COMPARATIVE FINANCIAL ANALYSIS OF BUTWAL POWER COMPANY AND CHILIME HYDROPOWER COMPANY LIMITED

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DECLARATION

I hereby declare that the work reported in this thesis entitled **COMPARATIVE FINANCIAL ANALYSIS OF BUTWAL POWER COMPANY AND CHILIME HYDROPOWER COMPANY LIMITED"** submitted to Office of the Dean, Faculty of Management, Tribhuvan University, is my original work done in the form of partial fulfillment of the requirement for the degree of Master of Business Studies (MBS) under the supervision of Ramesh Kumar Paudel of Shankar Dev Campus, T.U.

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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-1

INTRODUCTION

1.1 Background of the Study

Hydropower projects in Nepal have traditionally been considered expensive due to the significant costs associated with access roads and power evacuation transmission lines. These costs are compounded by the fact that most of the viable hydropower sites are situated in remote mountainous areas. Before any project can commence, there is a need to construct access roads to these remote sites, which adds substantial costs to the overall project budget. Additionally, the high voltage power evacuation systems required to transport the generated electricity further increase the expenses, making the power from these projects comparatively expensive. This high cost can undermine the competitive edge of hydropower compared to other energy sources in the market.

To address this challenge, it is crucial for the Government of Nepal, along with donor agencies and multilateral lending institutions, to focus on the development of trunk highways in the major river valleys of Nepal. By constructing these highways, access to remote hydropower sites would be significantly improved, reducing the overall project costs. Furthermore, developing high voltage transmission lines in these river valleys would facilitate the efficient evacuation of power from these projects. This strategic infrastructure development would open up the river valleys for private power producers to develop projects around these rivers and their tributaries, resulting in less expensive power generation and enhancing the competitive advantages of clean energy.

The private sector is increasingly playing a vital role in economic activities related to power project development. There is a strong belief that the private sector should have a greater influence in governmental decision-making processes, especially on national economic issues and bilateral and multilateral matters that have a direct impact on the hydropower industry.

The potential of the hydropower sector in Nepal to contribute to economic growth and development is immense. It is estimated that Nepal has the capacity to generate 83,000

MW of electricity from hydropower, with about 45,000 MW considered economically feasible. However, according to the Nepal Electricity Authority (NEA) Annual Report 2022-23, the current installed capacity of hydropower is only about 2,500 MW, representing less than 6% of the total economically feasible capacity. By the end of the financial year, 126 projects with a combined capacity of 3,103 MW were under construction, with power purchase agreements (PPAs) already in place. In the fiscal year 2022-23 alone, a total of 35 new PPAs with a combined capacity of 1,350 MW were signed.

The introduction of policies welcoming private foreign investment in the hydropower sector has led to the formation of joint ventures involving significant foreign investors. These ventures are generating and selling hydropower on a build-operate-transfer basis. Additionally, several public-private partnership projects are under construction. Despite these developments, electricity still accounts for a small share of the total energy consumption in Nepal. Historically, fuel wood accounted for 75% of total energy consumption, and less than 20% of the population used electricity for household consumption. However, the NEA's Annual Report for FY 2018/19 indicated that 87% of the population now has access to electricity.

The range of project sizes available for foreign direct investment (FDI) in Nepal is extensive, varying from small hydropower generation schemes to very large hydropower projects. This variety presents a wide array of investment opportunities. Numerous well-studied projects of various scales and sizes are already available for investment, and the government is keen to invite both domestic and foreign private capital to invest in these projects.

In the past, significant time was spent discussing the potential of hydropower to contribute to national prosperity, but little real action or project implementation occurred. However, the past decade has witnessed a significant shift. With proper legislation and policy frameworks now in place, along with the implementation of several small hydropower projects with private sector investment, there has been a tangible move

towards harnessing Nepal's hydropower potential. This progress marks an important beginning in realizing the country's vast hydropower potential to substantially contribute to economic growth and development.

In conclusion, the development of infrastructure such as trunk highways and high voltage transmission lines in major river valleys is essential for reducing the costs of hydropower projects in Nepal. By doing so, the hydropower sector can become more competitive and play a significant role in the country's economic development. The involvement of the private sector, supported by favorable government policies and foreign investment, is crucial in achieving this goal. The recent advancements in legislation, policy frameworks, and project implementation signify a promising future for the hydropower industry in Nepal.

1.2 Introduction to Butwal Power Company & Chilime Hydropower Company Limited

Hydropower companies are entities that, while not public utilities, own facilities to generate electric power for sale to utilities and end users. These companies play a crucial role in the development and utilization of renewable energy resources, particularly in countries with significant hydropower potential like Nepal.

Two prominent examples of hydropower companies in Nepal are Butwal Power Company Ltd and Chilime Hydropower Company Ltd. These companies are part of a broader group of private entities that have been instrumental in advancing Nepal's hydropower sector. Other notable hydropower companies in Nepal include Himal Power Ltd, Bhotekoshi Power Company Ltd, Arun Valley Hydropower Company Private Ltd, Sanima Hydropower Company Private Ltd, National Hydro Power Company Ltd, Syangja Bidyut Company Ltd, Rairang Hydropower Development Company Private Ltd, Kundi Hydro Power Ltd, Unique Hydel Company Private Ltd, and Alliance Power Private Ltd.

These companies, along with others in the industry, are vital to harnessing Nepal's abundant hydropower resources. They contribute not only to the generation of clean energy but also to the overall economic growth and development of the country by creating jobs, fostering technological advancements, and supporting infrastructure development.

1.2.1 Butwal Power Company (BPC) Limited

Butwal Power Company (BPC) was incorporated in 1966 AD and has amassed 57 years of experience in the hydropower sector. It stands today as one of the leading listed companies in Nepal, emerging during a time when the country's total electricity generation capacity was only 3.45 MW. BPC was initially established with assistance from the United Mission to Nepal and was later converted into a public limited company in 1993. Over the years, it has developed a strong reputation for pioneering multifaceted capacity-building initiatives in hydropower development.

In 1967 AD, BPC developed the Tinau Project, which was instrumental in lighting up the town of Butwal and promoting industrial development in the area. As one of the pioneering private sector hydropower developers in Nepal, BPC has made significant contributions to the country's energy landscape. The company is a shareholder in the 60 MW Khimti Hydropower Project and owns and operates the 12 MW Jhimruk Hydropower Plant and the 5.1 MW Andhikhola Hydropower Plant. These power plants not only supply power to the national electricity grid but have also electrified more than 20,000 households through BPC’s rural electrification program. Additionally, BPC owns 16.88% of the shares in Khimti Hydropower Plant (60 MW) and 51.3% of the shares in Nepal Hydro and Electric Pvt. Ltd., which accounted for about 10% of the Group’s total assets and approximately 17% of the Group’s total revenue in the fiscal year 2018/19.

In 2003, BPC was privatized. Its main shareholders are Shangri-La Energy Limited, Interkraft Norway, the general public, and the Ministry of Water Resources of Nepal. The share distribution of BPC is as follows: Shangri-La Energy Limited holds 56.27%, the general public holds 29.29%, and the Government of Nepal holds 7.42%. BPC is an

exemplary model of a company jointly owned by the public, private sector, government, and employees.

BPC's vision is to provide quality and competitive services to its customers. Its mission is to supply electricity within its distribution areas in Nepal and expand its distribution to feasible areas. The company plans to build, acquire, own, and operate electric power plants, as well as purchase electricity to meet its needs. It also aims to make strategic investments to support its interests, supply affordable electricity, and render professional services in its areas of expertise.

Overall, Butwal Power Company exemplifies a successful blend of public and private ownership, with a clear vision and mission to enhance Nepal's energy sector through sustainable and strategic initiatives.

1.2.2 Chilime Hydropower Company Limited (CHPCL)

Chilime Hydropower Company Limited (CHPCL) is a subsidiary of the Nepal Electricity Authority (NEA), holding 51% equity ownership. The remaining 49% of shares are distributed among the general public (14%), project-affected local people (10%), and employees of NEA and Chilime (25%). The company's shares are listed and actively traded on the Nepal Stock Exchange Limited (NEPSE).

Established in 1995, CHPCL aims to promote the utilization of domestic resources for hydropower development. The company successfully built and commissioned the Chilime Hydroelectric Project, with an installed capacity of 22.1 MW, located in the Rasuwa district, on August 25, 2003. Since its commissioning, the project has delivered 528.63 GWh of electrical energy to NEA. Notably, in FY 2006/07, the project delivered 104.5% of the Contract Energy to NEA. NEA invested NRs. 489.6 million in the project and received dividends of 10%, 20%, and 30% of its equity shares in FY 2003/04, 2004/05, and 2005/06, respectively. Additionally, 25% of the equity shares were distributed to NEA staff in FY 2006/07, and shareholders received a 35% dividend that year.

CHPCL is currently developing three additional hydroelectric projects, which are at various stages of progress. The feasibility studies for the Upper Sanjen Hydroelectric Project (14.8 MW) and the Sanjen Hydroelectric Project (42.5 MW) have been completed, and applications for power purchase agreements with NEA have been submitted. Both projects are situated upstream of the existing Chilime HEP, and local communities are eager to participate in their implementation. The Citizen Investment Trust has already issued a Letter of Intent for financing the Upper Sanjen HEP. Construction of these projects will commence once the construction licenses are issued by the Ministry of Water Resources.

Additionally, CHPCL has completed the feasibility study for the Middle Bhotekoshi Hydroelectric Project (102 MW) located in the Sindhupalchok district. This project will see participation from the local people of Sindhupalchok and other organizations. CHPCL is dedicated to developing more medium and large-scale hydroelectric projects in the future, with increased participation from various sectors within the country.

Chilime Hydropower Company Limited exemplifies the collaborative approach to hydropower development in Nepal, involving various stakeholders, including local communities, employees, and public and private sectors. Through its ongoing and future projects, CHPCL is committed to contributing significantly to Nepal's energy sector and promoting sustainable development.

1.3 Focus of the Study

The focus of this study is to evaluate the financial performance of private and public hydropower companies in Nepal, specifically Butwal Power Company Ltd (BPC) and Chilime Hydropower Company Ltd (CHPCL). Historically, there has been limited emphasis on assessing the financial performance of hydropower companies, and research in this field is insufficient. Without clear key financial indicators, it is challenging to analyze the success or failure of hydropower projects. Therefore, having a clear financial picture is essential for the evolution and improvement of the sector.

This study aims to fill this research gap by providing a comprehensive comparative analysis of the financial performance of BPC and CHPCL. By examining various financial data and indicators, the study seeks to identify how effectively these companies are performing. The analysis will cover several aspects, including profitability, efficiency, liquidity, and overall financial health, to provide a detailed understanding of each company's financial status.

The outcomes of this research will be significant for multiple stakeholders. Researchers will benefit from the study's insights into the financial dynamics of the hydropower sector. Private and public sector entities can use the findings to inform policy-making and strategic planning, ensuring that future projects are financially viable and sustainable.

This comparative financial performance evaluation will use data from financial statements, annual reports, and other relevant documents of BPC and CHPCL. Key financial ratios and metrics will be calculated and analyzed to draw meaningful conclusions about the companies' financial health and performance trends over recent years.

By providing a clear and detailed financial picture of these two leading hydropower companies, the study will contribute to the broader understanding of the financial aspects of the hydropower sector in Nepal. It will offer valuable insights into the strengths and weaknesses of each company, helping to identify best practices and areas needing improvement. Ultimately, this research aims to support the sustainable development of the hydropower industry by highlighting the critical financial factors that drive success and resilience in this vital sector.

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

Research Questions

i. What are the financial positions and performance of the two companies?
ii. Do the financial ratios best describe the performance of these hydropower companies?
iii. Which company is more effective and efficient in terms of financial performance?

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

1.5 Objectives of the Study

The study basically aims to compare 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 comparative financial performance of selected companies in terms of liquidity, profitability, solvency, and capital adequacy position.
- To identify the best performing hydropower company on the basis of compared financial indicators.
- To predict the growth trend of Butwal power company and Chilime hydro power over 10 years.

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 10 years from the first fiscal year 2013/14 to the recent fiscal year 2022/23 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 149 Hydropower Companies (more than 1MW) in operation, as per Department of Electricity Department, 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 Review

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 richest countries in the hydropower sector, many important literatures are available in this field. This chapter reviews the available literature relating to hydropower sector and views expressed by various scholars and researchers on the financial performance of private and public enterprises.

2.2 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

A balance sheet is essential for stakeholders, including investors, creditors, and management, as it provides crucial information about the company's financial position and its ability to meet short-term and long-term obligations. It details the company's assets, liabilities, and shareholders' equity, offering a comprehensive view of what the company owns and owes, and the amount invested by shareholders. This financial statement helps investors assess the company's net worth and liquidity, aiding in investment decisions, while creditors use it to evaluate the company's creditworthiness and ability to repay debts. For management, the balance sheet is a vital tool for strategic planning and decision-making, providing insights into operational efficiency and financial stability. By understanding the balance sheet, stakeholders can make informed decisions regarding investments, lending, and business strategies (Kimmel, Weygandt, & Kieso, 2019).

(b) Income Statement

An income statement, or profit and loss statement, is a vital financial document that summarizes a company's revenues, expenses, and profits or losses over a specific period, such as a fiscal quarter or year. It includes key components like revenue, the cost of goods sold, gross profit, operating expenses, operating income, non-operating income and expenses, and net income. This statement provides stakeholders with essential insights into the company's operational performance and profitability. Investors use it to evaluate profitability and growth potential, creditors to assess the company's ability to repay debts, and management to gauge efficiency and plan for future growth. By offering a detailed view of financial performance, the income statement helps stakeholders make informed decisions about investments, lending, and strategic planning (Weygandt, Kimmel, & Kieso, 2019).

(c) Statement Change in Financial Position

The Statement of Changes in Financial Position, commonly known as the cash flow statement, is crucial for stakeholders as it details how a company's cash and cash equivalents have changed over a specific period. This statement is divided into operating activities, investing activities, and financing activities, providing a comprehensive view of cash inflows and outflows. Operating activities show cash generated from core business operations, investing activities reflect cash used for long-term asset purchases or sales, and financing activities reveal changes in capital structure through debt and equity transactions. This statement helps investors assess a company's ability to generate cash and sustain dividends, creditors evaluate its capacity to repay debts, and management plan for future cash needs and strategic decisions. Understanding the cash flow statement is essential for making informed decisions about a company's financial health and liquidity (Weygandt, Kimmel, & Kieso, 2019).

2.3 Techniques or Financial Statement Analysis

Financial statement analysis involves evaluating a company's financial data to understand its performance and make informed decisions using techniques such as horizontal analysis, which compares financial data over multiple periods to identify trends; vertical analysis, which compares each item as a percentage of a base item to understand cost structure and profitability; and ratio analysis, which calculates liquidity, solvency, profitability, and efficiency ratios to assess various performance aspects. Additionally, common-size financial statements standardize data for comparison across companies or periods, trend analysis predicts future performance based on historical data, DuPont analysis breaks down return on equity into profit margin, asset turnover, and financial leverage components, and comparative analysis benchmarks performance against industry standards and competitors. These techniques provide stakeholders with a comprehensive understanding of a company's financial health, operational efficiency, and overall performance, aiding in investment, lending, and strategic planning decisions (Kimmel, Weygandt, & Kieso, 2019).

Among the various techniques available, the selection of a particular technique or combination of techniques depends on the specific purpose of the analysis. Each technique provides unique insights into different aspects of the company's financial health and performance. Therefore, to gain a comprehensive understanding, analysts may use some or all of the following major techniques:

(a) Funds Flow Statement

A Funds Flow Statement, also known as the statement of changes in financial position, details the movement of funds within a company over a specific period, highlighting sources such as net income from operations, sales of assets, issuance of shares or debentures, and borrowings, and uses such as operating expenses, asset purchases, debt repayments, and dividend payments. This statement provides stakeholders with valuable insights into how the company's financial resources are managed and utilized, helping investors assess resource management and operational efficiency, creditors evaluate the company's ability to meet financial obligations, and management make strategic decisions regarding resource allocation, financing, and investments. By offering a comprehensive view of financial activities and changes in working capital, the Funds Flow Statement aids in informed decision-making related to investments, lending, and financial strategies (Kimmel, Weygandt, & Kieso, 2019).

(b) Cash Flow Analysis

Cash flow analysis is a vital process that examines the inflows and outflows of cash within a company over a specific period, providing a clear picture of its liquidity and financial health. This analysis is divided into three main activities: operating activities, which include cash generated from core business operations; investing activities, which involve cash used for acquiring or disposing of long-term assets; and financing activities, which cover cash flows related to borrowing, repaying debt, and issuing or repurchasing equity. By analyzing these components, stakeholders can assess the company's ability to generate cash, sustain operations, meet financial obligations, and fund future growth. Effective cash flow analysis helps investors evaluate the company's financial stability,

creditors determine its creditworthiness, and management plan for strategic investments and financial management (Kimmel, Weygandt, & Kieso, 2019).

(c) Trend Analysis

Trend Analysis is a method that is immensely helpful for the horizontal study of data, allowing for a comparative analysis of financial statements over several years. This method involves comparing the percentage relationships that each statement item bears to the same item in a base year. The base year can be the earliest year, the latest year, or any intervening year under study. By doing so, trend analysis exhibits the direction in which the company is proceeding, highlighting patterns of growth, stability, or decline.

According to Brigham (1979), "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." This analysis is particularly focused on financial ratios that logically relate to one another, rather than computing trend ratios for all items in the statement. By concentrating on items with logical relationships, trend analysis provides a clearer picture of the company's financial trajectory.

Trend analysis is instrumental in identifying long-term movements in key financial indicators such as revenue, expenses, profitability, and asset utilization. It helps stakeholders understand whether the company is improving its financial health or facing potential issues. By tracking these trends over time, companies can make informed strategic decisions, adjust their financial strategies, and plan for future growth or corrective actions. This method is a fundamental tool for financial analysts and managers seeking to gain insights into a company's financial performance and strategic direction.

(d) Ratio Analysis

Ratio Analysis is a widely used tool of financial analysis that involves the systematic use of ratios to interpret financial statements. This method helps in determining the strengths and weaknesses of a firm, as well as assessing its historical performance and current financial condition. According to Khan and Jain (1999), "Ratio analysis is defined as the

systematic use of ratios 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 or variables. By calculating these ratios, analysts can gain insights into various aspects of a company's operations and financial health. For instance, profitability ratios like net profit margin and return on equity help in understanding how efficiently a company is generating profit relative to its revenue and shareholders' equity. Liquidity ratios, such as the current ratio and quick ratio, assess the company's ability to meet its short-term obligations. Solvency ratios, including the debt-to-equity ratio, provide information on the company's long-term financial stability and its reliance on debt financing.

2.4 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 Chilime?" 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.5 currently 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 Rs.10 while the cost or Khimti and Bhotekoshi supplied power would shoot up to a whopping Rs. 42 more than five times that of Chilime- by 2016.

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

i. The cost of capital borrowed from local banks is at its lowest point in many years.
ii. Developers had complete flexibility in where they source their equipment and how they pick contractors, and they can get the best prices.
iii. 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.

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 it is because of various policy and regulatory failures. Government controlled NEA has sole authority on transmission and distribution of electricity in Nepal. In spite of selling most expensive electricity 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.

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 plans. 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 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.

Singh and Sharma (2021) explored the impact of government policies on the financial performance of hydropower projects, using case studies from various countries, including Nepal. Their study found that supportive government policies, such as subsidies, tax incentives, and favorable regulatory frameworks, significantly enhance the financial performance of hydropower projects. Conversely, inconsistent or unfavorable policies can hinder project viability. This research underscores the importance of a stable and supportive policy environment for the success of hydropower projects.

Lee and Park (2021) presented a risk-adjusted approach to evaluate the financial viability of hydropower projects. Their study incorporated various risk factors, including market risks, operational risks, and financial risks, to provide a comprehensive assessment of project viability. By applying this approach to several case studies, they demonstrated how adjusting for risk can significantly alter the perceived financial health of a project. Their findings emphasize the necessity of considering risk in financial evaluations to ensure more accurate and realistic assessments of hydropower projects.

Joshi and Shrestha (2022) explored how different financial structures affect the performance and profitability of hydropower projects in developing countries, with a particular focus on South Asia. They examined various financing models, including public funding, private investment, and public-private partnerships. Their findings

suggest that projects with diversified financial structures tend to perform better financially and operationally. This study highlights the critical role of financial structuring in the success of hydropower projects and provides valuable insights for policymakers and investors in the renewable energy sector.

Smith and Kumar (2022) conducted a comprehensive analysis of the financial mechanisms used in renewable energy projects, with a particular focus on hydropower. Their study compared the financial performance of hydropower projects across different regions and scales. They analyzed investment trends, funding sources, and the impact of government policies on project viability. The research found that regions with supportive policy frameworks and diverse funding sources had more successful hydropower projects. This analysis is crucial for understanding the financial dynamics of renewable energy projects and guiding future investment strategies.

Wang and Zhao (2022) conducted a sectoral analysis of the financial performance of renewable energy companies, including those in the hydropower, solar, and wind sectors. Their study compared financial metrics such as profitability, debt levels, and investment returns across these sectors. They found that while hydropower companies generally had stable profitability, they also faced higher initial capital costs compared to solar and wind energy companies. This research provides a comprehensive overview of the financial landscape of the renewable energy sector and highlights the unique financial characteristics of hydropower companies.

Sharma and Bhattarai (2023) conducted a detailed case study *"To analyze the financial performance of various hydropower projects in Nepal"*. They focused on key financial ratios such as profitability, liquidity, and efficiency to compare the performance of public and private sector projects. Their study revealed significant differences in financial health between the two sectors, with private sector projects often showing better profitability and efficiency metrics. This research underscores the importance of financial performance evaluation in understanding the viability and sustainability of hydropower

projects in Nepal. It also provides a benchmark for future studies in the field of renewable energy finance.

Thapa and Gurung (2023) analyzed the economic and financial aspects of small and medium-sized hydropower projects in Nepal. Their study focused on cost structures, revenue generation, and overall financial sustainability. They found that smaller projects often face higher per-unit costs but can achieve financial sustainability through innovative funding mechanisms and efficient management practices. This research provides important insights into the financial challenges and opportunities faced by smaller hydropower projects, offering guidance for improving their financial performance.

2.5 Research Gap

The purpose of this study is to explore the financial performance of hydropower companies, specifically Butwal Power Company Ltd (BPC) and Chilime Hydropower Company Ltd (CHPCL), and to identify new contributions to the understanding and maintenance of good financial performance in this sector. While previous studies provide a foundation for this research, there remains a significant gap that needs to be addressed to ensure continuity and advancement in the field.

Previous research has laid the groundwork by offering insights into various aspects of financial performance in the hydropower sector. However, there has been limited focus on the comparative financial performance evaluation of private and public sector hydropower companies, particularly in the context of Nepal. This study aims to bridge this gap by linking current research with past studies and building upon their findings to provide a comprehensive analysis of the financial health and performance techniques of BPC and CHPCL.

The exact topic of "Financial Performance Evaluation of Private and Public Sector Hydropower Companies" has not been extensively covered in existing literature. To complete this research, a variety of sources, including books, journal articles, published

and unpublished dissertations, and field opinions, have been consulted. These references serve as guidelines to facilitate a smooth and thorough research process.

Through this study, the researcher aims to identify and address the gaps found in past research, particularly in the methods used to analyze financial performance. By applying different financial performance techniques to the selected hydropower companies, this research will provide new insights and contribute to the existing body of knowledge.

"Financial Analysis of BPC & CHPCL" is a novel topic that seeks to uncover areas previously unexamined. This study will focus on filling the gaps between old and new research, guided by the objectives and limitations set forth. By doing so, it aims to provide a more detailed and nuanced understanding of the financial performance of hydropower companies in Nepal, offering valuable suggestions and knowledge for maintaining good performance in this sector.

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 population refers to the entire set of hydropower companies operating within Nepal's energy sector. However, due to practical constraints and the need for a focused analysis, the sample is narrowed down to two prominent companies: Butwal Power Company and Chilime Hydropower Company Limited. These companies are selected based on their significant market presence, operational scale, and availability of comprehensive financial data, making them representative samples for a detailed comparative financial analysis within the sector.

This analytical study of performance evaluation is based on the financial statements of CHPCL & BPC, from fiscal year 2013/14 to the recent fiscal year 2022/23. Thus, the period covered in the study is 10 years of both CHPCL and 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 ratios, also known as efficiency or assets management ratios, indicate the speed with which a company converts its assets into sales. These ratios involve comparisons between the level of sales and the investment in various assets, reflecting how effectively a company is utilizing its resources to generate revenue. Funds provided by creditors and

owners are invested in different types of assets to produce sales and profits. Effective management of these assets leads to higher sales volumes. Thus, activity ratios are crucial for evaluating the efficiency with which a company manages and uses its assets. A proper balance between sales and assets generally signifies that the assets are being managed well, ensuring optimal use of resources and contributing to the overall profitability of the company. According to Pandey I. M. (1999), the better the management of assets, the greater the sales, highlighting the importance of these ratios in assessing operational efficiency.

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).

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.

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

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.

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

This study accumulates 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.

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

IV. 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.

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

3.6 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 $X_1, X_2, X_3, \ldots\ldots\ldots\ldots Xn$ are the given observations and N being number of observations, then arithmetic mean usually denoted by I is given by:

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

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.

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

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

III. Standard Deviation:

Standard Deviation is a tool to measure the risk. Standard Deviation has been used wherever the mean is calculated to study the deviation of the data from the mean. Here, standard deviation is used as a measure of dispersion. It has also been used as a measure to identify the risk. Higher the deviation greater the risk and vice versa. Mathematically, it is defined as the positive square root of their arithmetic mean of squares of the deviation of the given observations from their arithmetic mean of a set of value. Here, it is denoted by the letter sigma S.D. and (δ).

It can be computed by using following formula

$$S.D(\delta) = \sqrt{\frac{1}{n}\sum\left(X - \bar{X}\right)^2}$$

Greater the magnitude of standard deviation, higher will be the fluctuation and vice versa. (Gupta, 2002).

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)

Table 1

Calculation of Current Ratio (In Thousand NRS.)

Fiscal Year	Current Assets		Current Liabilities		Current Ratio (Times)	
	BPCL	CHPCL	BPCL	CHPCL	BPCL	CHPCL
2013-14	884,848	2,488,057	518,500	113,040	1.71	22.01
2014-15	670,955	1,820,108	511,996	28,898	1.31	62.98
2015-16	695,998	5,109,605	530,165	368,315	1.31	13.87
2016-17	415,410	4,743,539	283,368	5,772,024	1.47	0.82
2017-18	2,294,505	1,287,784	314,618	8,626,716	7.29	0.15
2018-19	925,269	1,903,035	237,419	156,200	3.9	12.18
2019-20	1,341,192	2,425,651	207,465	53,704	6.46	45.17
2020-21	1,922,492	2,610,495	195,894	130,608	9.81	19.99
2021-22	1,680,701	2,796,692	256,643	167,051	6.55	16.74
2022-23	893,411	2,342,703	154,033	158,770	5.8	14.76
Mean (x)					4.56	20.87
Standard Deviation (σ)					2.89	18.37
Coefficient of Variation (C.V) %					63%	88%

Source: Annual Report of BPC & CHPCL

From the above Table 1, which presents the calculation of current ratios for Butwal Power Company Limited (BPCL) and Chilime Hydropower Company Limited (CHPCL) from fiscal years 2013-14 to 2022-23, several key points emerge. BPCL's current ratio shows notable variability, with a range from 1.31 to 9.81 and a mean of 4.56, indicating that BPCL generally has sufficient current assets to cover its current liabilities. The standard deviation of 2.89 and a coefficient of variation (C.V.) of 63% suggest moderate fluctuations in BPCL's liquidity. In contrast, CHPCL exhibits significant fluctuations in its current ratio, ranging from 0.15 to 62.98, with a high mean of 20.87, indicating an overall strong liquidity position influenced by extreme values in certain years. However, the high standard deviation of 18.37 and a C.V. of 88% point to substantial inconsistency in CHPCL's liquidity over the period. These findings indicate that while BPCL maintains a relatively stable but moderate liquidity position, CHPCL, despite its higher average

liquidity, has experienced considerable variability. This variability impacts each company's financial flexibility and their ability to meet short-term obligations, which are crucial for operational stability and financial planning.

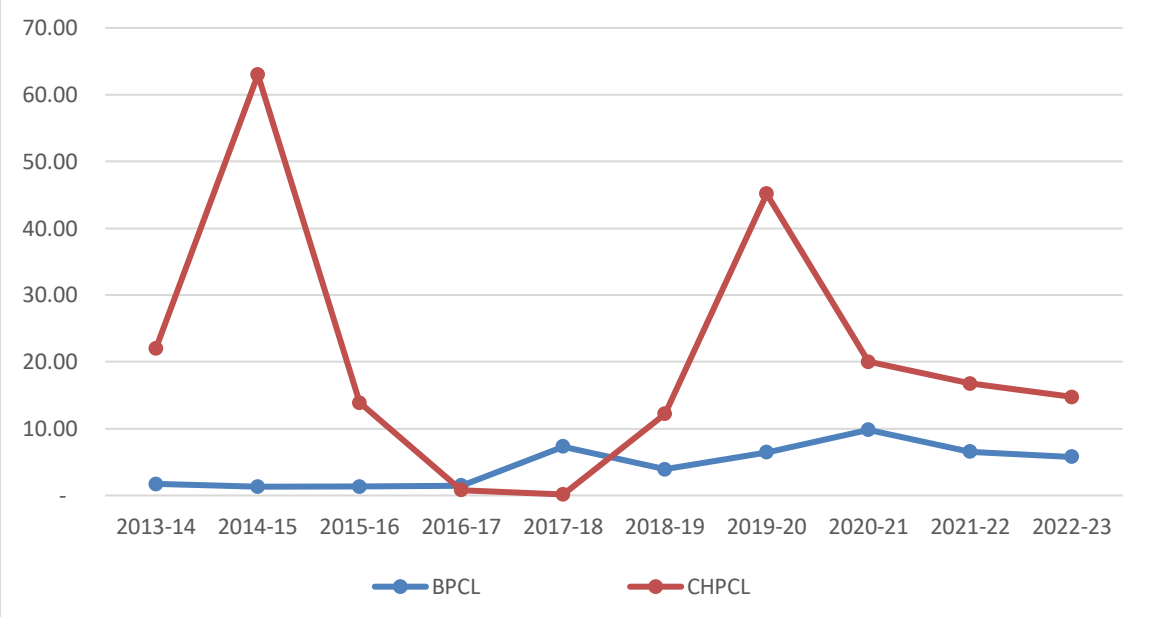


Figure 1 Current Ratio

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 2

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

Fiscal Year	Sales		Fixed Assets		Ratio (Times)	
	BPCL	**CHPCL**	**BPCL**	**CHPCL**	**BPCL**	**CHPCL**
2013-14	404,107	1,210,094	3,974,195	4,360,277	0.102	0.278
2014-15	523,192	1,152,309	4,259,451	5,543,888	0.123	0.208
2015-16	595,579	1,163,138	4,304,983	8,019,165	0.138	0.145
2016-17	662,872	1,196,890	4,953,923	12,300,974	0.134	0.097
2017-18	666,367	1,138,433	5,186,087	7,870,266	0.128	0.145
2018-19	683,078	1,170,432	7,024,001	7,889,904	0.097	0.148
2019-20	686,707	1,140,739	6,525,094	7,895,865	0.105	0.144
2020-21	646,142	1,128,052	5,764,916	7,915,254	0.112	0.143
2021-22	775,085	1,181,740	6,002,110	8,055,571	0.129	0.147
2022-23	724,417	1,128,643	6,745,644	8,712,734	0.107	0.130
Mean (x)					0.12	0.16
Standard Deviation (σ)					0.01	0.05
Coefficient of Variation (C.V) %					12%	30%

Source: Annual Report of BPC & CHPCL

From the above Table 2, which calculates the fixed assets turnover ratio for Butwal Power Company Limited (BPCL) and Chilime Hydropower Company Limited (CHPCL) from fiscal years 2013-14 to 2022-23, several important insights can be drawn. The fixed assets turnover ratio, which measures how effectively a company utilizes its fixed assets to generate sales, varies between the two companies. BPCL's ratio ranges from 0.097 to 0.138, with a mean of 0.12, indicating moderate efficiency in using its fixed assets to produce revenue. The standard deviation of 0.01 and a coefficient of variation (C.V.) of 12% suggest relatively stable performance over the years. In contrast, CHPCL shows a wider range in its fixed assets turnover ratio, from 0.097 to 0.278, with a higher mean of 0.16, indicating better overall efficiency compared to BPCL. However, CHPCL's higher standard deviation of 0.05 and a C.V. of 30% indicate greater variability and less consistency in its ability to utilize fixed assets efficiently. These findings suggest that while CHPCL generally demonstrates higher efficiency in generating sales from its fixed assets, it also faces more fluctuations in its performance, whereas BPCL maintains a more stable but slightly lower efficiency in asset utilization.

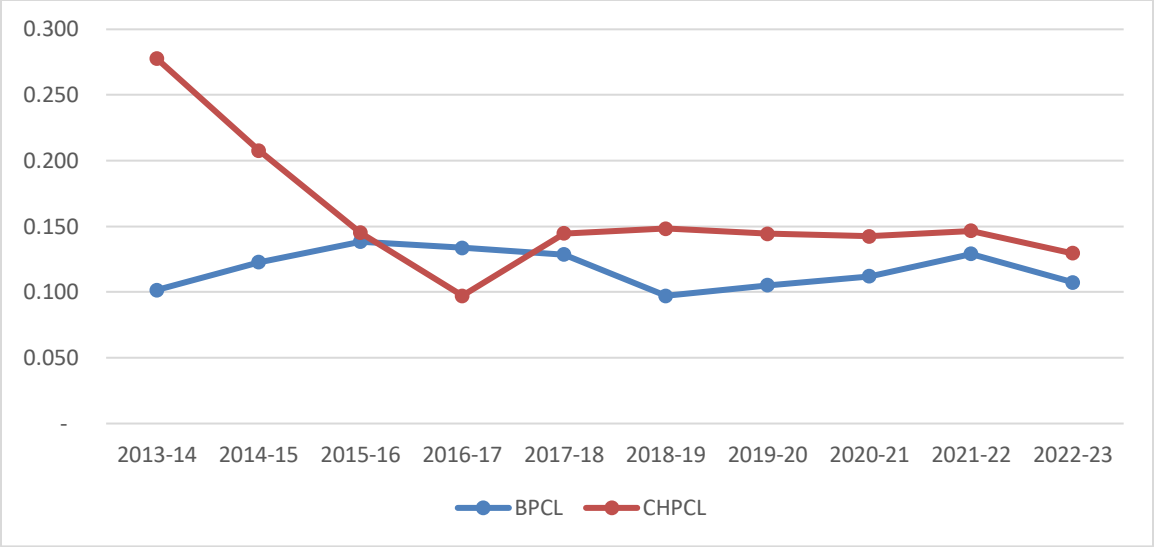


Figure 2

Fixed Assets Turnover Ratio

4.1.3 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 3

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

Fiscal Year	**Sales**		**Total Fixed Assets**		**Ratio (Times)**	
AD	**BPCL**	**CHPCL**	**BPCL**	**CHPCL**	**BPCL**	**CHPCL**
2013-14	404,107	1,210,094	4,859,043	9,451,028	0.083	0.128
2014-15	523,192	1,152,309	5,146,218	11,468,475	0.102	0.100
2015-16	595,579	1,163,138	5,214,756	13,128,769	0.114	0.089
2016-17	662,872	1,196,890	5,369,333	17,044,513	0.123	0.070
2017-18	666,367	1,138,433	7,685,592	22,800,410	0.087	0.050
2018-19	683,078	1,170,432	7,949,270	9,792,939	0.086	0.120
2019-20	686,707	1,140,739	7,866,285	10,517,251	0.087	0.108
2020-21	646,142	1,128,052	7,687,408	10,525,749	0.084	0.107
2021-22	775,085	1,181,740	7,682,810	10,852,263	0.101	0.109
2022-23	724,417	1,128,643	7,639,055	11,055,438	0.095	0.102
Mean (x)					0.10	0.10
Standard Deviation (σ)					0.01	0.02
Coefficient of Variation (C.V) %					14%	22%

Source: Annual Report of BPC & CHPCL

Based on the data in Table 3, which calculates the total assets turnover ratio for Butwal Power Company Limited (BPCL) and Chilime Hydropower Company Limited (CHPCL) from fiscal years 2013-14 to 2022-23, several key points emerge. The total assets turnover ratio, which measures how efficiently a company uses its total assets to generate sales, shows that both BPCL and CHPCL have a mean ratio of 0.10, indicating that on average, each company generates 0.10 NRS in sales for every 1 NRS of assets. BPCL's ratio ranges from 0.083 to 0.123, with a standard deviation of 0.01 and a coefficient of variation (C.V.) of 14%, suggesting relatively stable performance in asset utilization. CHPCL, on the other hand, shows more variability, with its ratio ranging from 0.050 to 0.128, a standard deviation of 0.02, and a C.V. of 22%. This indicates that while CHPCL has moments of higher efficiency, it also experiences greater fluctuations in its ability to utilize its total assets to generate sales. These findings suggest that both companies have similar average efficiency in using their assets, but CHPCL's performance is less consistent compared to BPCL.

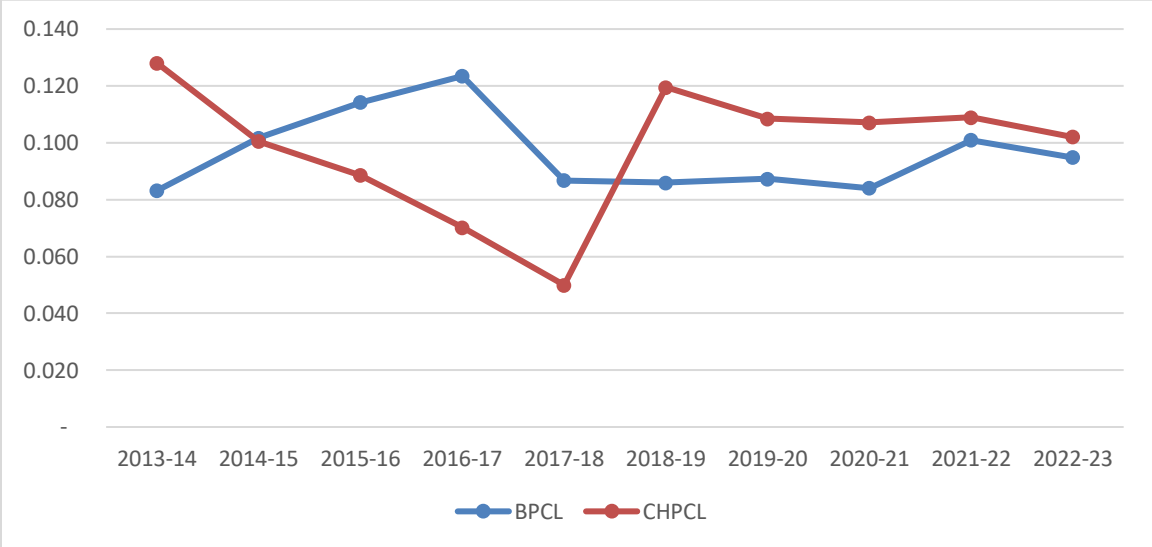


Figure 3 Total Assets Turnover Ratios

4.1.4 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

Calculation of Inventory Turnover Ratio (In Thousand NRS.)

Fiscal Year	Sales		Inventory		Ratio (Times)	
	BPCL	CHPCL	BPCL	CHPCL	BPCL	CHPCL
2013-14	404,107	1,210,094	56,912	47,273	7.101	25.598
2014-15	523,192	1,152,309	40,995	58,777	12.762	19.605
2015-16	595,579	1,163,138	52,071	182,322	11.438	6.380
2016-17	662,872	1,196,890	60,111	178,489	11.027	6.706
2017-18	666,367	1,138,433	44,986	166,794	14.813	6.825
2018-19	683,078	1,170,432	42,779	157,623	15.967	7.426
2019-20	686,707	1,140,739	54,037	154,747	12.708	7.372
2020-21	646,142	1,128,052	50,873	153,623	12.701	7.343
2021-22	775,085	1,181,740	55,365	158,901	14.000	7.437
2022-23	724,417	1,128,643	58,065	46,740	12.476	24.148
Mean (x)					12.50	11.88
Standard Deviation (σ)					2.29	7.49
Coefficient of Variation (C.V) %					18%	63%

Source: Annual Report of BPC & CHPCL

Based on the data in Table 4, which calculates the inventory turnover ratio for Butwal Power Company Limited (BPCL) and Chilime Hydropower Company Limited (CHPCL) from fiscal years 2013-14 to 2022-23, several important insights can be drawn. The inventory turnover ratio, which measures how efficiently a company manages its inventory to generate sales, shows varying levels of efficiency between the two companies. BPCL's inventory turnover ratio ranges from 7.101 to 15.967, with a mean of 12.50, indicating a generally efficient management of inventory relative to sales. The standard deviation of 2.29 and a coefficient of variation (C.V.) of 18% suggest relatively stable performance in inventory management. On the other hand, CHPCL's inventory turnover ratio ranges more widely from 6.380 to 25.598, with a mean of 11.88, indicating a similar average efficiency but with greater variability. The higher standard deviation of 7.49 and a C.V. of 63% highlight significant fluctuations in CHPCL's inventory management efficiency. These findings suggest that while both companies have comparable average inventory turnover ratios, BPCL maintains more consistent inventory management efficiency, whereas CHPCL experiences greater variability in its ability to

manage inventory effectively. This consistency in BPCL's performance may indicate more robust inventory control practices compared to CHPCL.

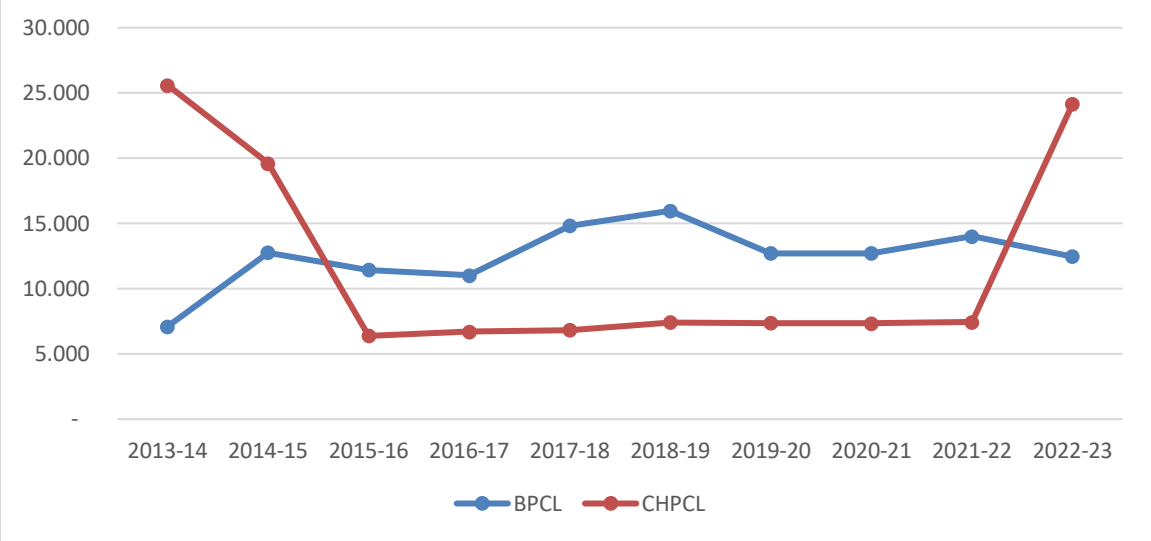


Figure 4 Inventory Turnover Ratios

4.1.5 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 5

Calculation of Debtors Turnover Ratio (In Thousand NRS.)

Fiscal Year	Sales		Debtors		Ratio (Times)	
	BPCL	CHPCL	BPCL	CHPCL	BPCL	CHPCL
2013-14	404,107	1,210,094	335,948	111,615	1.203	10.842
2014-15	523,192	1,152,309	90,790	140,174	5.763	8.221
2015-16	595,579	1,163,138	87,468	138,622	6.809	8.391
2016-17	662,872	1,196,890	83,406	122,069	7.948	9.805
2017-18	666,367	1,138,433	88,266	136,108	7.550	8.364
2018-19	683,078	1,170,432	98,680	126,272	6.922	9.269
2019-20	686,707	1,140,739	73,332	117,223	9.364	9.731
2020-21	646,142	1,128,052	93,039	153,438	6.945	7.352
2021-22	775,085	1,181,740	107,473	266,414	7.212	4.436
2022-23	724,417	1,128,643	65,686	817,725	11.028	1.380
Mean (x)					7.07	7.78
Standard Deviation (σ)					2.41	2.70
Coefficient of Variation (C.V) %					34%	35%

Source: Annual Report of BPC & CHPCL

Based on the data in Table 5, which calculates the debtor's turnover ratio for Butwal Power Company Limited (BPCL) and Chilime Hydropower Company Limited (CHPCL) from fiscal years 2013-14 to 2022-23, we can derive several key insights. The debtors turnover ratio, which measures how efficiently a company collects revenue from its credit sales, varies between the two companies. BPCL's ratio ranges from 1.203 to 11.028, with a mean of 7.07, indicating a moderate efficiency in converting receivables into cash. The standard deviation of 2.41 and a coefficient of variation (C.V.) of 34% suggest significant variability in BPCL's collection efficiency. Conversely, CHPCL's ratio ranges from 1.380 to 10.842, with a slightly higher mean of 7.78, indicating similar overall efficiency but with more variability as shown by the standard deviation of 2.70 and a C.V. of 35%. These findings suggest that both companies have comparable average efficiency in managing debtors, though both experience considerable fluctuations. BPCL shows more consistency in its collection practices, whereas CHPCL faces greater variability, which may impact its cash flow management and financial stability. This analysis highlights the importance of effective receivables management for maintaining operational liquidity.

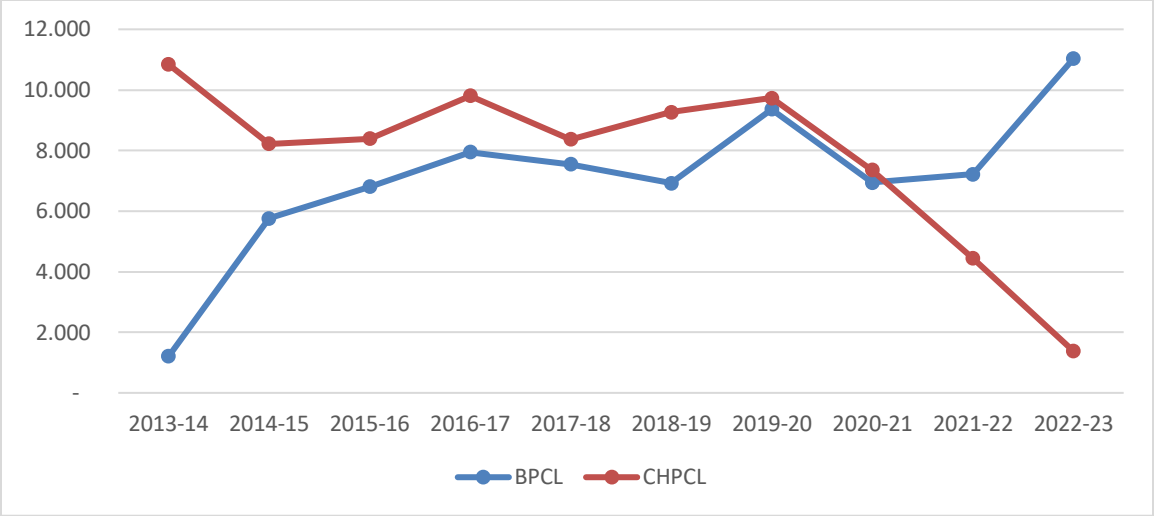


Figure 5 Debtors Turnover Ratios

4.2. 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.

4.2.1 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 6

Calculation of Net Profit Ratio (In Thousand NRS.)

Fiscal Year	Net Profit After Tax		Sales		Ratio (%)	
AD	BPCL	CHPCL	BPCL	CHPCL	BPCL	CHPCL
2013-14	285,569	939,675	404,107	1,210,094	70.7%	77.7%
2014-15	495,724	883,093	523,192	1,152,309	94.7%	76.6%
2015-16	628,496	942,466	595,579	1,163,138	105.5%	81.0%
2016-17	686,053	928,560	662,872	1,196,890	103.5%	77.6%
2017-18	702,263	882,087	666,367	1,138,433	105.4%	77.5%
2018-19	760,335	710,506	683,078	1,170,432	111.3%	60.7%
2019-20	731,284	745,590	686,707	1,140,739	106.5%	65.4%
2020-21	501,816	661,480	646,142	1,128,052	77.7%	58.6%
2021-22	274,150	746,706	775,085	1,181,740	35.4%	63.2%
2022-23	305,071	642,751	724,417	1,128,643	42.1%	56.9%
Mean (x)					0.85	0.70
Standard Deviation (σ)					0.26	0.09
Coefficient of Variation (C.V) %					31%	13%

Source: Annual Report of BPC & CHPCL

Based on the data in Table 6, which calculates the net profit ratio for Butwal Power Company Limited (BPCL) and Chilime Hydropower Company Limited (CHPCL) from fiscal years 2013-14 to 2022-23, several significant points emerge. The net profit ratio, which indicates the percentage of profit a company generates from its sales after taxes, varies notably between BPCL and CHPCL. BPCL's net profit ratio ranges from 35.4% to 111.3%, with a mean of 85%, suggesting a strong and generally high profitability relative to its sales. The standard deviation of 26% and a coefficient of variation (C.V.) of 31% indicate moderate variability in BPCL's profitability over the years. In contrast, CHPCL's net profit ratio ranges from 56.9% to 81.0%, with a mean of 70%, reflecting a slightly lower average profitability compared to BPCL but with greater consistency. The lower standard deviation of 9% and a C.V. of 13% highlight CHPCL's more stable profitability. These findings suggest that while BPCL achieves higher average profitability, it experiences more significant fluctuations, whereas CHPCL maintains steadier but slightly

lower profitability levels. This analysis underscores BPCL's ability to generate high profits, albeit with more variability, and CHPCL's more consistent but modest profit generation, impacting their respective financial stability and investor confidence.

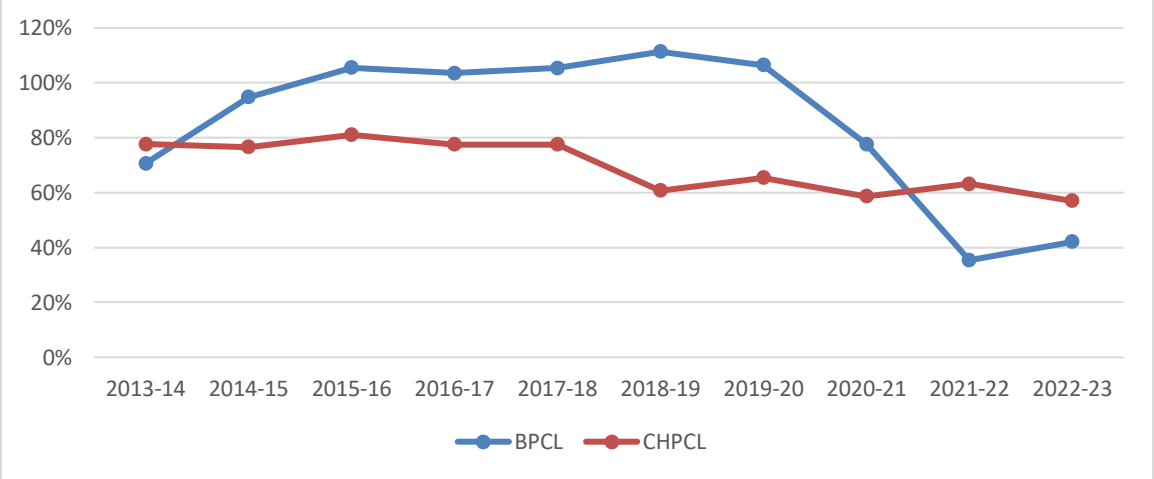


Figure 6 Net Profit Ratios

4.2.2 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 7

Calculation of Operating Expenses Ratio (In Thousand NRS.)

Fiscal Year	Operating Expenses		Sales		Ratio (%)	
AD	**BPCL**	**CHPCL**	**BPCL**	**CHPCL**	**BPCL**	**CHPCL**
2013-14	574,088	271,427	404,107	1,210,094	142.1%	22.4%
2014-15	550,023	246,501	523,192	1,152,309	105.1%	21.4%
2015-16	539,216	258,543	595,579	1,163,138	90.5%	22.2%
2016-17	574,502	281,511	662,872	1,196,890	86.7%	23.5%
2017-18	415,433	405,393	666,367	1,138,433	62.3%	35.6%
2018-19	435,407	336,810	683,078	1,170,432	63.7%	28.8%
2019-20	413,202	345,362	686,707	1,140,739	60.2%	30.3%
2020-21	602,546	388,610	646,142	1,128,052	93.3%	34.4%
2021-22	919,918	408,660	775,085	1,181,740	118.7%	34.6%
2022-23	835,793	450,491	724,417	1,128,643	115.4%	39.9%
Mean (x)					0.94	0.29
Standard Deviation (σ)					0.26	0.06
Coefficient of Variation (C.V) %					27%	22%

Source: Annual Report of BPC & CHPCL

Based on the data in Table 7, which calculates the operating expenses ratio for Butwal Power Company Limited (BPCL) and Chilime Hydropower Company Limited (CHPCL) from fiscal years 2013-14 to 2022-23, we can derive several important insights. The operating expenses ratio, which measures the percentage of sales consumed by operating expenses, highlights differences in operational efficiency between the two companies. BPCL's ratio ranges from 60.2% to 142.1%, with a mean of 94%, indicating that a significant portion of its sales is consumed by operating expenses. The standard deviation of 26% and a coefficient of variation (C.V.) of 27% reflect considerable variability in

BPCL's operational efficiency. In contrast, CHPCL's operating expenses ratio ranges from 21.4% to 39.9%, with a mean of 29%, indicating more efficient management of operating costs relative to sales. CHPCL's lower standard deviation of 6% and a C.V. of 22% suggest more consistent performance in controlling operating expenses. These findings suggest that BPCL has higher operating expenses relative to its sales, with more variability, whereas CHPCL maintains more efficient and stable control over its operating expenses. This analysis underscores BPCL's need to improve operational efficiency and control costs to enhance profitability, while CHPCL's consistent management of operating expenses contributes positively to its financial stability.

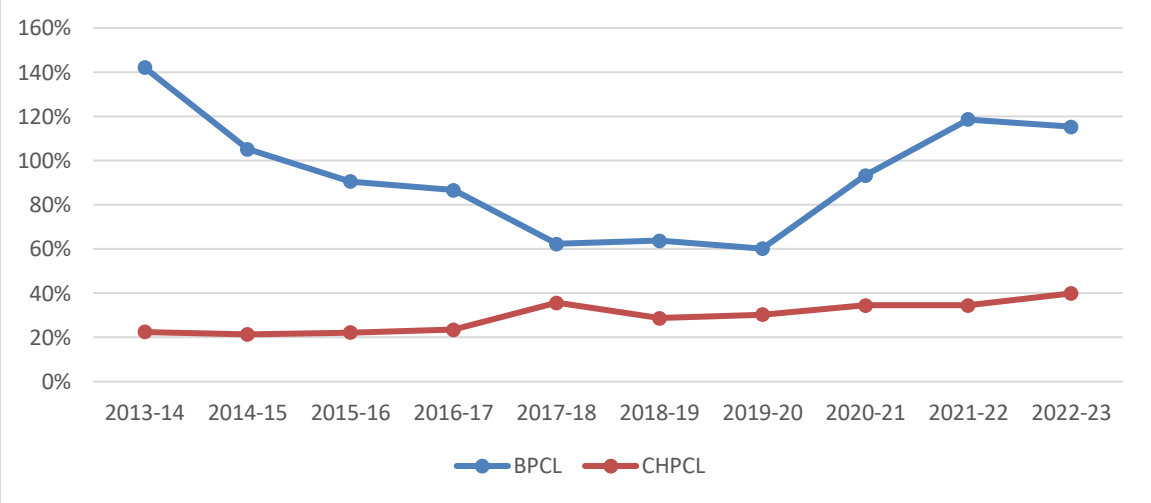


Figure 7 Operating Expenses Ratio

4.2.3 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 8

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

Fiscal Year	Net Profit After Tax		Shareholder's Equity		Ratio (%)	
	BPCL	CHPCL	BPCL	CHPCL	BPCL	CHPCL
2013-14	285,569	939,675	3,259,498	7,083,201	8.8%	13.3%
2014-15	495,724	883,093	3,774,028	7,627,195	13.1%	11.6%
2015-16	628,496	942,467	3,977,850	7,730,464	15.8%	12.2%
2016-17	686,053	934,025	4,392,459	8,348,674	15.6%	11.2%
2017-18	702,263	921,725	6,510,197	8,719,939	10.8%	10.6%
2018-19	760,335	710,506	6,901,281	9,301,023	11.0%	7.6%
2019-20	731,284	748,059	7,029,047	10,013,482	10.4%	7.5%
2020-21	501,816	661,480	7,009,391	10,104,759	7.2%	6.5%
2021-22	274,150	746,706	7,012,668	10,378,672	3.9%	7.2%
2022-23	305,071	642,751	7,032,668	20,263,300	4.3%	3.2%
Mean (x)					0.10	0.09
Standard Deviation (σ)					0.04	0.03
Coefficient of Variation (C.V) %					39%	33%

Source: Annual Report of BPC & CHPCL

Based on the data in Table 8, which calculates the return on shareholders' equity (ROE) for Butwal Power Company Limited (BPCL) and Chilime Hydropower Company Limited (CHPCL) from fiscal years 2013-14 to 2022-23, several key points emerge. ROE measures a company's ability to generate profit from its shareholders' equity, indicating how effectively management is using equity financing. BPCL's ROE ranges from 3.9% to 15.8%, with a mean of 10%, suggesting moderate profitability and effective use of equity. The standard deviation of 4% and a coefficient of variation (C.V.) of 39% reflect significant variability in BPCL's ability to generate returns for its shareholders. In contrast, CHPCL's ROE ranges from 3.2% to 13.3%, with a slightly lower mean of 9%, indicating a similar level of profitability but with more stability. CHPCL's standard deviation of 3% and a C.V. of 33% suggest less variability compared to BPCL, indicating more consistent performance in generating returns for its shareholders. These findings suggest that while both companies have comparable average ROE, BPCL experiences more fluctuations in profitability, whereas CHPCL maintains more stable returns. This

analysis highlights BPCL's potential for higher profitability, albeit with more variability, and CHPCL's steady but modest returns, impacting investor confidence and financial planning strategies.

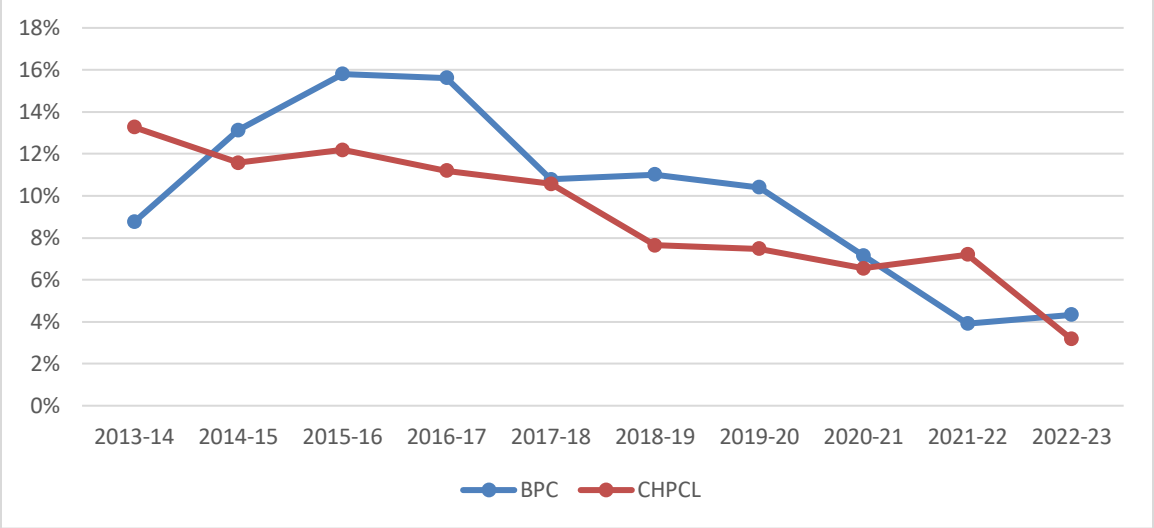


Figure 8 Return on Shareholders Ratios

4.2.4 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 9

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

Fiscal Year	**Net Profit**		**Total Assests**		**Ratio (%)**	
AD	**BPCL**	**CHPCL**	**BPCL**	**CHPCL**	**BPCL**	**CHPCL**
2013-14	285,569	939,675	4,859,043	9,451,028	5.9%	9.9%
2014-15	495,724	883,093	5,146,218	11,468,475	9.6%	7.7%
2015-16	628,496	942,467	5,214,756	13,128,769	12.1%	7.2%
2016-17	686,053	934,025	5,369,333	17,044,513	12.8%	5.5%
2017-18	702,263	921,725	7,685,592	22,800,410	9.1%	4.0%
2018-19	760,335	710,506	7,949,270	9,792,939	9.6%	7.3%
2019-20	731,284	748,059	7,866,285	10,517,251	9.3%	7.1%
2020-21	501,816	661,480	7,687,408	10,525,749	6.5%	6.3%
2021-22	274,150	746,706	7,682,810	10,852,263	3.6%	6.9%
2022-23	305,071	642,751	7,639,055	11,055,438	4.0%	5.8%
Mean (x)					8.2%	6.8%
Standard Deviation (σ)					3.0%	1.5%
Coefficient of Variation (C.V) %					36%	22%

Source: Annual Report of BPC & CHPCL

Based on the data in Table 9, which calculates the return on total assets (ROA) for Butwal Power Company Limited (BPCL) and Chilime Hydropower Company Limited (CHPCL) from fiscal years 2013-14 to 2022-23, several important insights can be observed. ROA measures how efficiently a company uses its assets to generate profit, indicating the effectiveness of management in utilizing assets. BPCL's ROA ranges from 3.6% to 12.8%, with a mean of 8.2%, suggesting that BPCL has a moderate ability to convert its assets into profits. The standard deviation of 3.0% and a coefficient of

variation (C.V.) of 36% indicate significant variability in BPCL's performance. On the other hand, CHPCL's ROA ranges from 4.0% to 9.9%, with a mean of 6.8%, reflecting a slightly lower average efficiency in asset utilization but with more stability. CHPCL's standard deviation of 1.5% and a C.V. of 22% suggest more consistent performance in generating returns from its assets compared to BPCL. These findings highlight that while BPCL achieves higher average returns on its assets, it also experiences greater fluctuations in performance. In contrast, CHPCL maintains steadier but slightly lower returns on its assets. This analysis underscores BPCL's potential for higher profitability with more variability and CHPCL's more consistent yet modest returns, impacting their overall financial strategies and investor perceptions.

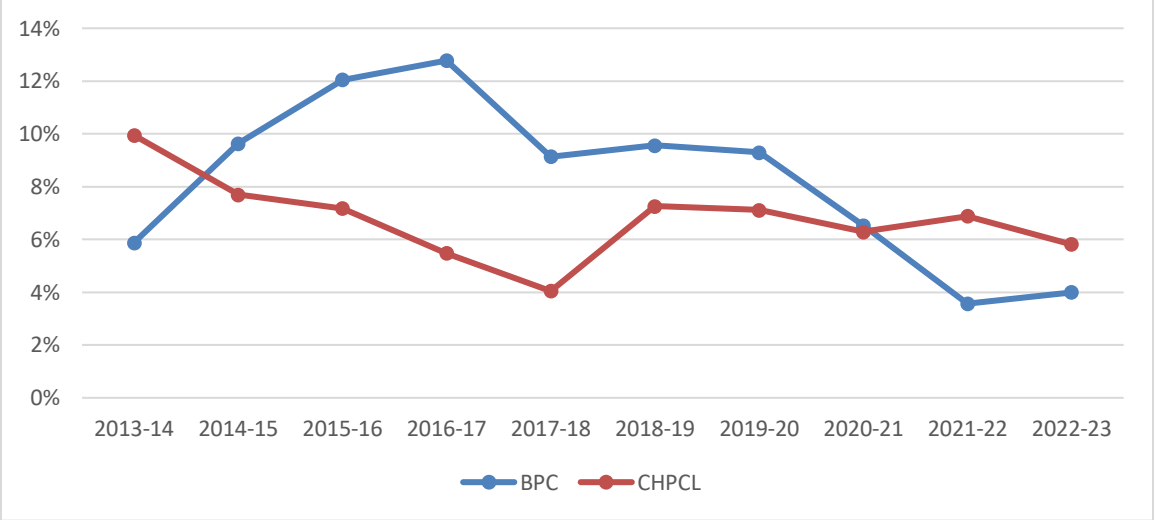


Figure 9 Return on Total Assets Ratios

4.2.5 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 10

Calculation of Earnings per Share (In Thousand NRS.)

Fiscal Year	**Net Profit After Tax**		**No. of Equity Shareholder**		**Rs.**	
AD	**BPCL**	**CHPCL**	**BPCL**	**CHPCL**	**BPCL**	**CHPCL**
2013-14	285,569	939,675	3,259,498	7,083,201	8.76	13.27
2014-15	495,724	883,093	3,774,028	7,627,195	13.14	11.58
2015-16	628,496	942,467	3,977,850	7,730,464	15.80	12.19
2016-17	686,053	934,025	4,392,459	8,348,674	15.62	11.19
2017-18	702,263	921,725	6,510,197	8,719,939	10.79	10.57
2018-19	760,335	710,506	6,901,281	9,301,023	11.02	7.64
2019-20	731,284	748,059	7,029,047	10,013,482	10.40	7.47
2020-21	501,816	661,480	7,009,391	10,104,759	7.16	6.55
2021-22	274,150	746,706	7,012,668	10,378,672	3.91	7.19
2022-23	305,071	642,751	7,032,668	20,263,300	4.34	3.17
Mean (x)					10.09	9.08
Standard Deviation (σ)					3.94	2.99
Coefficient of Variation (C.V) %					39%	33%

Source: Annual Report of BPC & CHPCL

Based on the data in Table 10, which calculates the earnings per share (EPS) for Butwal Power Company Limited (BPCL) and Chilime Hydropower Company Limited (CHPCL) from fiscal years 2013-14 to 2022-23, several significant insights can be drawn. EPS measures the amount of profit attributed to each outstanding share of common stock, indicating the profitability and financial health of a company. BPCL's EPS ranges from Rs. 3.91 to Rs. 15.80, with a mean of Rs. 10.09, suggesting moderate profitability per share with noticeable fluctuations. The standard deviation of Rs. 3.94 and a coefficient of variation (C.V.) of 39% reflect significant variability in BPCL's earnings per share over the years. In contrast, CHPCL's EPS ranges from Rs. 3.17 to Rs. 13.27, with a mean of Rs. 9.08, indicating slightly lower average profitability per share but with greater stability. The standard deviation of Rs. 2.99 and a C.V. of 33% suggest more consistent earnings per share for CHPCL compared to BPCL. These findings indicate that while BPCL achieves higher average EPS, it experiences more significant fluctuations, whereas CHPCL maintains steadier, albeit slightly lower, earnings per share. This analysis

underscores BPCL's potential for higher profitability per share with more variability, and CHPCL's more consistent but modest returns, impacting investor confidence and the overall assessment of financial performance.

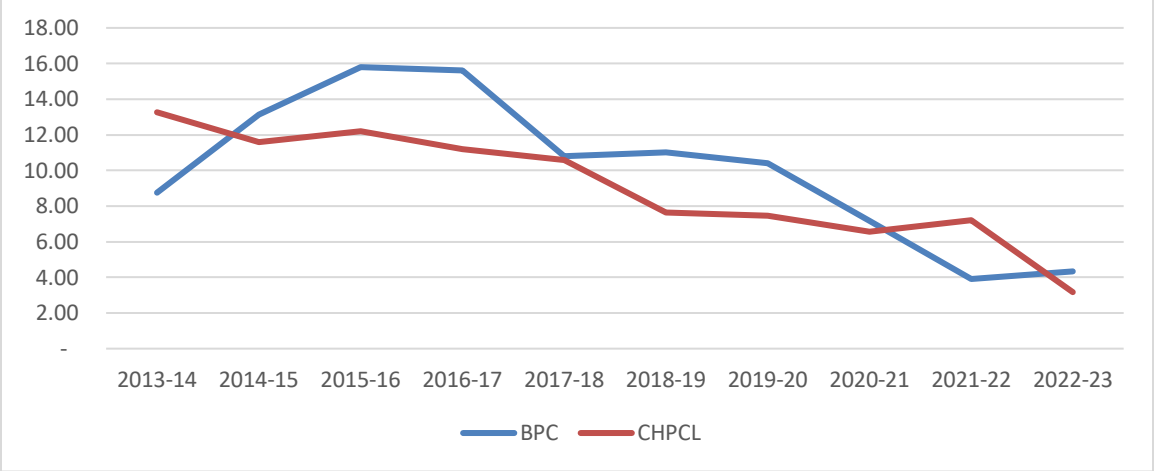


Figure 10 Earnings per Share

Figure 10 provides a graphical comparison of the Earnings per Share (EPS) of Butwal Power Company (BPC) and Chilime Hydropower Company Limited (CHPCL) during the review period and shows the differences in their financial performance and profitability. BPC's earnings per share shows an upward trend with significant highs and lows, indicating periods of significant earnings growth and simultaneous declines. This difference suggests that while BPC has faced challenges, it has generally improved its profitability over time. In contrast, CHPCL's earnings per share is more stable but on a slightly downward trend, reflecting stable performance with little volatility that may be due to rising costs or competitive pressures. The chart provides an overall picture of the difference in financial dynamics between BPC and CHPCL, showing that BPL is more volatile but bullish while a CHLP remains stable with slightly decline. This suggests that both are capable of creating shareholder value.

4.3 Trend Analysis

Table 11

Trend analysis of BPC

Indicators/Fiscal Year	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Current Ratio	1.71	1.31	1.31	1.47	7.29	3.9	6.46	9.81	6.55	5.8
Fixed Assets turnover Ratio	0.1	0.12	0.14	0.13	0.13	0.1	0.11	0.11	0.13	0.11
Total Assets Turnover Ratio	0.08	0.1	0.11	0.12	0.09	0.09	0.09	0.08	0.1	0.09
Inventory Turnover Ratio	7.1	12.76	11.44	11.03	14.81	15.97	12.71	12.7	14	12.48
Debtors Turnover Ratio	1.2	5.76	6.81	7.95	7.55	6.92	9.36	6.94	7.21	11.03
Net Profit Ratio	0.71	0.95	1.06	1.03	1.05	1.11	1.06	0.78	0.35	0.42
Operating Expenses Ratio	1.42	1.05	0.91	0.87	0.62	0.64	0.6	0.93	1.19	1.15
Return on Shareholder's Equity	0.09	0.13	0.16	0.16	0.11	0.11	0.1	0.07	0.04	0.04
Return on Assets	0.06	0.1	0.12	0.13	0.09	0.1	0.09	0.07	0.04	0.04
Earnings Per Share	8.76	13.14	15.8	15.62	10.79	11.02	10.4	7.16	3.91	4.34

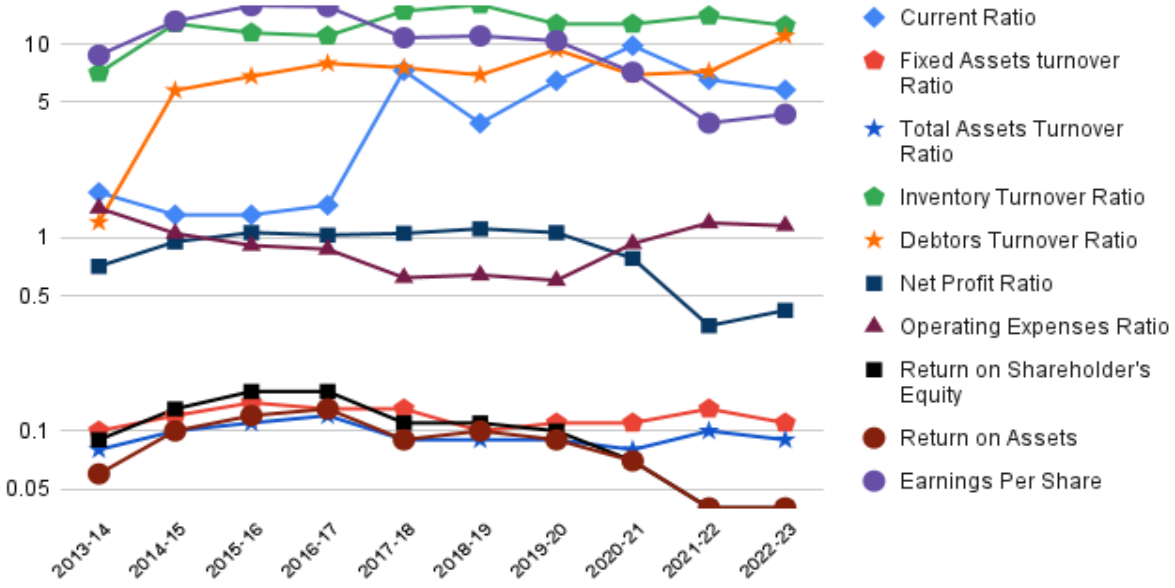
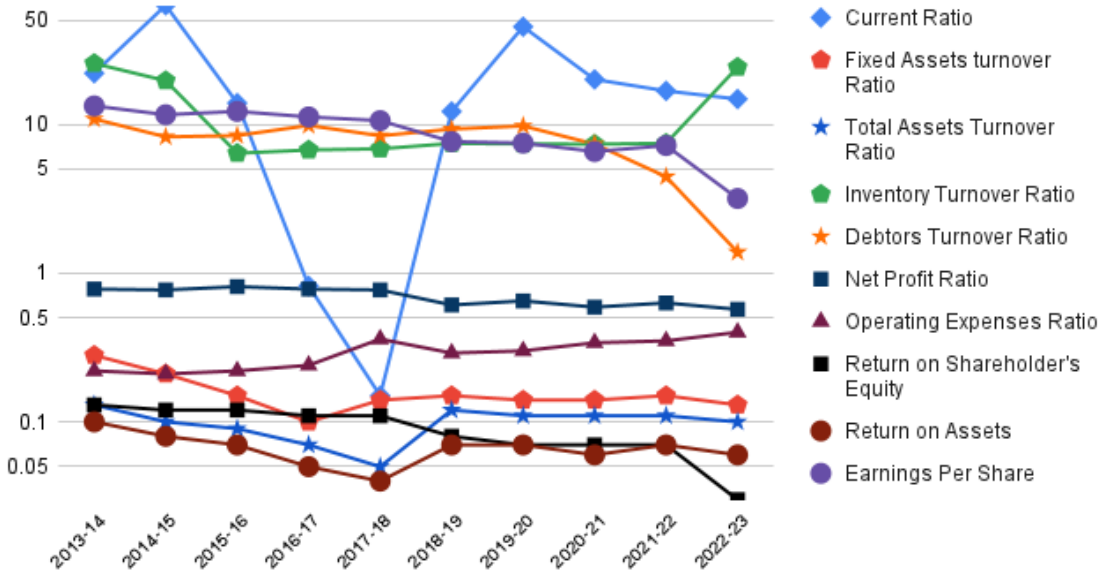


Table 12

Trend analysis of CHPCL

Indicators/Fiscal Year	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Current Ratio	22.01	62.98	13.87	0.82	0.15	12.18	45.17	19.99	16.74	14.76
Fixed Assets turnover Ratio	0.28	0.21	0.15	0.1	0.14	0.15	0.14	0.14	0.15	0.13
Total Assets Turnover Ratio	0.13	0.1	0.09	0.07	0.05	0.12	0.11	0.11	0.11	0.1
Inventory Turnover Ratio	25.6	19.6	6.38	6.71	6.83	7.43	7.37	7.34	7.44	24.15
Debtors Turnover Ratio	10.84	8.22	8.39	9.81	8.36	9.27	9.73	7.35	4.44	1.38
Net Profit Ratio	0.78	0.77	0.81	0.78	0.77	0.61	0.65	0.59	0.63	0.57
Operating Expenses Ratio	0.22	0.21	0.22	0.24	0.36	0.29	0.3	0.34	0.35	0.4
Return on Shareholder's Equity	0.13	0.12	0.12	0.11	0.11	0.08	0.07	0.07	0.07	0.03
Return on Assets	0.1	0.08	0.07	0.05	0.04	0.07	0.07	0.06	0.07	0.06
Earnings Per Share	13.27	11.58	12.19	11.19	10.57	7.64	7.47	6.55	7.19	3.17



The trend analysis of BPC and CHPCL reveals distinct financial trajectories for both companies. BPC has shown significant fluctuations in its current ratio, peaking in 2020-21, indicating periods of improved liquidity. However, its fixed assets turnover ratio and total assets turnover ratio have remained relatively stable at low levels, suggesting consistent but inefficient use of assets to generate revenue. BPC's inventory turnover ratio has generally increased, showing improved inventory management, while its debtors turnover ratio indicates enhanced efficiency in collecting receivables. Despite these improvements, BPC's net profit ratio and return on assets have experienced declines, reflecting challenges in maintaining profitability. Earnings per share also show a downward trend, indicating decreasing profitability on a per-share basis.

On the other hand, CHPCL's current ratio exhibits extreme fluctuations, with a notable peak in 2014-15, highlighting inconsistent liquidity management. The fixed assets turnover ratio and total assets turnover ratio for CHPCL have remained relatively stable, though at low efficiency levels. CHPCL's inventory turnover ratio has shown stability with a significant peak in 2022-23, suggesting better inventory management in recent years. However, its debtors turnover ratio has generally declined, indicating reduced efficiency in receivables collection. The net profit ratio for CHPCL has remained relatively stable, but the operating expenses ratio has increased, pointing to higher

operating costs relative to sales. Both the return on shareholders' equity and return on assets have declined, reflecting decreasing returns and efficiency. Earnings per share for CHPCL have also shown a downward trend, indicating diminishing profitability.

Overall, BPC demonstrates improvements in liquidity and inventory management but faces challenges in maintaining profitability and efficient asset utilization. CHPCL, while showing better inventory management recently, struggles with liquidity and increasing operating expenses. Both companies need to focus on enhancing their asset utilization and profitability to achieve sustainable financial health.

Considering the overall trends, BPC appears to be in a better position than CHPCL in terms of liquidity and receivables collection efficiency. Despite its challenges with profitability and asset utilization, BPC's improvements in managing short-term financial health and inventory indicate a more stable operational foundation. In contrast, CHPCL's inconsistent liquidity management and rising operating costs present significant challenges, even though its profitability has remained relatively stable.

Therefore, based on these trends, BPC is comparatively better positioned than CHPCL, particularly in terms of liquidity and operational management. However, both companies need to focus on specific areas of improvement to achieve sustainable financial health and long-term success.

4.4 Major Finding of the study

i. BPCL's current ratio ranges from 1.31 to 9.81 with a mean of 4.56, indicating moderate liquidity with moderate fluctuations (C.V. of 63%), while CHPCL's current ratio ranges from 0.15 to 62.98 with a mean of 20.87, indicating higher average liquidity but significant inconsistency (C.V. of 88%). Findings suggest BPCL maintains more stable liquidity, whereas CHPCL's high variability impacts its financial flexibility and operational stability.

ii. BPCL's fixed assets turnover ratio ranges from 0.097 to 0.138 with a mean of 0.12, showing moderate efficiency with stable performance (C.V. of 12%), while CHPCL's ratio ranges from 0.097 to 0.278 with a mean of 0.16, indicating better

overall efficiency but greater variability (C.V. of 30%), suggesting CHPCL is more efficient in generating sales from fixed assets but with more fluctuations compared to BPCL.

iii. Both BPCL and CHPCL have a mean total assets turnover ratio of 0.10, indicating each generates 0.10 NRS in sales per 1 NRS of assets. BPCL shows stable performance with a C.V. of 14%, while CHPCL shows more variability with a C.V. of 22%, suggesting similar average efficiency in asset utilization, but CHPCL's performance is less consistent.

iv. BPCL's inventory turnover ratio ranges from 7.101 to 15.967 with a mean of 12.50, indicating efficient inventory management with stable performance (C.V. of 18%), while CHPCL's ratio ranges from 6.380 to 25.598 with a mean of 11.88, showing similar average efficiency but higher variability (C.V. of 63%), suggesting BPCL has more consistent inventory management compared to CHPCL.

v. BPCL's debtors turnover ratio ranges from 1.203 to 11.028 with a mean of 7.07, indicating moderate efficiency in collection practices with significant variability (C.V. of 34%), while CHPCL's ratio ranges from 1.380 to 10.842 with a mean of 7.78, showing similar efficiency but with more variability (C.V. of 35%), suggesting both companies have comparable average efficiency in managing debtors but experience considerable fluctuations.

vi. BPCL's net profit ratio ranges from 35.4% to 111.3% with a mean of 85%, indicating high profitability with moderate variability (C.V. of 31%), while CHPCL's net profit ratio ranges from 56.9% to 81.0% with a mean of 70%, showing slightly lower but more stable profitability (C.V. of 13%). Findings suggest BPCL achieves higher average profitability with more fluctuations, while CHPCL maintains steadier profitability levels.

vii. BPCL's operating expenses ratio ranges from 60.2% to 142.1% with a mean of 94%, indicating higher operating costs relative to sales with considerable variability (C.V. of 27%), while CHPCL's ratio ranges from 21.4% to 39.9% with a mean of 29%, showing more efficient and stable control over operating expenses (C.V. of 22%). Findings suggest BPCL needs to improve operational

efficiency, while CHPCL maintains more efficient control over operating expenses.

viii. BPCL's ROE ranges from 3.9% to 15.8% with a mean of 10%, indicating moderate profitability with significant variability (C.V. of 39%), while CHPCL's ROE ranges from 3.2% to 13.3% with a mean of 9%, showing similar profitability with more stability (C.V. of 33%). Findings suggest BPCL has higher potential profitability but more fluctuations, while CHPCL maintains steady returns.

ix. BPCL's ROA ranges from 3.6% to 12.8% with a mean of 8.2%, indicating moderate ability to convert assets into profits with significant variability (C.V. of 36%), while CHPCL's ROA ranges from 4.0% to 9.9% with a mean of 6.8%, showing slightly lower efficiency in asset utilization but with more stability (C.V. of 22%). Findings highlight BPCL's higher profitability potential with more variability, while CHPCL maintains steadier returns.

x. BPCL's EPS ranges from Rs. 3.91 to Rs. 15.80 with a mean of Rs. 10.09, indicating moderate profitability per share with noticeable fluctuations (C.V. of 39%), while CHPCL's EPS ranges from Rs. 3.17 to Rs. 13.27 with a mean of Rs. 9.08, showing slightly lower profitability per share but with greater stability (C.V. of 33%). Findings suggest BPCL achieves higher average EPS with more significant fluctuations, while CHPCL maintains steadier earnings per share.

xi. BPC has shown significant improvements in its current ratio, peaking in 2020-21, indicating better liquidity management. In contrast, CHPCL exhibits extreme fluctuations in its current ratio, highlighting inconsistent liquidity management.

xii. Both companies have stable but low fixed assets turnover and total assets turnover ratios, suggesting inefficient use of assets to generate revenue.

xiii. BPC has improved its inventory turnover and debtors turnover ratios, indicating better inventory management and enhanced efficiency in collecting receivables. CHPCL has shown stable inventory management recently but declining efficiency in receivables collection.

xiv. BPC faces challenges in maintaining profitability, with declining net profit ratio, return on assets, and earnings per share. CHPCL's net profit ratio remains stable,

but rising operating expenses indicate higher costs relative to sales, leading to declining profitability.

xv. Both companies have seen declines in return on shareholders' equity and return on assets, indicating decreasing efficiency in generating returns and utilizing assets.

xvi. BPC is better positioned than CHPCL in terms of liquidity and receivables collection efficiency. However, both companies need to enhance asset utilization and profitability to achieve sustainable financial health and long-term success.

CHAPTER FIVE

SUMMARY, CONCLUTION AND RECOMENDATION

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

a) Background and objective

This thesis begins with an exploration of Nepal's hydropower sector, highlighting the challenges posed by high infrastructure costs in remote areas and the strategic importance of developing trunk highways and transmission lines. It introduces Butwal Power Company Ltd (BPC) and Chilime Hydropower Company Ltd (CHPCL) as pivotal players in Nepal's energy landscape, emphasizing their roles in advancing hydropower development and contributing to rural electrification. The study focuses on evaluating the financial performance of BPC and CHPCL, aiming to fill research gaps in understanding financial dynamics within Nepal's hydropower industry. By analyzing key financial indicators such as liquidity, profitability, and solvency, the research seeks to provide insights for stakeholders and policymakers, supporting informed decision-making and sustainable development in Nepal's energy sector.

b) Research Methodology

The research methodology adopts a systematic approach to investigate these companies' financial dynamics over a ten-year period, from fiscal year 2013/14 to 2022/23. It employs both descriptive and analytical research designs to conceptualize and analyze the data extracted from their published financial statements. The study primarily relies on secondary data sourced from annual reports and relevant websites, emphasizing a detailed comparative analysis using key financial tools such as ratio analysis. By examining

liquidity ratios, activity ratios, profitability ratios, and statistical measures like arithmetic mean and standard deviation, the research aims to provide comprehensive insights into how these companies manage their financial resources and perform within Nepal's evolving energy landscape. This approach not only contributes to the academic understanding of hydropower finance but also informs stakeholders and policymakers about sustainable strategies for the sector's growth and development.

c) Finding

The analysis begins with liquidity ratios, where BPCL shows moderate stability in its current ratio, ranging from 1.31 to 9.81 with a mean of 4.56, indicating generally sufficient current assets to cover liabilities. In contrast, CHPCL exhibits higher average liquidity (mean 20.87) but with significant variability (C.V. 88%), impacting its financial flexibility.

Moving to efficiency ratios, BPCL demonstrates moderate efficiency in utilizing fixed assets (mean FATOR 0.12) with stable performance, while CHPCL shows better efficiency (mean FATOR 0.16) but with greater fluctuations (C.V. 30%). Both companies have similar average efficiency in total assets turnover, though CHPCL experiences more variability.

Regarding profitability, BPCL achieves higher average net profit margins (mean NPR 85%) with moderate variability (C.V. 31%), while CHPCL maintains slightly lower but more stable profitability (mean NPR 70%, C.V. 13%). Operational expenses are higher for BPCL (mean OER 94%) with significant variability (C.V. 27%), whereas CHPCL demonstrates better control over expenses (mean OER 29%, C.V. 22%).

Return on equity and return on assets highlight BPCL's potential for higher profitability with more variability compared to CHPCL's steadier returns. Earnings per share also reflect BPCL's higher average earnings with greater variability, while CHPCL shows more stable earnings per share despite lower averages.

In conclusion, while BPCL generally shows higher potential profitability and efficiency in asset utilization, it faces greater variability in its financial performance compared to the more stable but slightly lower-performing CHPCL. Both companies need to focus on enhancing stability and efficiency to ensure sustained financial health and investor confidence.

5.2 Conclusions

The comparative financial analysis of Butwal Power Company Limited (BPCL) and Chilime Hydropower Company Limited (CHPCL) spanning fiscal years 2013-14 to 2022-23 reveals insightful trends and challenges within Nepal's energy sector. BPCL exhibits commendable stability in liquidity and profitability metrics, albeit with fluctuations in asset management efficiency and operational costs. Conversely, CHPCL demonstrates robust profitability and efficient cost management strategies, although it faces variability in liquidity and asset turnover. Both companies exhibit strengths in different areas, suggesting diverse paths for future growth and sustainability. Moving forward, BPCL should focus on enhancing asset utilization and controlling operational costs to bolster financial resilience, while CHPCL should prioritize improving liquidity management and maintaining steady profitability to sustain investor confidence and foster long-term growth in Nepal's dynamic energy market.

5.3 Recommendation

Based on the conclusions drawn from the financial analysis, the following recommendations are proposed:

1. **Operational Efficiency**: BPCL should focus on improving its operational efficiency to reduce variability and high operating costs. This could involve adopting more stringent cost control measures and optimizing resource allocation.
2. **Liquidity Management**: Both companies should aim to enhance their liquidity management strategies to maintain a balance between sufficient liquidity levels and operational stability. CHPCL, in particular, should address the variability in its liquidity ratios.

3. **Profitability Enhancement**: BPCL should implement strategies to stabilize its profitability, such as diversifying revenue streams and improving cost management practices. CHPCL can work on increasing its profitability while maintaining its stability.
4. **Investment in Infrastructure**: To reduce project costs and enhance competitive advantages, both companies should advocate for the development of trunk highways and high voltage transmission lines in Nepal's major river valleys.
5. **Stakeholder Engagement**: Increasing stakeholder engagement, including local communities and private sectors, can contribute to more collaborative and sustainable project development. This approach can also facilitate the successful implementation of medium and large-scale hydroelectric projects.
6. **Policy Support**: Continuous advocacy for supportive policies and a favorable investment climate is essential for the sustainable growth of the hydropower sector in Nepal. Both companies should engage with policymakers to ensure conducive regulatory frameworks.

By addressing these recommendations, BPCL and CHPCL can enhance their financial performance, contributing to the overall development and sustainability of Nepal's hydropower sector.

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vii 1) CHAPTER-1 2) INTRODUCTION 3) 1.1 Background of the Study Hydropower projects in Nepal have traditionally been considered expensive due to the significant costs associated with access roads and power evacuation transmission lines. These costs are compounded by the fact that most of the viable hydropower sites are situated in remote mountainous areas. Before any project can commence, there is a need to construct access roads to these remote sites, which adds substantial costs to the overall project budget. Additionally, the high voltage power evacuation systems required to transport the generated electricity further increase the expenses, making the power from these projects comparatively expensive. This high cost can undermine the competitive edge of hydropower compared to other energy sources in the market. To address this challenge, it is crucial for the Government of Nepal, along with donor agencies and multilateral lending institutions, to focus on the development of trunk highways in the major river valleys of Nepal. By constructing these highways, access to remote hydropower sites would be significantly improved, reducing the overall project costs. Furthermore, developing high voltage transmission lines in these river valleys would facilitate the efficient evacuation of power from these projects. This strategic infrastructure development would open up the river valleys for private power producers to develop projects around these rivers and their tributaries, resulting in less expensive power generation and enhancing the competitive advantages of clean energy. The private sector is increasingly playing a vital role in economic activities related to power project development. There is a strong belief that the private sector should have a greater influence in governmental decision-making processes, especially on national economic issues and bilateral and multilateral matters that have a direct impact on the