xy =$ 11509.49	$\sum x^2 = 2777.19$	$\sum y^2 = 48983.89$

$$r = \frac{N\sum xy - \sum x \sum y}{\sqrt{N\sum x^2 - (\sum x)^2}\sqrt{N\sum y^2 - (\sum y)^2}}$$

$$= \frac{5\times 11509.49 - 117.08\times 494.08}{\sqrt{5\times 2777.7 - (117.08)^2}\sqrt{5\times 48983.89 - (494.08)^2}}$$

$$= 0.7985$$

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

$$= 6\times \frac{0.6745\times[1-(0.798)^2}{\sqrt{5}}$$

$$= 0.06559$$

Correlation coefficient between TD and SHE of BPCL (in million)

F/Y	ROA (X)	EPS (Y)	XY	X^2	Y^2
2006/07	13.43	30.13	404.65	180.36	907.82
2007/08	17.77	42.18	749.54	315.77	1779.15
2008/09	12.88	34.75	447.58	165.89	120.56
2009/10	9.58	24.29	232.69	91.78	590.00
2010/11	10.08	32.40	326.59	108.86	1049.76
Total	$\sum x = 63.74$	$\sum = 163.75$	$\sum xy = 2161.05$	$\sum x^2 = 862.66$	$\sum y^2 = 5534.29$

$$r=\frac{N\sum xy-\sum x.\sum y}{\sqrt{N.\sum x^2-(\sum x)^2}\sqrt{N\sum y^2-(\sum y)^2}}$$

$$=\frac{5\times2161.005-63.74\times163.75}{\sqrt{5\times862.66-(63.74)^2}\sqrt{5\times5534.29-(163.75)^2}}$$

= 0.7937

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

$$=6\times\frac{0.6745\times(1-(0.9737)^2}{\sqrt{5}}$$

= 0.9929

APPENDIX-16

Correlation between EBIT and DPS

Correlation Coefficient between EBIT and DPS of CHPCL

F/Y	EBIT(X)	DDPS(Y)	XY	X^2	Y^2
2006/07	816.29	30	24488.7	666329.36	900
2007/08	788.24	35	27588.4	621322.29	1225
2008/09	838.93	45	37751.85	703803.56	2025
2009/10	883.75	60	53025	781014.06	3600
2010/11	1170.12	70	81908.4	1369160.81	4900
Total	$\sum x = 4497.33$	$\sum y = 240$	$\sum xy = 224762.35$	$\sum x^2 = 4141650.06$	$\sum y^2 = 12650$

$$r=\frac{N\sum xy-\sum x.\sum y}{\sqrt{N.\sum x^2-(\sum x)^2}\ \sqrt{N.\sum y^2-(\sum y)^2}}$$

$$=\frac{5\times224762.35-4497.33\times240}{\sqrt{5\times4141650.06-(4497.33)^2}\sqrt{5\times12650-(240)^2}}$$

=0.8516

$$P.E = 6\times\frac{o.6745\times(1-r^2)}{\sqrt{N}}$$

$$=6\times\frac{0.6745\times(1-(0.8516)^2}{\sqrt{5}}$$

=0.4973

Correlation Coefficient between EBIT and EPS of BPCL

F/Y	EBIT(X)	DPS(Y)	XY	X^2	Y^2
2006/07	267.73	25	6693.25	71679.35	625
2007/08	370.53	30	11115.9	137292.48	900
2008/09	311.75	30	9352.5	97188.06	900
2009/10	267.54	30	8026.2	71577.65	900
2010/11	392.50	25	9812.5	154056.25	625
Total	$\sum x = 1610.05$	$\sum y = 140$	$\sum xy = 45000.35$	$\sum x^2 = 531793.79$	$\sum y^2$ 3950

$$r = \frac{N.\sum xy - \sum x.\sum y}{\sqrt{N.\sum x^2 - (\sum x)^2}\sqrt{N.\sum y^2 - (\sum y)^2}}$$

$$= \frac{5\times 45000.35 - 1610.05\times 140}{\sqrt{5\times 531793.79 - (1610.05)^2}\sqrt{5\times 3950 - (140)^2}}$$

= 0.1218

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

$$= 6\times\frac{0.6745\times(1-(0.128)^2}{\sqrt{5}}$$

1.7802

APPENDIX-17

Correlation Coefficient between net Profit and Net Worth of CHPCL

Correlation Coefficient between Net Profit and Net Worth of CHPCL

F/Y	Net Profit(X)	Net Worth (Y)	XY	X^2	Y^2
2006/07	667.48	2110.74	1402201.93	445529.55	4455223.35
2007/08	679.37	2366.28	1607579.64	461543.60	5599281.04
2008/09	735.36	2773.33	540754.33	540754.33	7691359.28
2009/10	777.43	3478.81	604397.40	604397.40	12102119.02
2010/11	843.14	4096.35	710885.06	710885.06	16780042.36
Total	$\sum x = 3702.78$	$\sum y = 14825.51$	$\sum xy = 1127505.32$	$\sum x^2 = 2763109.94$	$\sum y^2 =$ 46628025.05

$$r=\frac{N\sum xy-\sum x.\sum y}{\sqrt{N.\sum x^2-(\sum x)^2}\ \sqrt{N.\sum y^2-(\sum y)^2}}$$

$$=\frac{5\times 11207505.32-3702.78\times 14825.51}{\sqrt{5\times 2763109.94-(3702.78)^2}\sqrt{5\times 46628025.05-(14825.51)^2}}$$

=0.9648

$$P.E = 6\times\frac{o.6745\times(1-r^2)}{\sqrt{N}}$$

$$=6\times\frac{0.6745\times(1-(0.9648)^2}{\sqrt{5}}$$

=0.1252

Correlation Coefficient between Net Profit and Net Worth of BPCL

F/Y	Net Profit(X)	Net Worth (Y)	XY	X^2	Y^2
2006/07	252.84	1210.56	306077.99	63928.06	1465455.51
2007/08	353.88	1294.15	457973.80	125231.05	1674824.22
2008/09	291.59	1443.99	421053.04	85024.73	2085107.12
2009/10	224.23	1514.76	339654.63	50279.09	2294497.86
2010/11	328.97	3685.87	1212540.65	108221.26	13585637.66
Total	$\sum x = 1451.51$	$\sum y = 9149.33$	$\sum xy = 2737300.11$	$\sum x^2$=432684.19	$\sum y^2$=21105522.37

$$r = \frac{N.\sum xy - \sum x.\sum y}{\sqrt{N.\sum x^2 - (\sum x)^2}\sqrt{N.\sum y^2 - (\sum y)^2}}$$

$$= \frac{5\times 2737300.11 - 1451.51\times 9149.33}{\sqrt{5\times 432684.19 - (1541.51)^2}\sqrt{5\times 21105522.37 - (9149.33)^2}}$$

$= 0.3657$

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

$$= 6\times\frac{0.6745\times(1-(0.3657)^2}{\sqrt{5}}$$

$=1.568$