FINANCIAL PERFORMANCE OF HYDROPOWER COMPANIES IN NEPAL

(With special Reference to Butwal Power Company Limited and Chilime Hydropower Company Limited)

A THESIS

Submitted By:
Ranjana Pokharel
Patan Multiple Campus
Campus Roll No: 155/068
T.U.Reg.No.7-2-455-56-2008

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

In partial fulfillment of the requirement for the degree of
Master of Business (MBS)

Kathmandu, Nepal
December, 2018

RECOMMENDATION

This is to certify that the Thesis

Submitted By:

Ranjana Pokharel

Entitled:

FINANCIAL PERFORMANCE OF HYDROPOWER COMPANIES IN NEPAL
(With special Reference to Butwal Power Company Limited and Chilime Hydropower Company Limited)

Has been prepared as approved by this Campus in the prescribed format of the Faculty of Management. This thesis is forward for examination.

....	………………………..	………………………………
(Mr. Dipendra Dhungana)	(Mr.Ballav Niroula)	(Mr.Dinesh Man Malego)
Thesis supervisor	Co-ordinator, M.B.S Program	Asst. Campus Chief

Date:…………………………………………….

DECLARATION

I hereby declare that the work reported in this thesis entitled " Financial Performance of Hydropower Companies in Nepal: with special Reference to "Butwal Power Company Limited and Chilime Hydropower Company Limited" submitted to Patan Multiple Campus, faculty of management. T.U. is my original works done in the form of partial fulfillment of the requirement for the Masters of Business Studies (M.B.S) under the guidance of respected teacher Mr. Dipendra Dhungana of Patan Multiple Campus.

....
Ranjana Pokharel

T.U.Reg.No. 7-2-455-56-2008

Campus Roll No: 155/068

ACKNOWLEDGEMENTS

This Thesis would not have been possible without the generous assistance and cooperation of many contributors. I therefore wish to convey my heartfelt thanks and sincere appreciation to the following people for the contribution they have made towards the completion of this study.

I would like to express my sincere thanks to Mr. Dipendra Dhungana for his guidance and cooperation throughout the study. It was more than honoring to the part of project that are guided by him.

Without the support from faculty member and staff of MBS program, I would not have completed this research in time. I am grateful to all faculty members for their concern and support during various stages of this thesis. I am especially thank full to Chief coordinator of MBS program Mr. Ballav Niroula and Associate Professor Dr. Yubaraj Bhattarai.for their support.

My deepest thanks goes to my family and colleagues for their encouragement, support and company during my studies. Without their encouragement and continuous support this thesis would have never been completed. I am thank full to all those who have encouraged me in this study directly and indirectly.

Thank you all

Ranjana Pokharel

Patan Multiple Campus

December, 2018

TABLE OF CONTENT

LIST OF TABLE

LIST OF FIGURE

ABBREVIATIONS

BPC: Butwal Power Company

CHPCL: Chilime Hydropower Company Limited

CR : Current Ratio

CV : Coefficient of Variation

D/E Ratio : Debt-Equity Ratio

DTAR : Debt to Total Assets Ratio

DTR: Debtor Turnover Ratio

EPs : Earning Per Share

FATOR : Fixed Assets Turnover Ratio

INPS: Integrated Nepal Power System

ITR: Inventory Turnover Ratio

NEA : Nepal Electricity Authority

NPR : Net Profit Ratio

OER : Operating Expenses Ratio

PE : Probable Error of Correlation coefficient

R : Co-efficient of Correlation

ROE : Return On Equity

ROTA : Return On Total Assets Ratio

TATOR: Total Assets Turnover Ratio

CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

Hydropower projects in Nepal have been deemed to be expensive primarily because of the fact that cost of access roads and power evacuation transmission lines are added on to the hydropower projects cost. As well as all know most of the better hydropower projects sites are in remote mountainous locations requiring construction of access roads prior to projects constructions. This along with the high voltage power evacuation system renders power from these projects comparatively expensive. This can lead to hydropower projects losing their competitive advantage with respect to other sources in the energy market. It is in this context that government of Nepal, donor agencies multilateral lending agencies should change their focus towards development of trunk highways in the major river valleys of Nepal similarly, high voltage transmission lines should also be developed in these river valleys this will lead to opening of these river valleys for private power producer companies to develop power projects around these rivers and their tributaries resulting in less expensive power and adding the competitive advantages. That clean from of energy has, the private sector is taking greater stride towards economic activities such as power project development and believes that it should have a greater role in the decision making process of the government when it comes to national economic issues bilateral and multilateral issues which have a direct impact on this industry.

The hydropower sector clearly has tremendous potential for contributing to growth and development impact and benefits. It is estimated that Nepal has the capacity to generate 83000 MW of electricity from hydropower. Of this, about 45000 MW is considered economically feasible. At present, the installed capacity of hydropower is about 1000 MW less than 2 percent of the total economically feasible capacity. Of this, 156 MW about 28 percent is produced by public private sector power producers. Taking advantage of the new policy of welcoming private foreign investment in this sector, to joint-business companies involving important foreign investor have been generating selling hydropower on the build-operate-transfer basis for some years now. Several private-public sectors are under constructions. Even then it is estimated that the electricity accounts for a very small share of the total energy consumption in the country. Fuel wood accounts

for roughly 75 percent of the total energy consumption. Right now only a small percentage of the country's population, less than 20 percent, is using electricity for household consumption.

The range of the size of the project for FDI in Nepal right now in terms of generation capacity and or the size of investment is very wide, from relatively small hydropower generation schemes to very large hydro power projects. There is thus a wide range of investment opportunities.

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

1.2   Introduction to Butwal Power Company & Chilime Hydropower Company Limited

Hydro Power Companies is an entity which is not a public utility, but which owns facilities to generate electric power for sale to utilities and end user. Butwal Power Company Ltd, Chilime Hydropower Company Ltd, Himal Power Ltd, Bhotekoshi Power Company Ltd, Arun Valley Hydropower Company Private Ltd, Sanima Hydropower Company Privaye Ltd, National Hydro Power Company Ltd, Syangja Bidyut Company Ltd, Rairang Hydropower Devlopment Company Private Ltd, Kundi Hydro Power Ltd, Unique Hydel Company Private Ltd, Allaince Power Private Ltd are the example of Hydro-power Companies in Nepal.

1.2.1   Butwal Power Company (BPC) Limited

Butwal Power Company (BPC) was incorporated in 1965 AD standing today with 52 years of experience in the hydropower sector and has placed itself as one of the leading listed company in Nepal. When the total capacity of the country was only 3.45 MW. BPC is established with assistance from the United Mission to Nepal. It has developed Tinau Project In 1967 AD to light up the town of Butwal and to promote industrial development in the area.BPC is one of the pioneering hydropower developers in Nepal from private sector. BPC is one of the shareholders of 60 MW Khimti hydropower project. This Company owns and operates the 12 MW Jhimruk

Hydropower Plant and the 5.1 MW Andhikhola Hydropower plant. Besides supplying power to the national electricity grid, the company has electrified more than 20,000 households through these power plants under its rural electrification program. It owns 16.88% of the share in Khimti Hydropower Plant (60MW) and 48.6% of the share in Nepal Hydro and Electric Pvt. Ltd.

BPC was privatized in 2003. The main shareholders of BPC are Shangri- la Energy Limited, Interkraft Norway, the public and the Ministry of Water Resources of Nepal. The distributions of shares of BPC are: Shangri–la Energy Limited 69.73%, public 12.14%, GON Corporation 18.13%. BPC is a very good example for being a company jointly owned by the Public, Private, Government and Employees.BPC has the vision to provide quality and competitive services to its customers. Similarly the mission of the company is to supply electricity within its distribution areas in Nepal and expand its distribution to feasible areas. It will plan, build, acquire, own and operate electric power plants as well as purchase electricity to meet its electricity needs, make strategic investment to support its interest, supply affordable electricity, and render professional services in its areas of expertise.

1.2.2 Chilime Hydropower Company Limited (CHPCL)

Chilime Hydropower Company Limited (CHPCL) is a subsidiary company of NEA with 51% equity ownership. The company was established in 1966 with the objective of promoting the utilization of resources within the country for the development of hydropower. Chilime Hydroelectric Project with installed capacity of 22.1 MW and located at Rasuwa district was built and commissioned by this Company on August 25, 2003(2060/5/8). This Project is now in fifth year of commercial operation. The Project has delivered 528.63 GWh of electrical energy to NEA since August 2003. In FY 2006/07, the Project was successful in delivering 104.5% of the Contract Energy to NEA; NEA has invested NRs. 489.6 million in the Project and has received the dividend of 10%, 20% and 30% of its equity stares in the FY 2003/04, 2004/05 and 2005/06 respectively. In FY 2006/07, 25% of the equity shares were distributed to NEA staff. The shareholders received 35% dividend in that year.

CHPCL is now executing three more hydroelectric projects which are at various stages of development. The feasibility study of two projects, Upper Sanjen Hydroelectric Project (14.8 MW)

and Sanjen Hydroelectric Project (42.5 MW) have been completed and application has been submitted for the power purchase agreement with NEA Both of these Projects are located upstream of the existing Chilime HEP. Local People are very eager to participate in the implementation of these Projects. A Letter of Intent for financing in Upper Sanjen HEP has already been received from Citizen Investment Trust. Construction of these two Projects will be started as soon as the constructions license is issued by the Ministry of Water Resources. CHPCL has also completed the feasibility study of Middle Bhotekoshi Hydroelectric Project (102 MW) located in Sindhupalchok district. Local People of Sindhupalchok district and other organizations will be participating in the development of this Project. CHPCL is committed to develop more of medium and large scale hydroelectric projects in future with greater participation from various sectors in the country.

1.3 Focus of the Study

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

1.4 Statement of the Problems

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

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

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

- What is the financial positions and performance of the Hydropower companies in Nepal?

1.5 Objectives of the Study

The study basically aims to evaluate the financial performance or Butwal Power Company Limited (BPC) and Chilime Hydropower Company Limited (CHPCL). The specific objectives of the study will be:

- To analyze the financial performance of BPC and CHPCL.
- To predict the growth trend of the financial indicators.

1.6 Limitations of the Study

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

The study covers a period of 5 years from the first fiscal year 2012/013to the recent fiscal year 20016/17 of CHPCL and that of BPC but the main focus is financial factors.
The secondary data is basic input of the study and, thus, accuracy of conclusions derived from them highly depends upon the reliability of these data.

Since the study is mainly concerned with BPC and CHPCL out of 12 Hydropower Companies in operation, the conclusion drawn from the study, and the suggestions offered may not be applicable to any other private or public enterprise.

1.7   Significance of the Study

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

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

This study attempts to provide information and draw the attention of private and non-governmental agencies that are willing to invest in hydropower projects in Nepal. This study also expects to provide some appropriate measures to solve financial problems of Nepalese private public sector hydropower companies if any researchers who are interested in the study of the financial performance of similar hydropower business may find this study of use.

1.8   Organization of the Study

The aim of the dissertation is to explain the financial position of Nepalese Hydropower Companies, here BPC and CHPCL the study has been divided into five chapters. Each chapter is dented to sour aspects or the study. The major chapters of the study are as follows:

Chapter One   Introduction

Chapter Two   Review of Literature

Chapter Three   Research Methodology

Chapter Four   Presentation and Analysis of Data

Chapter Five   Summary, Conclusion and Recommendations

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

Chapter Two reviews available literature regarding findings and recommendations of previous research work.

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

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

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

CHAPTER TWO

REVIEW OF LITERATURE

2.1   Conceptual Framework

Review of literature is actually a process of consulting published books, journals and unpublished (dissertation, field work) literatures related and relevant to one's selected topics. The main purpose or literature review is to find out what works have been done in the area of the research problem and what remains undone in the field of research being undertaken. While conducting the research study, previous studies should also in be ignored to avoid duplication of studies.

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

2.1.1   Financial Statement Analysis

"The Financial Statement Analysis reveals how far the dreams and ambitions of the top management have been converted into reality during each financial year. It involves compassion of a company's performance with that of other companies in the same line of business, which is often identifying the company's industry classification. An analysis of financial statements should provide analysts with better understanding of the financial condition and performance of a company, than they can obtain from analysis of the financial data alone" Van & Horn (2000).

Essentially, the function of financial statements is to convey to the reader. In summary from, certain fundamental information regarding the financial health of the company at a particular pout in time, the economic results of its operations fur a given period of time, together with a review of the causes fur change in components of the company's financial structure over a Period of time.

There are three major financial statements in common use at the Present time. They are the following Lynch &Williamson (2003).

(a) Balance Sheet

The Balance Sheet, or Statement of Financial Position, Portrays the financial structure or the company in terms of its economic resources and the respective interests or claims on such resources. A balance sheet shows the financial position of a company by detailing the source or funds and the utilization of these funds, properly classified and arranged in a specific manner. It communicates information about the assets and liabilities and owners' equity of a company as on a specific date, usually at the end of each financial year.

(b) Income Statement

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

(c) Statement Change in Financial Position

The statement of changes in financial position provides in summary from the result of the transaction over a given period of involving the assets (or funds) of the firm. Basically, it measures changes in key segment of the firm's capital structure in terms of sources of funds acquired dining the Period and the important used to which such funds were put. Used in conjunction with the balance sheet and income statement, its importance lies in its ability to supply an item which represents a deficiency as earth of the other statement.

2.1.2   Techniques or Financial Statement Analysis

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

9

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

(a) Funds Flow Statement

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

(b) Cash Flow Analysis

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

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

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

(c) Trend Analysis

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

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

"Trend analysis is an analysis of a company's financial ratios over time, made in order to determine the improvement or deterioration of its financial situation. But trend ratios are generally not computed for all of the items in the statement, as the fundamentals objective is to make comparison among ate having same logical relationships to one another. (Brigham, 1979).

(d) Ratio Analysis

"Ratio analysis is a widely used tool of financial analysis. It is defined as the systematic use of ratio to interpret the financial statements so that the strengths and weaknesses of firms as well as its historical Performance and current financial condition can be determined. The term ratio refers to the numerical or quantitative relationship between two items' variables Khan & Jain (1999).

2.2 Review of Related Plans& Policies

2.2.1 "Electricity Development Policy-2058"

Government or Nepal envisaged achieving the following by 2007 in its "Electricity Development Policy-2058":

- A dominant private sector contributing 75 percent of total investment in hydropower ;
- Boosting or industrial consumption's by 125 Percent;
- Establishment of power development fund and infrastructure development bank.
- Boosting of hydro capacity to meet demand of Rs.20 MW or which 70 MW to be export.

"Electricity Development Policy-2058" is imposed with the following objectives:

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

"Electricity Development Policy-2058" adopts the following Policies to achieve above objectives:

- Construction and implementation of hydropower projects shall be encouraged to promote on the principles of Build-Operate-Own Transfer (BOOT).

- For making the electricity service dependable, reliable and extension of qualitative service delivery within the kingdom at reasonable cost; the existing public sector institution shall be restructured to promote the participation by creating competitive environment of community/ corporations, institutions, local agencies and private sector in power production, transmission and distribution.

- Small and medium hydropower projects shall be developed and promoted for domestic use in order to strengthen the station of domestic Power ply the priority shall be given to develop hydropower projects on a completive basis suitable to the electricity.

- The hydropower projects shall be identified or export purposes. The private sector shall export the electricity by developing such projects.

- The major multipurpose storage projects shall be developed in a way to render the maximum downstream benefit to the company.

- The electrification program in the rural areas shall be encouraged.

- The rural electrification program shall be expanded in order to make the electricity services available to maximum People. A "Rural Fund Electrification" shall be established for this purpose.

- The unauthorized leakage of electricity shall be controlled. For this purpose necessary technical measures shall be adopted and legal arrangements shall be formulated. Besides these measures emphasis shall be given to mobilize people participation to control the leakages.

- Incentives shall be provided for the proper utilization of electrical energy. In this context, incentives shall be provided for the use of electrical energy for village water supply, irrigation industry and tourism sectors when electricity demand is low (when supply is in excess of demand).

- Capital market shall be operated for investment in the electricity sector.

- The use of local labor and skill shall be given priority in implementing the hydropower project.

- The industry producing the construction materials and equipment to be used in the electricity sector shall be encouraged to develop the industry.
- Proper Arrangements shall be made to cover the risks arising in hydropower projects
- Arrangements shall be made to provide appropriate benefits at the local level while operating hydropower projects.
- Regarding multi-purpose projects, the government could become a partner with private sector looking at the possibility of irrigation development.

2.3 Review of Related Studies

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

Maharjan (1998). The projects run by foreign parties are not benefiting the country in real term. The PPAs reached with them have far-reaching and long-term implications. The electricity tariff of the country is among the highest in the world. Moreover, donors also impose high tariffs as a precondition for financing hydro projects. Foreign aid, which is invested in hydel projects, often comes along with harsh conditions. There is no transparency, accountability, effective monitoring mechanism and financial discipline in such projects. Rather, corruption and maladministration would rule the roost. Also there is often delay in hydro projects and the cost also tends to shoot up visa-visa contract amounts. Nepalese rupee devaluation, additional works and the likes are cited as causes for high costs. Such arguments do not hold water since contacts undertaken by competent and experienced foreign parties already take into account all such factors as may influence the projects. Viewed thus, only slight price adjustments may crop up In contrast; small and medium-scale hydro projects are suitable for the county, since low capital and indigenous expertise suffice to operate such projects. Besides, these projects also answer the needs of local people and enlist their Participation for quality services.

As the reports say that the generating cost of the project is a mere Rs. 2.19 Per unit, and selling that to Nepal Electricity Authority (NEA) at Rs. 5 per unit as per the Power Purchase Agreement (PPA) still slackens Chilime company with good profit the editorial of "New Business Age- Cheap Chihme?" inscribes that if all the power project were like Chilime, the country's power bill would have been significantly lower than what it is today. However, the editorial points out that hydroelectricity projects, unlike their thermal counterparts, are location specific, causing additional transmission cost both in terms or initial capital cost as well as the recurring operational cost in the present context, they are also more vulnerable from security point of view.

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

Poudel (2001). The Chilime power cost cheaper by at least 60 per cent compared to the price of the power which stands at over Rs.5currently generated by similar foreign- developed and financed projects like the 60-MW Khimti and the 36-MW Bhotekoshi power projects. Hydropower experts and official closely following the developments expressed happiness and welcomed the Chilime-type initiative which, to quote them, 'would save the nation from bankruptcy and lead towards self-dependency and prosperity. Referring to chartered accountant -corn-energy expert Ratna Sansar Shrestha, the article adds that, the per unit price of locally-developed Chilime would climb to Rs 8 or 10 while the cost or Khimti and Bhotekoshi supplied power would shoot up to a whopping Rs42 more than five times that of chilime- by 2016.

Nepal (2005) in his article *"Managing Nepalese Waters"* has presented two logics to verify the impossibility for Nepal alone to harness water for hydropower in a large scale. First it has been estimated that the cost for the production of Nepal's capacity of 42,000 MW would come roughly to US$ 80.00 billion and for 25,000 MW, it would be around US$ 50,000.00 billion. And second,

Nepal's Fiscal Budget for 2004/2005 was just nearly US$1.6 billion. He has also mentioned that due to poor motivation of the local investors, Nepal's cheapest projects like Upper Tamakoshi have been wasted. The Norwegian Feasibility Study reveals that nearly US$300.00 million is necessary for the project including 65 KM road black topping. 33 KM of which is to be newly constructed to connect the site. The cost per unit thus cones nearly 89 Nepali Paisa. Money can be allocated from: the remittances of the Nepalese workers abroad, banks provident fund reserves, etc., if the government has zeal.

Pokharel (2006) in his article "*Nepal's Hydropower Dream; Are We Prepared for Nightmares*", has criticized that electricity is expensive. But it is not because of high production cost, instead t is because of various policy and regulatory failures. Government controlled NEA has sole authority on transmission and distribution of electricity in Nepal. In spite of selling most expensive electricity under the region to its consumers, in 2006 alone, the NEA has suffered a loss of Rs 247 billion with cumulative loss of Rs7 billion by this year.

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

Pandey (2003) in his article "*People power",* has pointed out three main reasons why locally designed projects are less expensive:
- The cost of capital borrowed from local banks is at its lowest point in many years.
- Developers had complete flexibility in where they source their equipment and how they pick contractors, and they can get the best prices.

- Smaller projects mean fewer technical complications and the ability to breakdown contracts into small components that could be bid out among a large number or competitive Nepali, Indian and Chinese companies.

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

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

Khadka (2007) in his research *"Profit Planning in Hydropower Industry"*, has examined far the different financial budgets were being applied as tool for profit planning in BPC. The study reports that though yearly net earnings are satisfactory BPC is suffering from high fixed costs unsystematically classified overhands, poor inter-departmental coordination and, lack of investment and tax plan's. There is no definite target to distribute the yearly dividend to the shareholders Human and financial performance system is not well developed. However, the strength of BPC is that m has plenty of funds available and. these are no bans aid borrowings which indicates its sound financial condition.

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

Khadiwada (2007) on the top *"Financial Performance Analysis of Butwal Power Company"*, examines the financial strength and weaknesses of BPC based on are ratio analysis, income and expenditure analysis and, least square trend analysis. The study reveals that apart from total assets turnover ratio and capital employed turnover ratio all other ratios are satisfactory and indicate good financial performance of BPC. It also reveals that both the operating income and operating expenses are in decreasing trend, but as the income is diversified appropriately the company possess a good sustaining Power. The tread analysis reveals that the company has done better in sales but worse in operating income over the Period.

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

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

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

2.4   Concluding Remarks

The purpose of this study is to draw some idea concerning to the maintained to the financial performance and to see what new contribution can be made and to receive some ideas, knowledge and suggestions in relation to maintained good performance of hydropower companies. In this context the previous studies can't be ignored because the previous the foundation to the present study. In other words, there has to be continuity in research. This community in research is ensured by linking the present study with the past research studies. It is clear that the reference of new research can't be found on the exact topics, i.e. "Financial performance emulation or Private - Public Sectors hydropower Companies" therefore to complete this research work, many books, and journals articles and various published and unpublished dissertations and field opinion aw followed as guideline to make the research easier and smooth though these reference materials. The researcher urn find out the gaping from tee past research that has to be fulfilled by the present research work. In this regard, here the researcher is going to analyze the different procedure financial performance techniques of the selected hydropower companies.

"Financial performance evaluation of Private- Public Sector hydropower" is a new topic for the research work. It is expected that the uncovered areas of this research work will be studied. The gapping between old and new research work will be focused and filled up based on the given objectives and limitation in this research.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

Research is a systematic and organized effort to investigate a specific problem that needs a solution. This process of investigation involves a series of well thought out activities of gathering, recording, analyzing and interpreting the data with a purpose of finding answers to the problem. So research is an ongoing and growing activity. It is done not only to solve a problem existing in the work setting, hit also to add or continue to the general body of knowledge m a particular area of interest Research Methodology is the way to solve systematically about the research problem Pant (2005).

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

3.2 Research Design

Research design is the plan, structure and strategy of the investigation conceived so as to obtain answers to research questions. Basically, the research design has two purposes. The first is to answer the research question and second is to control variance. A research design is the plan of attack what approach to the problem will be taken? What methods will be used?, and what strategies will be most effective?

This research design is basically the comparative evaluation of BPC and CHPCL. Descriptive and analytical approaches were used to evaluate the financial Performance of these Hydropower Companies. Descriptive approach is utilized for conceptualization, problem identification, conclusion and suggestion of the study whereas analytical approach will be followed for the presentation and analysis of data. The data have been analyzed on the basis of standard financial formulas used in the books of financial management.

3.3 Types and Sources of Data

The main sources of data for the purpose of this study are the published financial statements of BPC and CHPCL. The study is thus mainly based on the secondary data It constitutes mostly the annual reports, which comprises balance sheet and profit and loss account statement. In addition to that, a number of relevant websites were visited to ensure the availability of information across borders regarding the operation of Hydropower Companies.

3.4 Population and Sample

The study as directed towards evaluation of financial performance of Hydropower Companies has a population of 12 Companies currently in operation. However, only three of them are listed in the Nepal stock exchange (NEPSE): BPC, CHPC and NHPC. The sample of two Companies is taken in accordance to their price Potency in the NEPSE.

This analytical study of performance evaluation is based on the financial statements of CHPCL, from its first fiscal year 2012/013 to the recent fiscal year 2016/17, and BPC, from fiscal year 2012/013 to 2016/017. Thus the period covered in the study is 4 years of CHPCL and 7 years of BPC.

3.5 Data Analysis Tools
3.5.1 Financial Tools

Financial tools are those, which are used for the analysis and interpretation of financial data. They attempt to explore the financial state of a business and convey the strengths and weaknesses of its financial Policies and strategies. Ratio analysis is used as the basic tool for this study in order to summarize the quantities of financial data and to make quantitative judgments about the companies' financial Performance. The importance of ratio analysis lies in the limit that it presents 1mcts on a comparative basis and enables the drawing of inferences regarding the Performance of a company M.Y. Khan (1990).

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

I. Liquidity Ratios

Liquidity Ratios are used to judge the companies' ability to meet the short-term obligations. Short-term liquidity ratio involves the relationship between current assets and current liabilities. Two ratios are mainly used to measure the liquidity Position Bigram & Weston (1979).

(a) Current Ratio (CR)

Current Ratio measures the liquidity position or the company. The standard current ratio should be 2.1 and it is also defined by the nature of the company. The current ratio is a measure of liquidity calculated by dividing the company's current assets by current assets.

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

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

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

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

If Current Ratio > 2.1(The company may have an excessive investment in current Assets)

II. Activity/ Efficiency/ Assets Management Ratios

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

a) Fixed Asset Turnover Ratio (FATOR)

Fixed Assets Turnover Ratio measures the efficiency with which the company is utilizing its investment in its various net fixed assets. The ratio expresses that a rupee of investment in a fixed

asset generates the resulted sale. Generally, high fixed assets turnover ratio indicates efficient utilization of fixed assets while inefficiency in utilization is shown by low fixed turnover ratio.

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

Net fixed assets are defined as the gross fixed assets minus depreciation. This study accumulates fixed assets, capital working-progress and investment in new project to produce the net fixed assets.

b) Total Assets Turnover Ratio (TATOR).

Total Assets Turnover Ratio shows the relationship between sales and total assets. It indicates the sales generated per rupee of investment in the total assets. Generally, higher turnover ratios show efficiency in utilization of company's scarce resources and vice versa.

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

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

c) Debtors Turnover Ratio (DTR).

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

$$\text{Debtors Turnover Ratio} = \frac{\text{Sales}}{\text{ClosingDebtors}}$$

III. Profitability Ratio

Profitability Ratios are a group of ratios showing the combined effects of liquidity, asset management, and debt management on operating results. They are the measures of a company's earning capacity and operation efficiency. Profitability ratios of the company can be calculated in relation to sales and in relation to investment his true that higher the profitability ratios better the financial position and vice versa (Brigham, 1979).

22

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

a) Net Profit Ratio (NPR).

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

$$\text{Net Profit Ratio} = \frac{NetProfitAfterTax}{Sales}$$

b) Operating Expenses Ratio (OER)

The Operating Expenses Ratio is the yardstick or operating efficiency. It indicates the average aggregate variety in expenses, where some of the expenses may be increasing while some may be falling. This ratio throws light on managerial policies and programs. In general, higher operating ratio is inefficient due to higher operation cost in terms of sales. Lower operating ratio is favorable, as it 'will generate higher operating income, which will be sufficient to meet interest, dividend and other expenses or the company.

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

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

c) Return on Shareholders' Equity (ROE)

Return on Shareholders' Equity is t most commonly used ratio s measuring the return on owners' investment. It is the proportion of net income after t to shareholders equity. Higher ROE is favorable as it indicates higher return for shareholder at each rupee of investment.

$$\text{Return on Shareholders' Equity} = \frac{\text{Net profit After Tax}}{\text{Shareholders Equty}}$$

d) Return on Total Asset (ROTA).

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

$$\text{Return on Total Assets} = \frac{\text{Net profit After Tax} + \text{Interest}}{\text{Total Assets}}$$

IV. Invisibility Ratio

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

a) Earnings per Share (EPs).

This ratio is calculated dividing net profit after taxes (EAI) by number of equity shares outstanding. The profitability of a company from the point of view of ordinary shareholders is the earning per share (EPS). EPS calculations made over years indicate whether or not the companies' earning power on per share has changed over that period. EPS shows the amount of earning attributes to

each equity share. If earning per share is high, market price of the share may be increased in the market and vice versa. High ratio shows the sound profitability position of the companies.

$$\text{Earnings per Share} = \frac{\text{Net profit After Tax}}{\text{Number Of Share Outstanding}}$$

3.5.2   Statistical Tools

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

I. Arithmetic Mean

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

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

II. Coefficient of Variation (CV)

Coefficient of variation is the Percentage variance in the mean, standard deviation being considered as the total variation in the mean. It is one of the relative measures of division that is useful in comparing the amount or variation in data group with different mean. Coefficient of variation, denoted by CV is given by:

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

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

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

III. Co-efficient of Correlation (r)

It is n statistical tool for measuring the intensity of the magnitude or linear relationship between two series Karl Pearson's Correlation between two variables / series X and Yis usually denoted by rand can be obtained by:

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

Where, N = Number of observation

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

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

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

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

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

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

IV. Probable Error of Correlation Coefficient (PE)

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

$$PE = 0.6745 \times \frac{1-r^2}{\sqrt{N}} \qquad \text{Where, } \frac{1-r^2}{\sqrt{N}} = \text{Standard Error}$$

Reason for taking 06745 is that in a normal distribution, 50% of observations he in the range p =
± 0.6745

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

V. Least Square Linear Trend

Trend Analysis is a y useful and conno1ly applied tool to forecast the future event us quantitative term, on the basis of the tendencies in the dependent variable in the Past period. The straight line trend implies that inspective or the seasonal and cyclical as well as irregular fluctuation, the trend value increase by absolute amount per unit of time. The linear trend values from a series ns arithmetic progression.

Mathematically $Y = a + bX$

Where, Y = Value of the dependent value, A = Y– intercept, B= Slope of trend line

X= Value of the independent value

Normal equations fitting above equation are:

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

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

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

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF DATA

In this chapter, the data have been analyzed and interpreted using financial and statistical tools following the research methodology dealt in the third chapter. This chapter is divided into three sub heads as presentation of data from secondary sources, presentation of the data from primary sources and major findings of the study.

4.1 Presentation of Data from Secondary Sources

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

4.1.1 Liquidity Ratio

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

a) Current Ratio (CR)

Current Ratio measures the liquidity position of the company. The standard current ratio should be 2:1 and it is also defined by the nature of the company. The current ratio of different sampled years has been presented in the table 4.1 below.

Table 4-1

Calculation of Current Ratio (In Thousand NRS.)

Fiscal Year	Current Assets		Current Liabilities		Ratio (Times)	
	BPC	CHPCL	BPC	CHPCL	BPC	CHPCL
2012/013	567488	3612345	678347	107412	0.837	33.63
2013/014	598069	5064242	493088	113793	1.213	44.50
2014/015	511823	4859677	325018	271191	1.575	17.92
2015/016	515191	5109604	356603	368314	1.445	13.87
2016/017	415410	4773539	283368	482719	1.466	9.89
Mean ($\bar{x}$)					1.307	23.96
Standard Deviation(σ)					0.294	13.1
Coefficient of Variation (C.V) %					22.51	54.47

Source: Annual Report of BPC & CHPCL
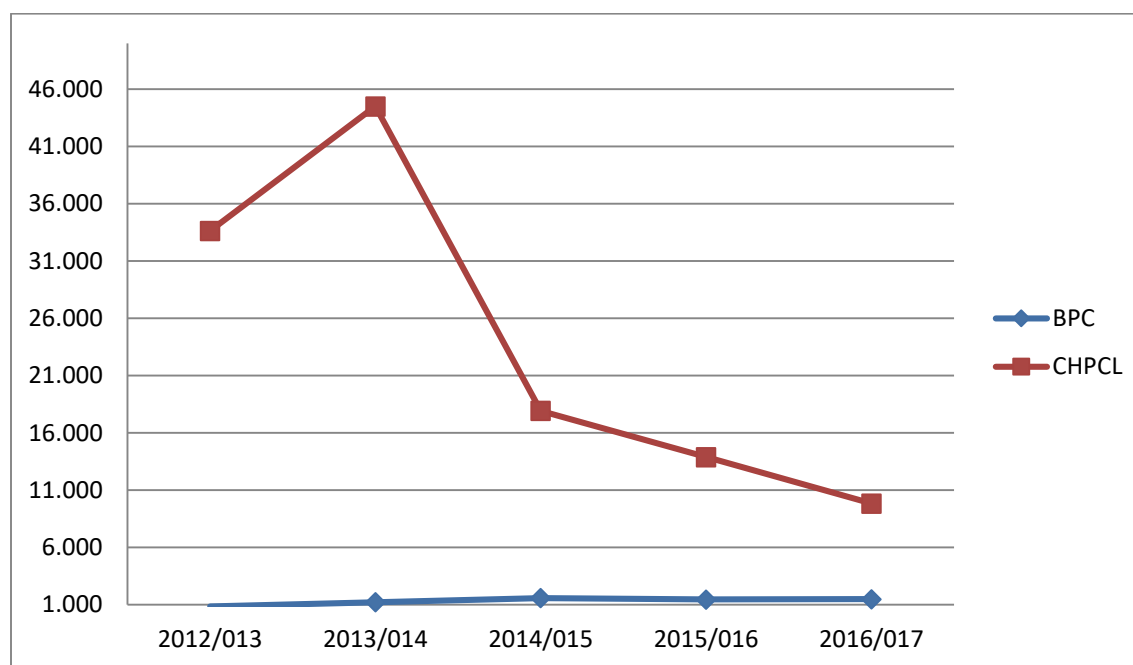
Figure 4-1

Graphical presentation of Current Ratio

Looking over the trend of current ratio of BPC over 5years, it can be observed that the mean of the current ratio of BPC is 1.307, clearly shows it's incapability to meet its current obligations. Likewise CHPCL has a mean current ratio is 23.96. This shows more value of current assets then the standard. It is not a good fund management of the CHPCL.BPC has lower value of S.D, i.e. 0.294, which shows more consistency; likewise CHPCL has higher value of S.D. i.e. 13.1, shows more fluctuation.

4.1.2 Activity / Efficiency / Assets Management Ratios

Activity ratios also called Efficiency or Assets Management Ratios indicate the speed with which assets are being converted or turned over into sales. A proper balance between sales and assets generally reflects that assets are managed well. Fixed Assets Turnover Ratio (FATOR) measures the efficiency with which the company is utilizing its investment in its various net fixed assets. Generally, high fixed assets turnover ratio indicates efficient utilization of fixed assets while inefficiency in utilization is shown by low fixed turnover ratio.

Table 4-2

Calculation of Fixed Assets Turnover Ratio (In Thousand NRS.)

Fiscal Year	Sales		Fixed Assets		Ratio (Times)	
	BPC	CHPCL	BPC	CHPCL	BPC	CHPCL
2012/013	512106	968553	3738908	2465404	0.14	0.3929
2013/014	404107	985003	4260974	4386785	0.09	0.2245
2014/015	523192	1046082	4634395	6608797	0.11	0.1583
2015/016	595580	1163138	4699565	8019164	0.13	0.1450
2016/017	662872	1196889	4953923	12300974	0.13	0.0973
Mean ($\bar{x}$)					0.12	0.204
Standard Deviation(σ)					0.017	0.103
Coefficient of Variation (C.V) %					14.32	50.58

Source: Annual Report of BPC & CHPCL
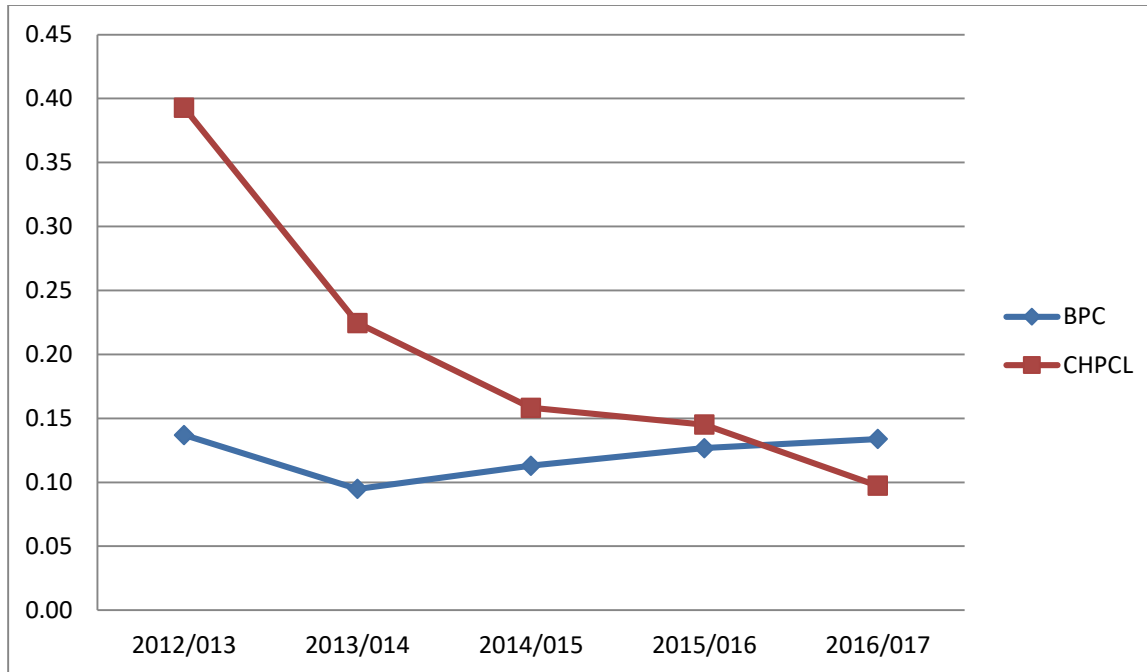
Figure 4-2

Graphical Presentation of Fixed Assets Turnover Ratio

Looking over the fixed assets turnover ratio of BPC over 5years, it can be observed that the mean of the fixed assets turnover ratio of BPC is 0.12, which is less than the mean of the fixed assets turnover ratio of CHPCL i.e. 0.204. BPC has lower value of S.D, i.e. 0.017, which shows more consistency; likewise CHPCL has higher value of S.D i.e. 0.103, shows more fluctuation.

Total Assets Turnover Ratio (TATOR)

It indicates the firm`s ability to generate sales due to the investment in total assets. Total assets are used in the business for producing goods to be sold. The effective utilization of total asset will result in increased production and reduced cost. Higher ratio indicates more efficient the management and utilization of total asset and vice-versa.

Table 4-3

Calculation of Total Assets Turnover Ratio (In Thousand NRS.)

Fiscal Year	Sales		Total Assets		Ratio (Times)	
	BPC	CHPCL	BPC	CHPCL	BPC	CHPCL
2012/013	512106	968553	4306396	6077749	0.119	0.159
2013/014	404107	985003	4859043	9451028	0.083	0.104
2014/015	523192	1046082	5146218	11468475	0.102	0.091
2015/016	595580	1163138	5214756	13128769	0.114	0.089
2016/017	662872	1196889	5369333	17044513	0.123	0.070
Mean ($\bar{x}$)					0.108	0.103
Standard Deviation(σ)					0.016	0.034
Coefficient of Variation (C.V) %					14.98	33.01

Source: Annual Report of BPC & CHPCL
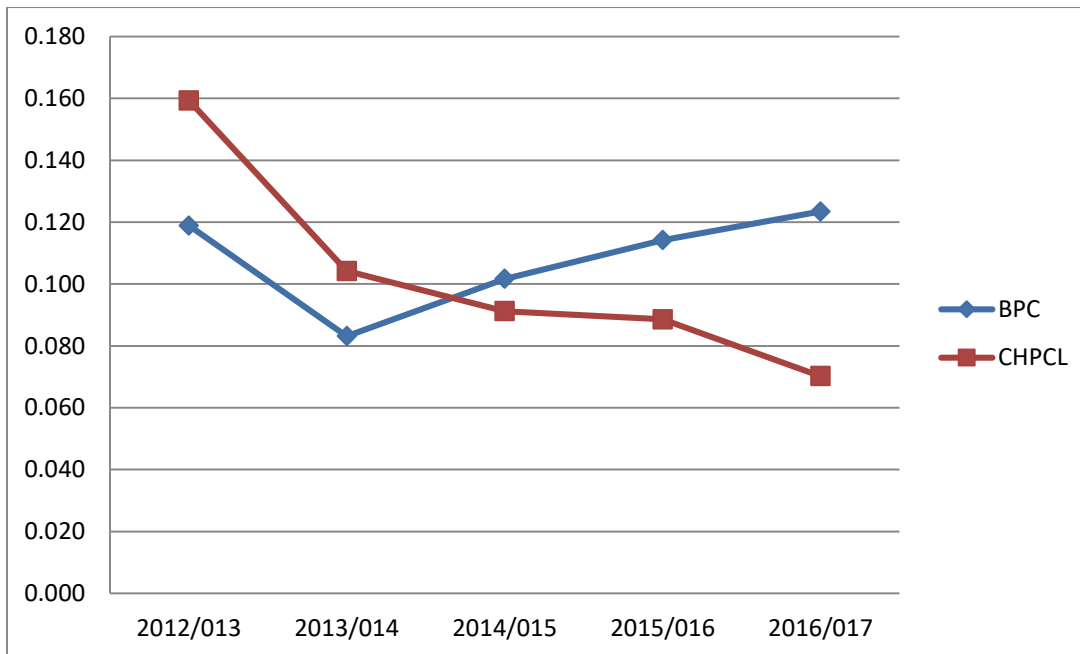
Figure 4-3

Graphical Presentation of Total Assets Turnover Ratios

Looking over the Total assets turnover ratio of BPC over 5years, it can be observed that the mean of the fixed assets turnover ratio of BPC is 0.108, which is more than the mean of the total assets turnover ratio of CHPCL i.e. 0.103. BPC has lower value of S.D, i.e. 0.016, which shows more consistency; likewise CHPCL has higher value of S.D i.e. 0.034, shows more fluctuation.

Inventory Turnover Ratio (ITR)

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

Table 4-4

Calculation of Inventory Turnover Ratio (In Thousand NRS.)

Fiscal Year	Sales		Inventory		Ratio (Times)	
	BPC	CHPCL	BPC	CHPCL	BPC	CHPCL
2012/013	512106	968553	35956	45926	14.24	21.089
2013/014	404107	985003	56912	47273	7.10	20.836
2014/015	523192	1046082	40995	58777	12.76	17.797
2015/016	595580	1163138	52071	182322	11.44	6.380
2016/017	662872	1196889	60111	178489	11.03	6.706
Mean ($\bar{x}$)					11.31	14.56
Standard Deviation(σ)					2.670	7.435
Coefficient of Variation (C.V) %					23.60	51.06

Source: Annual Report of BPC & CHPCL
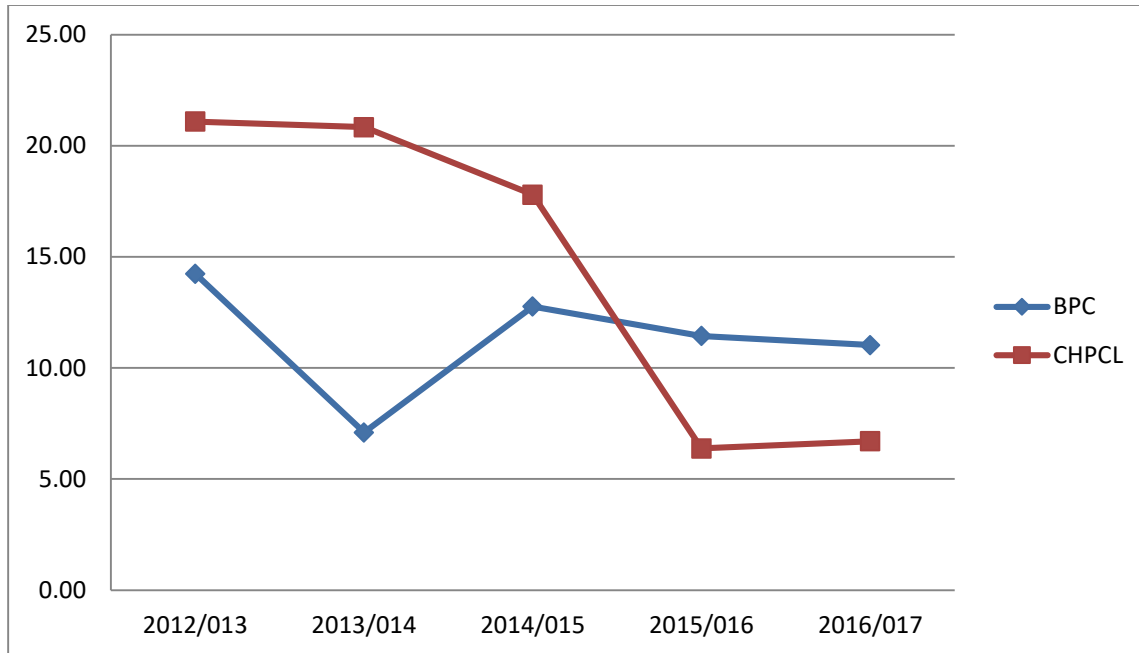
Figure 4-4

Graphical Presentation of Inventory Turnover Ratios

Looking over the Inventory turnover ratio of BPC over 5 years, it can be observed that the mean of the Inventory turnover ratio of BPC is 11.31, which is lower than the mean inventory turnover ratio of CHPCL i.e. 14.56. BPC has lower value of S.D, i.e. 2.670, which shows more consistency; likewise CHPCL has higher value of S.D i.e. 7.435, shows more fluctuation.

Debtors Turnover Ratio (DTR)

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

Table 4-5

Calculation of Debtors Turnover Ratio (In Thousand NRS.)

Fiscal Year	Sales		Debtor		Ratio (Times)	
	BPC	CHPCL	BPC	CHPCL	BPC	CHPCL
2012/013	512106	968553	276275	239722	1.85	4.040
2013/014	404107	985003	335948	111615	1.20	8.825
2014/015	523192	1046082	90790	140174	5.76	7.463
2015/016	595580	1163138	87468	138622	6.81	8.391
2016/017	662872	1196889	83406	122069	7.95	9.805
Mean ($\bar{x}$)					4.72	7.705
Standard Deviation(σ)					3.019	2.215
Coefficient of Variation (C.V) %					64.03	28.75

Source: Annual Report of BPC & CHPCL

Figure 4-5

Graphical Presentation of Debtors Turnover Ratios

35

Looking over the debtor turnover ratio of BPC over 5 years, it can be observed that the mean of the debtor turnover ratio of BPC is 4.72, which is lower than the mean debtor turnover ratio of CHPCL i.e. 7.705. BPC has higher value of S.D, i.e. 3.019, which shows more consistency likewise CHPCL has lower value of S.D i.e. 7.435, shows more fluctuation.
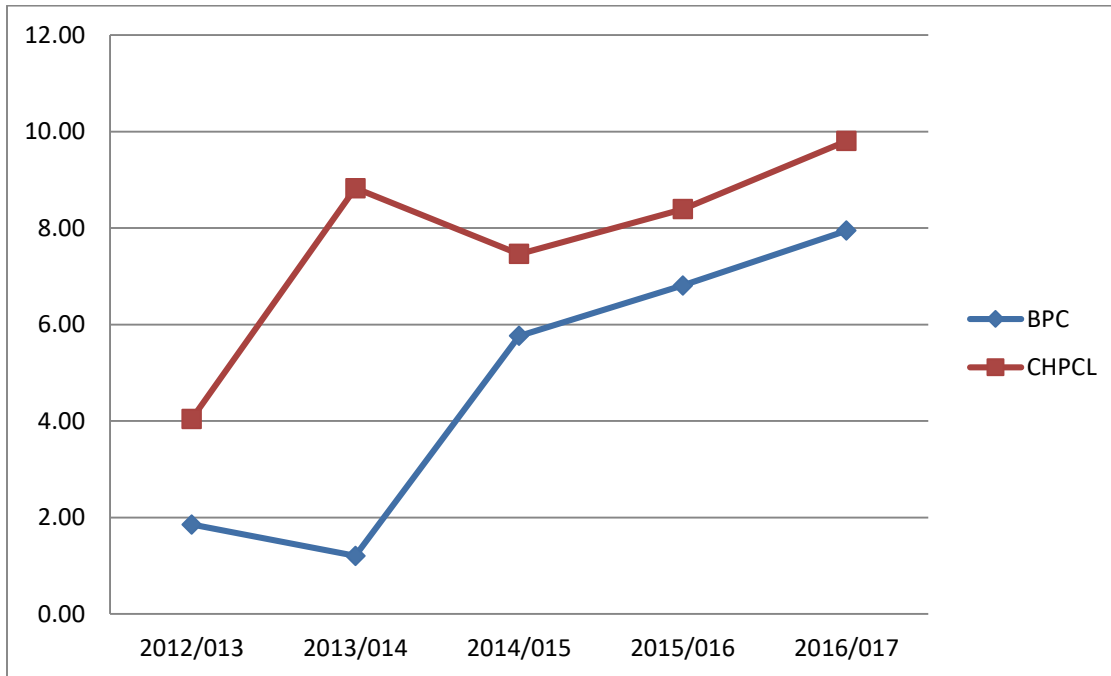
4.1.3 Profitability Ratio

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

Net Profit Ratio (NPR)

The Net Profit Margin establishes the relationship between net profit and sales. The ratio measures the companies' ability to change each rupee sales into net profit. The ratio of net profit to sales shows the profitability of corporations indicating that the only increase in sales does not mean anything unless it commands profit. From this ratio it can also be acquired the information of the total expenses incurred during a certain period of time.

Table 4-6

Calculation of Net Profit Ratio (In Thousand NRS.)

Fiscal Year	Net Profit After Tax		Sales		Ratio (%)	
	BPC	CHPCL	BPC	CHPCL	BPC	CHPCL
2012/013	243884	965045	512106	968553	47.62	99.64
2013/014	285569	939675	404107	985003	70.67	95.40
2014/015	495724	883093	523192	1046082	94.75	84.42
2015/016	628496	942466	595580	1163138	105.53	81.03
2016/017	686053	928560	662872	1196889	103.50	77.58
Mean ($\bar{x}$)					84.4	87.61
Standard Deviation(σ)					24.8	9.5
Coefficient of Variation (C.V) %					29.4	10.80

Source: Annual Report of BPC & CHPCL
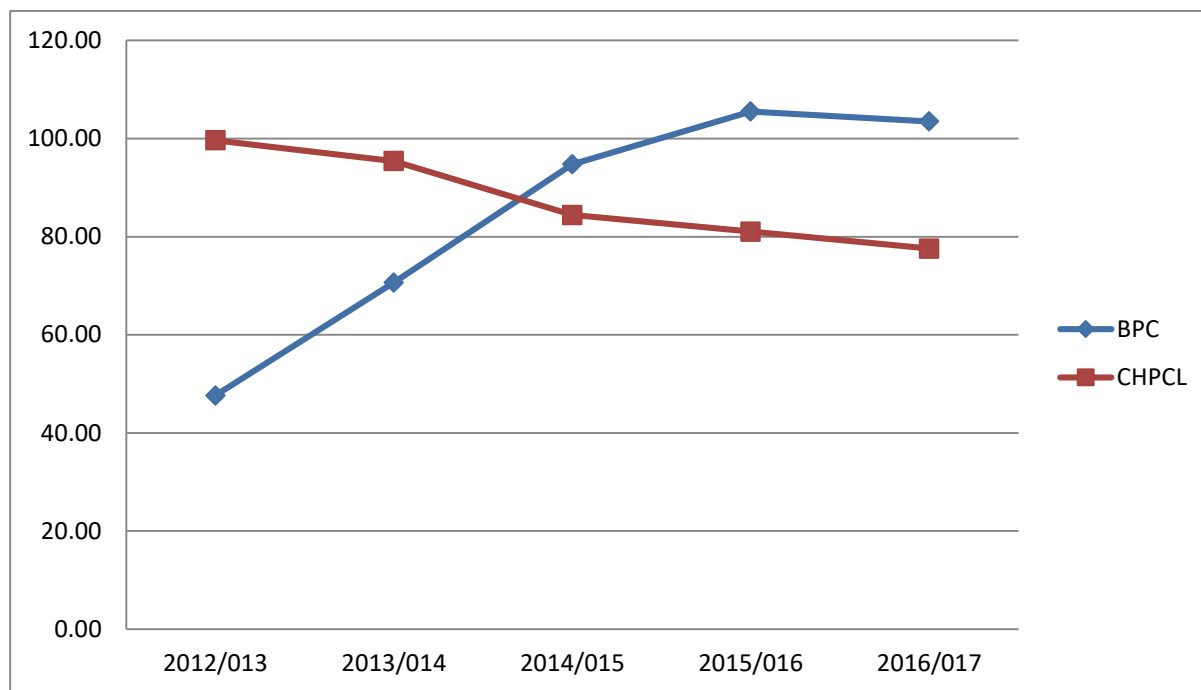
Figure 4-6

Graphical Presentation of Net Profit Ratios

Above table reveals an admirable trend of NPR of both Hydropower Companies, BPC being the favorite with an overall mean ratio of 84.4%. In contrast, CHPCL has maintained a flourishing trend of NPR since the start of its financial operation with an overall mean ratio of 87.61%. BPC has not a better mean ratio than CHPCL, but CHPCL also has comparatively less fluctuations in its NPR ratios than BPC. The CV with respect to NPR of BPC and CHPCL are 29.4% and 10.80% respectively.

Operating Expenses Ratio (OER)

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

Table 4-7

Calculation of Operating Expenses Ratio (In Thousand NRS.)

Fiscal Year	Operating Expense		Sales		Ratio (%)	
	BPC	CHPCL	BPC	CHPCL	BPC	CHPCL
2012/013	543762	262689	512106	968553	106.2	27.12
2013/014	574088	271427	404107	985003	142.1	27.56
2014/015	550023	246501	523192	1046082	105.1	23.56
2015/016	539216	258543	595580	1163138	90.5	22.23
2016/017	574502	281511	662872	1196889	86.7	23.52
Mean (x̄)					106.12	24.80
Standard Deviation(σ)					21.88	2.39
Coefficient of Variation (C.V) %					20.61	9.62

Source: Annual Report of BPC & CHPCL
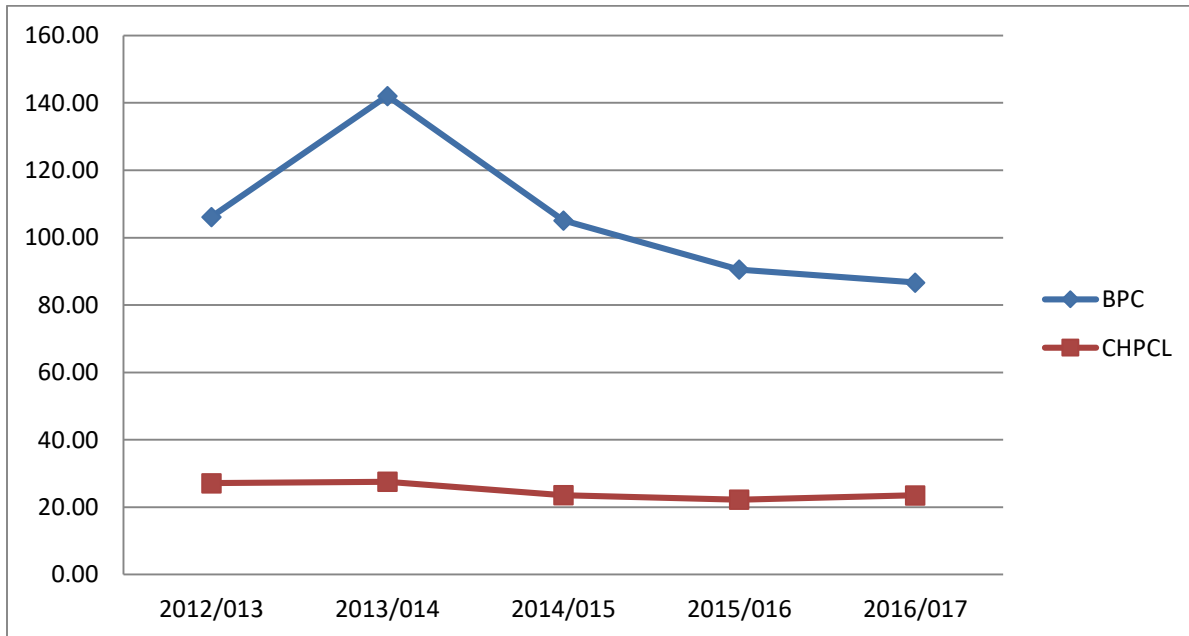
Figure 4-7

Graphical Presentation of Operating Expenses Ratio

Above table reveals a fluctuating trend of OER of BPC and increasing trend of OER of CHPCL has maintained an admirably low trend of OER with a mean ratio of 24.80% it has more volatility in operating expenditure revealed by a CV of BPC 20.61% has considerably high operating cost with compared to CHPCL.

Return on Shareholders' Equity (ROE)

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

Table 4-8

Calculation of Return on Shareholders' Equity (In Thousand NRS.)

Fiscal Year	Net Profit After Tax		Shareholders' Equity		Ratio (%)	
	BPC	CHPCL	BPC	CHPCL	BPC	CHPCL
2012/013	243884	965045	2516291	5970337	9.69	16.16
2013/014	285569	939675	3259498	7083201	8.76	13.27
2014/015	495724	883093	3774028	7627195	13.14	11.58
2015/016	628496	942466	3977850	7730464	15.80	12.19
2016/017	686053	928560	4392459	8348674	15.62	11.12
Mean (x̄)					12.60	12.86
Standard Deviation(σ)					3.67	2.01
Coefficient of Variation (C.V) %					25.97	15.64

Source: Annual Report of BPC & CHPCL

Figure 4-8

 Graphical Presentation of Return on Shareholders Ratios

Above table reveals a fluctuating trend of ROE of BPC with a mean ratio of 12.60%. In contrast, CHPCL has maintained considerably higher and stable trend of ROE with an overall mean ratio of 12.86% and CV of 15.64%. BPC, with a lower mean ratio of ROE and higher CV of ratios proves to be less attractive than CHPCL to shareholders.

Return on Total Asset (ROTA)

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

Table 4-9

Calculation of Return on Total Assets (In Thousand NRS.)

Fiscal Year	Net Profit + Interest		Total Assets		Ratio	
	BPC	CHPCL	BPC	CHPCL	BPC	CHPCL
2012/013	243884	965045	4306396	6077749	5.66	15.88
2013/014	285569	939675	4859043	9451028	5.88	9.94
2014/015	495724	883093	5146218	11468475	9.63	7.70
2015/016	628496	942466	5214756	13128769	12.05	7.18
2016/017	686053	928560	5369333	17044513	12.78	5.45
Mean ($\bar{x}$)					9.20	9.23
Standard Deviation(σ)					3.34	4.05
Coefficient of Variation (C.V) %					36.2	43.86

Source: Annual Report of BPC & CHPCL
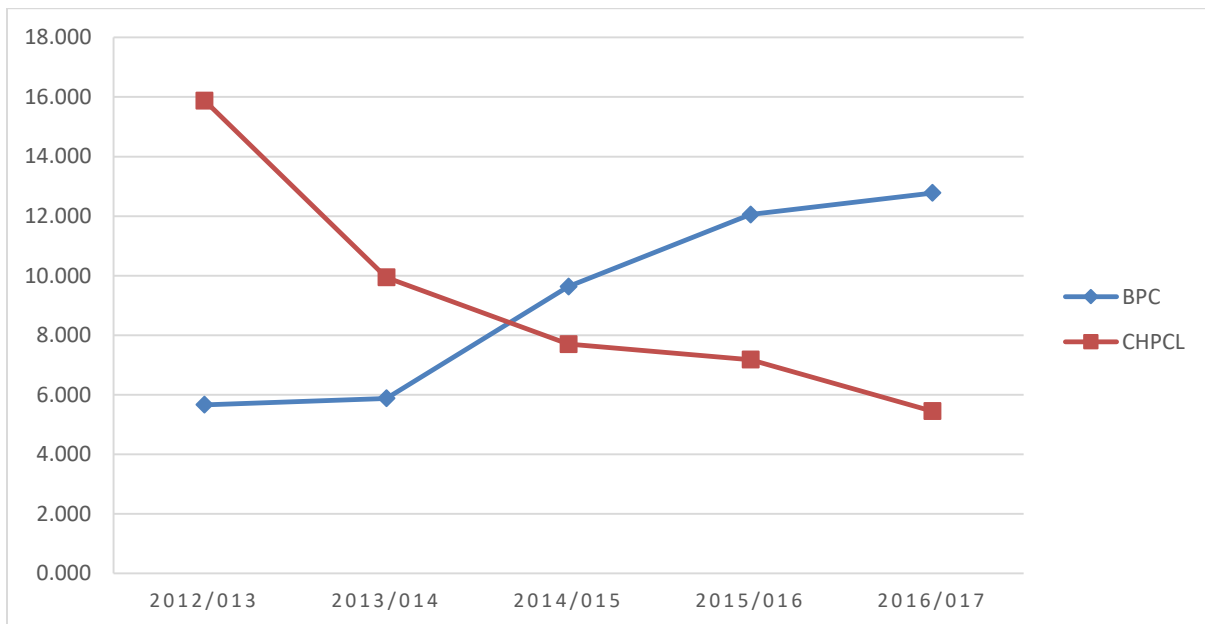
Figure 4-9

Graphical Presentation of Return on Total Assets Ratios

41

4.1.4 Invisibility Ratio

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

Earnings per Share (EPS)

EPS calculations made over years indicate whether or not the companies' earning power on per share has changed over that period. EPS shows the amount of earning attributes to each equity share. If earning per share is high, market price of the share may be increased in the market and vice versa. High ratio shows the sound profitability position of the companies

Table 4-10

Calculation of Earnings per Share (In Thousand NRS.)

Fiscal Year	Earnings After Tax		No. of Equity		RS.	
	BPC	CHPCL	BPC	CHPCL	BPC	CHPCL
2012/013	243884	965045	2516291	5970337	9.69	16.16
2013/014	285569	939675	3259498	7083201	8.76	13.27
2014/015	495724	883093	3774028	7627195	13.14	11.58
2015/016	628496	942466	3977850	7730464	15.80	12.19
2016/017	686053	928560	4392459	8348674	15.62	11.12
Mean (x)					12.60	12.86
Standard Deviation(σ)					3.27	2.01
Coefficient of Variation (C.V) %					25.97	15.64

Source: Annual Report of BPC & CHPCL

Figure 4-10

Graphical Presentation of Earnings per Share

We can find huge differences between the fluctuating trends of EPS of BPC and CHPCL. While BPC is yielding a satisfactory mean EPS of Rs. 31.66 CHPCL is yielding an excellent mean EPS of Rs. 77.62. On the other hand, CHPCL not only has a twice times greater EPS than that of BPC but also has less variability in ratios. The CV with respect to EPS of BPC and CHPCL are Rs. 22.26% and 20.17% respectively.

4.1.5   Correlation Analysis

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

a) Correlation between Total Sales and Net Profit after Tax

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

Table 4-11

Calculation of Correlation between Total Sales and Net Profit after Tax of BPC and CHPCL (In Thousand NRS.)

Company	r	PE	6 x PE	Remarks
BPC	0.86	0.0785	0.471	r> 6PE
CHPCL	0.998	0.0012	0.0072	r> 6PE

Source: Appendix A

The coefficient of correlation between Sales (X) and Net Profit after Tax *(Y)* of BPC and CHPCL came to be 0.86 and 0.998 respectively. This suggests that the two variables have strong positive relation to each other and, CHPCL is slightly more successful than BPC to be able to yield more uniform profits out of its sales. Coefficient of correlation in BPC appeared greater than six times of PE, which implies lies that the relation between sales and net profit after tax was positive at significant level. Similarly, coefficient of correlation in CHPCL also appeared greater than six times of PE, This implies that the relation between sales and net profit after tax is positive at significant level.

b) Correlation between Total Sales and Total Assets

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

Table 4-12

Calculation of Correlation between Total Sales and Total Assets of BPC and CHPCL (In Thousand NRS.)

Company	r	PE	6 x PE	Remarks
BPC	0.9967	0.00198	0.01188	r> 6PE
CHPCL	0.989	0.0659	0.3954	r> 6PE

Source: Appendix A

The coefficient of correlation between Sales *(X)* and Total Assets *(Y)* of BPC and CHPCL came to be 0.996 and 0.989 respectively. This suggests that the two variables have positive relation to each other and, increase in total assets have more favorable effect on sales of BPC than on sales of CHPCL.

Coefficient of correlation in BPC appeared greater than six times of PE, which implies lies that the relation between sales and net profit after tax was positive at significant level. Similarly, coefficient of correlation in CHPCL also appeared greater than six times of PE, This implies that the relation between sales and net profit after tax is positive at significant level.

c) Correlation between Total Assets and Net Profit after Tax

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

Table 4-13

Calculation of correlation between T. A. and N. P. After Tax (In Thousand NRS.)

Company	r	PE	6PE	Remarks
BPC	0.867	0.0749	0.4494	r>6 PE
CHPCL	0.9798	0.0121	0.0726	r>6 PE

Source: Appendix A

The coefficient of correlation between Total Assets *(X)* and Net Profit after Tax *(Y)* of BPC and CHPCL came to be 0.867 and 0.9798 respectively. This suggests that the two variables have positive relation to each other and, it is likely that increase in total assets is associated to increase in net profit after tax of BPC more than in net profit after tax of CHPCL.

However, Coefficient of correlation in BPC appeared greater than six times of PE, which implies lies that the relation between sales and net profit after tax was positive at significant level. Similarly, coefficient of correlation in CHPCL also appeared greater than six times of PE, This implies that the relation between sales and net profit after tax is positive at significant level.

4.1.6 Least Square Linear Growth Trend Analysis

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

a) Least Square Trend Analysis of Total Sales Growth

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

Table 4-14

LST Analysis of Total Sales Growth of BPC and CHPCL in Thousand NRS.)

Fiscal Year	Actual Sales(Y)		Trend Value (Y_c)	
	BPC	CHPCL	BPC	CHPCL
2012/013	512106	968553	440970.4	944971.6
2013/014	404107	985003	490270.9	1008452.3
2014/015	523192	1046082	539571.4	1071933
2015/016	595580	1163138	588871.9	1135413.7
2016/017	662872	1196889	638172.4	1198894.4
2017/018			687472.9	1262375.1
2018/019			736773.4	1325855.8
2019/020			786073.9	1389336.5
2020/021			835374.4	1452817.2
2021/022			884674.9	1516297.9

Source: Appendix B
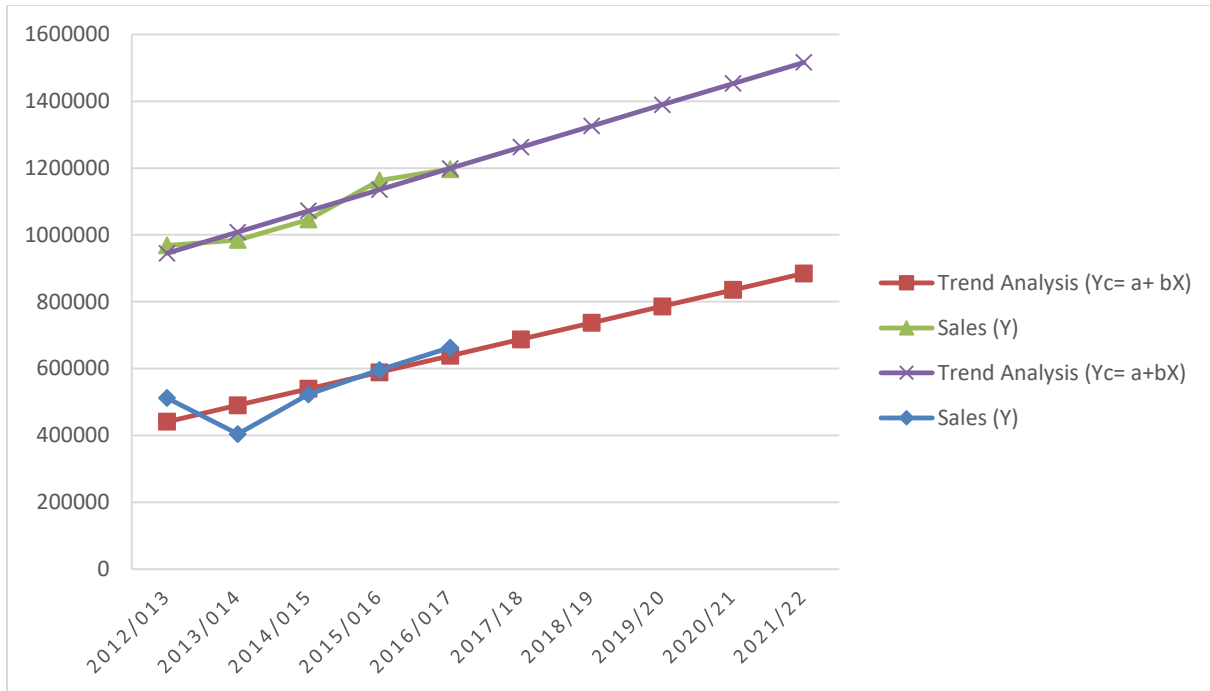
Figure 4-11

 LST Analysis of Total Sales Growth of BPC and CHPCL

The Y-intercept (a) and slope of the trend line *(b)* of total sales of BPC remained to be Rs. 5,39,571.4 and Rs. 49,300.5 respectively. During the study period, total sales of BPC exposed an increasing trend. The trend equation of total sales is given by:

$Y_c = 539571.4 + 49300.5X$

According to the above trend equation, the forecasted values of total sales of BPC for coming five years would be Rs.512106, Rs.404107, Rs.523192, Rs.595580 and Rs.662872 thousand respectively. Similarly, the Y-intercept (a) and slope of the trend line *(b)* of total sales of CHPCL remained to be Rs.10, 71,933 and Rs.63480.7 respectively. During the study period, total sales of CHPCL exposed an increasing trend. The trend equation of total sales is given by:

Y_c= 1071933 + 63480.7X

According to the above trend equation, the forecasted values of total sales of CHPCL for coming three years would be Rs.968,553,Rs.985003,Rs.1046082, Rs.1163138 and Rs.1196889 thousand respectively.

b) Least Square Trend Analysis of Net Profit after Tax Growth

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

Table 4-15

LST Analysis of Net Profit after Tax of BPC and CHPCL (In Thousand NRS.)

Year	Net Profit After Tax(Y)		Trend Value (Y_c)	
	BPC	CHPCL	BPC	CHPCL
2012/013	243884	965045	222492.2	945803.6
2013/014	285569	939675	345218.7	938785.7
2014/015	495724	883093	467945.2	931767.8
2015/016	628496	942466	590671.7	924749.9
2016/017	686053	928560	713398.2	917732
2017/018			836124.7	910714.1
2018/019			958851.2	903696.2
2019/020			1081577.7	896678.3
2020/021			1204304.2	889660.4
2021/022			1327030.7	882642.5

Source: Appendix B
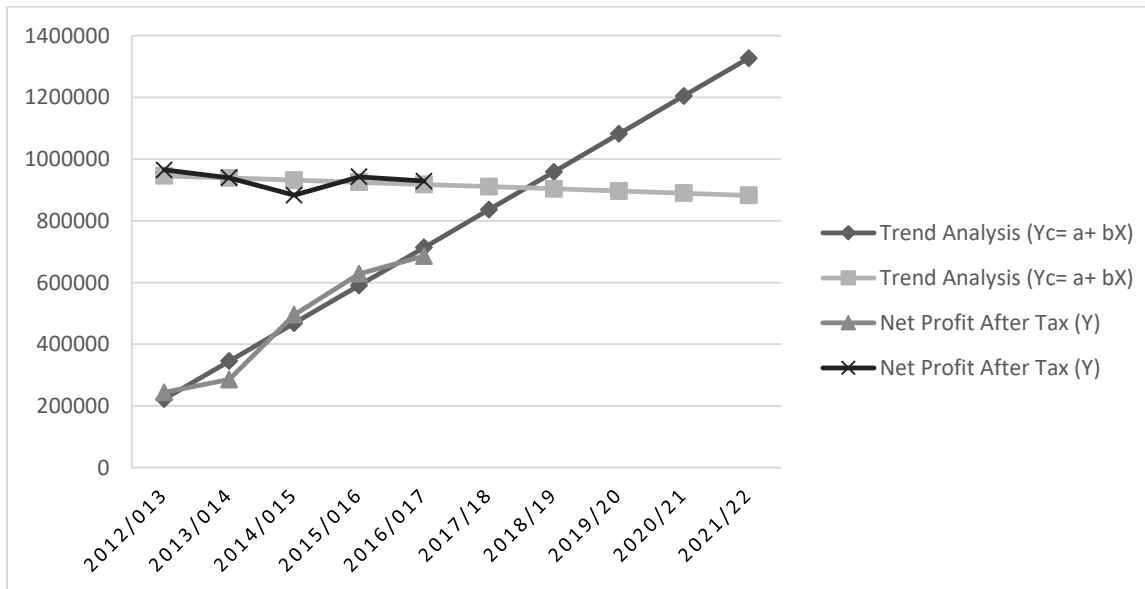
Figure 4-12

LST Analysis of Net Profit after Tax of BPC and CHPCL

The Y-intercept (a) and slope of the trend line *(b)* of net profit after tax of BPC remained to be NRs.4, 67,945.2 and NRs.1, 22,726.5 respectively. During the study period, total sales of BPC exposed an increasing trend. The trend equation of total sales is given by:

$Y_c = 4, 67,945.2 + 1, 22,726.5X$

According to the above trend equation, the forecasted values of net profit after tax of BPC for coming five years would be NRs.243884,285569,495724,528496 and 686053 thousand respectively.

Similarly, the Y-intercept (a) and slope of the trend line *(b)* of net profit after tax of CHPCL remained to be NRs.931767.8 and NRs.7017.9 respectively. During the study period, net profit after tax of CHPCL exposed a decreasing trend. The trend equation of total sales is given by:

$Y_c = 502,773.4 + 109,313.4X$

According to the above trend equation, the forecasted values of net profit after tax of CHPCL for corning five years would be NRs.9,65,045,9,39,675,8,83,093,9,42,466 and 928560 thousand respectively.

4.2 Major Findings

- The current ratios of BPC remained respectively 0.837, 1.213, 1.575, 1.445 and 1.466 throughout the study period. The mean and CV of current ratios of BPC came to be 1.307and 22.51%.Similarly, the current ratios of CHPCL remained 33.63,44.50,17.92,13.87 and 9.83 respectively throughout the study period. The mean and CV of current ratios of CHPCL came to be 23.96 and 53.47%.

- The FATORs of BPC remained 0.14, 0.09, 0.11, 0.13 and 0.13 respectively throughout the study period. The mean and CV of FATORs of BPC came to be 0.12 and 14.32%.Similarly, the FATORs of CHPCL remained 0.393,0.225,0.158,0.145 and 0.097 respectively throughout the study period. The mean and CV of FATORs of CHPCL came to be 0.204 and 50.58%.

- The TATORs of BPC remained 0.119, 0.083, 0.102, 0.114 and 0.123 respectively throughout the study period. The mean and CV of TATORs of BPC came to be 0.108 and 14.98%.Similarly, the TATORs of CHPCL remained 0.159,0.104,0.091,0.089 and 0.070

respectively throughout the study period. The mean and CV of TATORs of CHPCL came to be 0.103 and 33.01%.

- The ITRs of BPC remained 14.24, 7.10, 12.76, 11.44 and 11.03 respectively throughout the study period. The mean and CV of 1TRs of BPC came to be 11.31 and 23.60%. Similarly, the ITRs of CHPCL remained 21.089, 20.836, 17.797, 6.380 and 6.706 respectively throughout the study period. The mean and CV of ITRs of CHPCL came to be 14.56 and 51.06%.

- The DTRs of BPC remained 1.85, 1.20, 5.76, 6.81 and 7.95 respectively throughout the study period. The mean and CV of DTRs of BPC came to be 4.72 and 64.03%. Similarly, the DTRs of CHPCL remained 4.040, 8.825, 7.463, 8.391 and 9.805 respectively throughout the study period. The mean and CV of DTRs of CHPCL came to be 7.705 and 28.75%.

- The NPRs of BPC remained 47.62%, 70.67%, 94.75%, 105.53% and 103.50% respectively throughout the study period. The mean and CV of NPRs of BPC came to be 84.41% and 29.37%. Similarly, the NPRs of CHPCL remained 99.64%, 95.40%, 84.42%, 81.03% and 77.58 % respectively throughout the study period. The mean and CV of NPRs of CHPCL came to be 87.61% and 10.82%.

- The OERs of BPC remained 106.18%., 142.06%., 105.13%., 90.54%. And 86.67% respectively throughout the study period. The mean and CV of OERs of BPC came to be 106.12% and 20.61%. Similarly, the OERs of CHPCL remained 27.12%., 27.56%., 23.56%., 22.23%. And 23.52 % respectively throughout the study period. The mean and CV of OERs of CHPCL came to be 24.80% and 9.92%.

- The ROEs of BPC remained 9.69%, 8.76%, 13.14%, 15.80% and 15.62% respectively throughout the study period. The mean and CV of ROEs of BPC came to be 12.60% and 25.97%. Similarly, the ROEs of CHPCL remained 16.16%, 13.27%, 11.58%, 12.19% and 11.12% respectively throughout the study period. The mean and CV of ROEs of CHPCL came to be 12.86% and 15.64%.

- The ROTA of BPC remained 5.663, 5.877, 9.633, 12.052 and 12.777 respectively throughout the study period. The mean and CV of ROTAs of BPC came to be 9.20 and 36.32. Similarly, the ROTAs of CHPCL remained 15.878, 9.943, 7.700, 7.179 and 5.448

respectively throughout the study period. The mean and CV of ROTAs of CHPCL came to be 9.23and 43.86.

- The EPSs of BPC remained NRs. 9.69, 8.76, 13.14, 15.80 and 15.62 respectively throughout the study period. The mean and CV of EPSs of BPC came to be NRs. 12.60 and 25.97%. Similarly, the EPSs of CHPCL remained NRs. 16.16, 13.27, 11.58, 12.19 and 11.12 respectively throughout the study period. The mean and CV of EPSs of CHPCL came to be NRs. 12.86 and 15.74%.

- The coefficient of correlation between sales and net profit after tax of BPC and CHPCL came 0.86 and 0.998 respectively. This value of correlation indicates the positive relation between sales and net profit after tax. Considering the probable errors of BPC and CHPCL, since the value of r is greater than 6PE, the correlation is at significant level.

- The coefficient of correlation relation between sales and total assets of BPC and CHPCL came 0.9967 and 0.989 respectively. This value of correlation indicates the positive relation between sales and total assets. Considering the probable errors of BPC and CHPCL, since the value of r is greater than 6PE, the correlation is at significant level.

- The coefficient of correlation relation between total assets and net profit after tax of BPC and CHPCL came 0.867 and 0.9798 respectively. This value of correlation indicates the positive relation between total assets and net profit after tax. Considering the probable errors of BPC and CHPCL, since the value of r is greater than 6PE, the correlation is at significant level.

- According to the trend equation, the forecasted values of total sales of BPC for coming *five* years would be NRs.5,12,106, NRs.4,04,107, NRs.5,23,192, NRs.5,95,580 and NRs.6,62,872 thousand respectively. Similarly, the forecasted values of total sales of CFIPCL for coming five years would be NRs.9,68,553, NRs.9,85,003, NRs.10,46,082, NRs.11,63,138 and NRs.11,96,889 thousand respectively.

- According to the trend equation, the forecasted values of net profit after tax of BPC for coming five years would be NRs.2,43,884, NRs.2,85,569, NRs.4,95,724, NRs.6,28,496 and NRs.6,86,053 thousand respectively. Similarly, the forecasted values of net profit after tax of CHPCL for coming five years would be NR.s.965045, NRs.9,39,675, NRs.8,83,093, NRs.9,42,466 and NRs.9,28,560 thousand respectively.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

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

5.1   Summary

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

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

The Chilime Hydropower Company Ltd. was established with *51%* equity going to the NEA, another 25% to NEA employees and the rest to be offered to the public. The 20 MW dam in the hills north of Kathmandu is built by Nepali engineers and technicians using local design capabilities. The money also is tapped locally - through loans from Nepal's financial institutions including the state-managed Employees' Provident Fund. The company promptly won a power generation license from the government, and also signed a power purchase agreement with NEA to sell the energy generated to the national grid. The price was fixed at three rupees (less than *5* cents) per kWh of energy.

Butwal Power Company was established in 1965 when total capacity of the power in the country was only 3.45Mw. BPC with assistance from the United Mission to Nepal developed Tinau project in 1967 to light up the town of Butwal and to promote industrial development in the area. BPC not only involved in design and construction work but also owns and operates the 12 Mw Jhiniruk Hydropower Plant and the 5.1 Andhi Khola Hydro Power Plants. The company supplies power to the national electricity grid besides lighting up nearly 23,000 local households. BPC is currently the largest private power supplier in Nepal.

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

The continuing interest shown by both the domestic and foreign private investors is encouraging for Nepal`s power sector although the current interest of the private sector is limited to small plants of capacities less than 10 MW only, probably because of the much higher investment needs of larger projects. The increasing demand of electricity can however be met only through a combination of both small and medium-sized projects. It is therefore pertinent for NEA to take tip several medium sized schemes for implementation in the public sector with donor assistance. Although the demand for power is rising every year, generation projects have not been implemented in tandem. The delays experienced in Middle Marsyangdi, the only public sector project presently tender construction, is an example of the uncertainties faced even after a project enters the construction phase. Public sector generation projects take considerable preparation time before execution. The process of mobilization of resources for generation and other projects is also very time consuming and uncertain. Decisions for taking up such projects should therefore be made well in advance so that power plants come into operation in a timely fashion as per the system requirements. The identification aid implementation of projects involving relatively low investments is the key to providing affordable electricity to the people of Nepal.

The liquidity ratios of the companies seem to be not consistent throughout the study period of CHPCL and BPC. While BPC has failed to maintain conventional standard of liquidity position (2:1) throughout the study period, CHPCL has increasing in first two years and rapid decrease in last three years but still it is not in the standard. The mean and CV of current ratios of BPC came to be 1.307 and 22.51%. The mean and CV of current ratios of CHPCL came to be 23.96 and 53.47%.

Except that of ITRs all other activity ratios of BPC present volatile trends for the period of study. Whereas, CHPCL shows volatility in all activity ratios as compared to BPC. The mean and CV of FATORs of BPC came to be 0.12 and 14.32%.Similarly, the mean and CV of FATORs of CHPCL came to be 0.204 and 50.58%. The mean and CV of TATORs of BPC came to be 0.108 and 14.98%.Similarly, the mean and CV of TATORs of CHPCL came to be 0.103 and 33.01%. The mean and CV of 1TRs of BPC came to be 11.31 and 23.60%. Similarly, the mean and CV of ITRs of CHPCL came to be 14.56 and 51.06%.The mean and CV of DTRs of BPC came to be 4.72 and 64.03%. Similarly, the mean and CV of DTRs of CHPCL came to be 7.705 and 28.75%.

Both Hydropower Companies present fluctuating trends of profitability ratios. The mean and CV of NPRs of BPC came to be 84.41%and 29.37%. Similarly, the mean and CV of NPRs of CHPCL came to be 87.61%and 10.82%. The mean and CV of OERs of BPC came to be 106.12% and 20.61%. Similarly, the mean and CV of OERs of CHPCL came to be 24.80% and 9.92%. The mean and CV of ROEs of BPC came to be 12.60% and 25.97%. Similarly, the mean and CV of ROEs of CHPCL came to be 12.86%and 15.64%. The mean and CV of ROTAs of BPC came to be 9.20 and 36.32. Similarly, the mean and CV of ROTAs of CHPCL came to be 9.23 and 43.86. The invisibility ratios of both companies present fluctuating trends. The mean and CV of EPSs of BPC came to be NRs. 12.60 and 25.97%. The mean and CV of EPS ratios of CHPCL came to be NRs. 12.86 and 15.74%.

The coefficient of correlation between sales and net profit after tax of BPC and CHPCL came 0.86 and 0.998 respectively. This value of correlation indicates the positive relation between sales and net profit after tax. Considering the probable errors of BPC and CHPCL, since the value of r is greater than 6PE, the correlation is at significant level. The coefficient of correlation relation

between sales and total assets of BPC and CHPCL came 0.9967 and 0.989 respectively. This value of correlation indicates the positive relation between sales and total assets. Considering the probable errors of BPC and CHPCL, since the value of r is greater than 6PE, the correlation is at significant level. The coefficient of correlation relation between total assets and net profit after tax of BPC and CHPCL came 0.867 and 0.9798 respectively. This value of correlation indicates the positive relation between total assets and net profit after tax. Considering the probable errors of BPC and CHPCL, since the value of r is greater than 6PE, the correlation is at significant level. According to the trend equation, the forecasted values of total sales of BPC for coming *five* years would be NRs.5,12,106, NRs.4,04,107, NRs.5,23,192, NRs.5,95,580 and NRs.6,62,872 thousand respectively. Similarly, the forecasted values of total sales of CFIPCL for coming five years would be NRs.9,68,553, NRs.9,85,003, NRs.10,46,082, NRs.11,63,138 and NRs.11,96,889 thousand respectively. The trend equation, the forecasted values of net profit after tax of BPC for coming five years would be NRs.2,43,884, NRs.2,85,569, NRs.4,95,724, NRs.6,28,496 and NRs.6,86,053 thousand respectively. Similarly, the forecasted values of net profit after tax of CHPCL for coming five years would be NR.s.965045, NRs.9,39,675, NRs.8,83,093, NRs.9,42,466 and NRs.9,28,560 thousand respectively.

5.2 Conclusions

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

- The current ratios of the companies seem to be inconsistent. While CHPCL has failed to maintain conventional standard of liquidity position (2:1) throughout the study period, BPC has failed to do so in last couple of years. Liquidity position of CHPCL is more standard than BPC which shows the excess in current assets to meet its current liabilities as compared to BPC.

- The fixed assets turnover ratios of the sample companies both are inconsistent but satisfactory in terms of inclination. It seems that BPC has been able to utilize its current assets more appropriately as the difference in ratios of total assets turnover between the two companies. While CHPCL seems to be operating under the risk of fuming out of inventory, BPC has a very humble rate of inventory turnover. Though the debtor's turnover ratios are almost equivalent, it can be concluded that CHPCL suffers very low turnover in fifth year.

- Though BPC has considerably high operating expenses ratios and inconsistent trend in its net profit ratios the overall performance. With respect to profitability, CHPCL is better than BPC.
- The coefficient of correlation between sales and net profit after tax of BPC and CHPCL show positive and significant relation. It also reveals that CHPCL is slightly more successful than BPC to be able to yield more uniform profits out of its sales.
- The coefficient of correlation between sales and total assets of BPC and CHPCL show positive but CHPCL is more significant relation.
- The coefficient of correlation between total assets and net profit after tax of BPC and CHPCL show positive but that of CHPCL is more significant relation.
- The growth trend analysis of total sales of BPC and CHPCL have increasing trend but net profit after tax of CHPCL is decreasing trend, even BPC trend is increased.

5.3   Recommendations

Based on the conclusions, some recommendations are presented below:
- The liquidity position of CHPCL is very high, and it shows more liquid assets. And BPC needs to maintain the current liquidity position.
- CHPCL should maintain enough inventories so as to avoid threat of stock out. BPC needs to find better ways to control and improve its inventory and receivable management. Fixed assets turnover ratio of BPC is satisfactory but total assets needs to be managed more effectively.
- Including funds of fixed interest in the capital structure can maximize the value of company. Both companies should enjoy the capital of less cost by borrowing funds as they are in strong credibility position. CHPCL should hold the current portion of leverage in its capital structure.
- The profitability position of both companies is satisfactory. However, there is a need for effective production management to control operating costs of CHPCL to control reducing trend of the profit.
- The projected sales values can be meet by setting production and sales plans, and formulating proper policies and strategies.

- The Hydropower Companies should maintain research budgets to study new hydroelectric projects across the country. There should be proper cost control on maintenance activities.
- The Hydropower Companies should introduce SWOT analysis to improve their capability of dealing with external forces and managing internal issues of strengths and weaknesses.
- The Hydropower Companies should maintain a separate human resource department to make sure that there is an effective system of handling grievance of employees and conduction of management development and training programs.
- The Hydropower Companies should follow the practices of setting financial goals for future activities and should develop major programs to accomplish them.

Bibliography

Brigham, W. a. (1979). *Financial Analysis.* Link Road UK: The Dryden Press.

Horn, V. (2000). *Financial Management.* New Delhi: McGrewHill.

Jain, K. A. (n.d.).

Khadka, P. R. (2007). Profit Planning in Hydropower Industry. *International Finance Corporation*, 50-55.

Khatiwada, R. (2007). financial Performance Analysis of Butwal Power Company. *Annual Financial highlight*, 30-40.

Lynch M.R., W. W. (2003). *Accounting for Management and Control.* New Delhi: TATA McGrew.

M.Y. Khan, P. J. (1999). *Financial Management.* New Delhi: Tata McGraw Hill Publishing Company Limited.

Maharjan, U. ((1998)). Hydropower Development Targeting the Poor. *SOHAM International*, 50-62.

Nepal, B. H. (2005). Managing Nepalese Water. *South Asian Journals*, 91-95.

Pandey, B. (2003). People Power Development. *Nepali Times*, 166-168.

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

Pant, W. a. (2005). *resaerch Methodology.* Delhi: S. Chand Publication.

Pokharel, S. (2006). Nepal's Hydropower Dream. *Butwal Power Company*, 62-64.

Poudel, S. (2001). Home financed Chilime Hydropower to go Public. *Kathcess Hydro*, 26-31.

Tamang, S. (2007). The efficiency of NEPSE and effect of Nepalese Investor's . *Economic review*, 40-84.

Appendix A

Computation of Correlation of Coefficient and Probable Error

Correlation between Total Sales and Net Profit after Tax of BPC (In Thousand NRS.)

Year	Sales (X)	Net Profit (Y)	X^2	Y^2	$X \times Y$
2012/013	512106	243884	262252555236	59479405456	124894459704
2013/014	404107	285569	163302467449	81549653761	115400431883
2014/015	523192	495724	273729868864	245742284176	259358831008
2015/016	595580	628496	354715536400	395007222016	374319647680
2016/017	662872	686053	439399288384	470668718809	454765324216
Total	$\sum X =$ 2697857	$\sum Y =$ 2339726	$\sum X^2 =$ 1493399716333	$\sum Y^2 =$ 1252447284218	$\sum XY =$ 1328738694491
Correlation (r) = 0.86			Probable Error (PE) = 0.0785		

$$r = \frac{N\sum XY - \sum X \sum Y}{\sqrt{N\sum X^2 - N\sum(X)^2}\sqrt{N\sum Y^2 - N\sum(Y)^2}} = 0.86$$

$$PE = 0.6745 \times \frac{1-r^2}{\sqrt{N}} = 0.0785$$

Correlation between Total Sales and Net Profit after Tax of CHCPL (In Thousand NRS.)

Year	Sales (X)	Net Profit (Y)	X^2	Y^2	$X \times Y$
2012/013	968553	965045	938094913809	931311852025	934697229885
2013/014	985003	939675	970230910009	882989105625	925582694025
2014/015	1046082	883093	1094287550724	779853246649	923787691626
2015/016	1163138	942466	1352890007044	888242161156	1096218018308
2016/017	1196889	928560	1432543278321	862223673600	1111383249840
Total	$\sum X =$ 5359665	$\sum Y =$ 4658839	$\sum X^2 =$ 5788046659907	$\sum Y^2 =$ 4344620039055	$\sum XY=$ 24969816328935
Correlation (r) = 0.998			Probable Error (PE) = 0.0012		

$$r = \frac{N\sum XY - \sum X \sum Y}{\sqrt{N\sum X^2 - N\sum (X)^2}\sqrt{N\sum Y^2 - N\sum (Y)^2}} = 0.998$$

$$PE = 0.6745 \times \frac{1-r^2}{\sqrt{N}} = 0.0012$$

Correlation between Total Sales and Total Assets of BPC (In Thousand NRS.)

Year	Sales (X)	Total assets(Y)	X^2	Y^2	$X \times Y$
2012/013	512106	4306396	262252555236	18545046508816	2205331229976
2013/014	404107	4859043	163302467449	23610298875849	1963573289601
2014/015	523192	5146218	273729868864	26483559703524	2692460087856
2015/016	595580	5214756	354715536400	27193680139536	3105804378480
2016/017	662872	5369333	439399288384	28829736864889	3559180504376
Total	$\sum X =$ 2697857	$\sum Y =$ 24895746	$\sum X^2 =$ 1493399716333	$\sum Y^2 =$ 124662322092614	$\sum XY=$ 67165162616322
Correlation (r) = 0.9967			Probable Error (PE) = 0.00198		

$$r = \frac{N\sum XY - \sum X \sum Y}{\sqrt{N\sum X^2 - N\sum (X)^2}\sqrt{N\sum Y^2 - N\sum (Y)^2}} = 0.996, \quad PE = 0.6745 \times \frac{1-r^2}{\sqrt{N}} = 0.00198$$

Correlation between Total Sales and Total Assets of CHCPL (In Thousand NRS.)

Year	Sales (X)	Total Assets(Y)	X^2	Y^2	$X \times Y$
2012/013	968553	6077749	938094913809	36939032907001	5886622027197
2013/014	985003	9451028	970230910009	89321930256784	9309290933084
2014/015	1046082	11468475	1094287550724	131525918825625	11996965264950
2015/016	1163138	13128769	1352890007044	172364575455361	15270570117122
2016/017	1196889	17044513	1432543278321	290515423407169	20400390120057
Total	$\sum X = $ 5359665	$\sum Y = $ 57170534	$\sum X^2 = $ 5788046659907	$\sum Y^2 = $ 720666880851940	$\sum XY = $ 62863838462410
Correlation (r) = 0.989			Probable Error (PE) = 0.0659		

$$r = \frac{N\sum XY - \sum X \sum Y}{\sqrt{N\sum X^2 - N\sum(X)^2}\sqrt{N\sum Y^2 - N\sum(Y)^2}} = 0.0989, \text{PE}= 0.6745 \times \frac{1-r^2}{\sqrt{N}} = 0.0659$$

Correlation between Total Assets and Net Profit after Tax of BPC (In Thousand NRS.)

Year	Total assets(X)	Net Profit (Y)	X^2	Y^2	$X \times Y$
2012/013	4306396	243884	18545046508816	59479405456	1050261082064
2013/014	4859043	285569	23610298875849	81549653761	1387592050467
2014/015	5146218	495724	26483559703524	245742284176	2551103771832
2015/016	5214756	628496	27193680139536	395007222016	3277453286976
2016/017	5369333	686053	28829736864889	470668718809	3683647012649
Total	$\sum X = $ 24895746	$\sum Y = $ 2339726	$\sum X^2 = $ 124662322092614	$\sum Y^2 = $ 1252447284218	$\sum XY = $ 11950057203988
Correlation (r) = 0.867			Probable Error (PE) = 0.0749		

$$r = \frac{N\sum XY - \sum X \sum Y}{\sqrt{N\sum X^2 - N\sum(X)^2}\sqrt{N\sum Y^2 - N\sum(Y)^2}} = 0.867 \quad , \text{PE}= 0.6745 \times \frac{1-r^2}{\sqrt{N}} = 0.0749$$

Correlation between Total Assets and Net Profit after Tax of CHCPL (In Thousand NRs)

Year	Total assets(X)	Net Profit (Y)	X^2	Y^2	$X \times Y$
2012/013	6077749	965045	36939032907001	931311852025	5865301283705
2013/014	9451028	939675	89321930256784	882989105625	8880894735900
2014/015	11468475	883093	131525918825625	779853246649	10127729993175
2015/016	13128769	942466	172364575455361	888242161156	12373418404354
2016/017	17044513	928560	290515423407169	862223673600	15826852991280
Total	$\sum X =$ 57170534	$\sum Y =$ 4658839	$\sum X^2 =$ 720666880851940	$\sum Y^2 =$ 4344620039055	$\sum XY=$ 53074197408414
Correlation (r) = 0.9798			Probable Error (PE) = 0.0121		

$$r = \frac{N\sum XY - \sum X \sum Y}{\sqrt{N\sum X^2 - N\sum(X)^2}\sqrt{N\sum Y^2 - N\sum(Y)^2}} = 0.9798$$

$$PE = 0.6745 \times \frac{1-r^2}{\sqrt{N}} = 0.0121$$

Appendix B

Computation of Trend Values

Least Square Trend Analysis of Total Sales Growth of BPC (In Thousand NRS.)

Fiscal Year	Time	X= Time-3	Sales (Y)	X^2	$X \times Y$	Trend Analysis $(Y_c = a + bX)$
2012/013	1	-2	512106	4	-1024212	440970.4
2013/014	2	-1	404107	1	-404107	490270.9
2014/015	3	0	523192	0	0	539571.4
2015/016	4	1	595580	1	595580	588871.9
2016/017	5	2	662872	4	1325744	638172.4
		$\sum X = 0$	$\sum Y = 2697857$	$\sum X^2 = 10$	$\sum XY = 493005$	
a= 539571.4			b= 49300.5			
2017/18	6	3				687472.9
2018/19	7	4				736773.4
2019/20	8	5				786073.9
2020/21	9	6				835374.4
2021/22	10	7				884674.9

Mathematically Y = a+ bX

Where, Y = Value of the dependent value, A= Y – intercept, B= Slope of trend line

X= Value of the independent value

Normal equations fitting above equation are:

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

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

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

Least Square Trend Analysis of Total Sales Growth of CHPCL (In Thousand NRS.)

Fiscal Year	Time	X= Time-3	Sales (Y)	X^2	$X \times Y$	Trend Analysis $(Y_c=a+bX)$
2012/013	1	-2	968553	4	-1937106	944971.6
2013/014	2	-1	985003	1	-985003	1008452.3
2014/015	3	0	1046082	0	0	1071933
2015/016	4	1	1163138	1	1163138	1135413.7
2016/017	5	2	1196889	4	2393778	1198894.4
		$\sum X=0$	$\sum Y=5359665$	$\sum X^2=10$	$\sum XY=634807$	
a=1071933			b=63480.7			
2017/18	6	3				1262375.1
2018/19	7	4				1325855.8
2019/20	8	5				1389336.5
2020/21	9	6				1452817.2
2021/22	10	7				1516297.9

Least Square Trend Analysis of Net Profit after Tax Growth of BPC (In Thousand NRS.)

Fiscal Year	Time	X= Time-3	Net Profit After Tax (Y)	X^2	$X \times Y$	Trend Analysis (Y_c= a+ bX)
2012/013	1	-2	243884	4	-487768	222492.2
2013/014	2	-1	285569	1	-285569	345218.7
2014/015	3	0	495724	0	0	467945.2
2015/016	4	1	628496	1	628496	590671.7
2016/017	5	2	686053	4	1372106	713398.2
		$\sum X$ =0	$\sum Y$ =2339726	$\sum X^2$ =10	$\sum XY$=1227265	
a= 467945.2			b=122726.5			
2017/18	6	3				836124.7
2018/19	7	4				958851.2
2019/20	8	5				1081577.7
2020/21	9	6				1204304.2
2021/22	10	7				1327030.7

Least Square Trend Analysis of Net Profit after Tax Growth of CHPCL (In Thousand NRS.)

Fiscal Year	Time	$X=$ Time-3	Net Profit After Tax (Y)	X^2	$X \times Y$	Trend Analysis $(Y_c = a + bX)$
2012/013	1	-2	965045	4	-1930090	945803.6
2013/014	2	-1	939675	1	-939675	938785.7
2014/015	3	0	883093	0	0	931767.8
2015/016	4	1	942466	1	942466	924749.9
2016/017	5	2	928560	4	1857120	917732
		$\sum X = 0$	$\sum Y = 4658839$	$\sum X^2 = 10$	$\sum XY = -70179$	
a=931767.8			b=7017.9			
2017/18	6	3				910714.1
2018/19	7	4				903696.2
2019/20	8	5				896678.3
2020/21	9	6				889660.4
2021/22	10	7				882642.5