IMPACT OF CAPITAL STRUCTURE PROFITABILITY OF HYDROPOWER IN NEPAL

A Dissertation submitted to the Office of the Dean, Faculty of Management in partial fulfilment of the requirements for the Master's Degree

By

Ramesh Kumar Pandey

Roll No:11788/10

Registration No:7-2-266-135-2014

Nepal commerce campus

May, 2022

Certification of Authorship

I hereby corroborate that I have researched and submitted the final draft of dissertation entitled "**Impact of capital structure on profitability of hydropower in Nepal**". The work of this dissertation has not been submitted previously for the purpose of conferral of any degrees nor it has been proposed and presented as part of requirements for any other academic purposes.

The assistance and cooperation that I have received during this research work has been acknowledged. In addition, I declare that all information sources and literature used are cited in the reference section of the dissertation.

Name: Ramesh Kumar Pandey

Signature

23 May, 2022

Recommendation

This is to that the dissertation

Summited by

Ramesh Kumar Pandey

Entitled

IMPACT OF CAPITAL STRUCTURE PROFITABILITY OF HYDROPOWER IN NEPAL

has been prepared as approval by this department in the prescribed format of the faculty of management. This dissertation forward for examination.

……	…….
Madan Kandel	Assoc. Prof. Dr. Jitendra Prasad Upadhyay
(Dissertation Supervisor)	(Head of Research Department)

…….

Prof. Dhruba Prasad Silwal

(Campus Chief)

Date

Report of Research Committee

Mr. Ramesh Kumar Pandey has defended research proposal entitled "**Impact of capital structure on profitability of hydropower in Nepal**" successfully. The research committee has registered the dissertation for further progress. It is recommended to carry out the work as per suggestions and guidance of supervisor Madan Kandel and submit the thesis for evaluation and viva voce examination.

Madan Kandel

Signature:……

(Dissertation Supervisor)

Dissertation Proposal Defended Date:

……..

Madan Kandel

Signature: ……

(Dissertation Supervisor)

Dissertation Submitted Date:

……..

Assoc. Prof. Dr. Jitendra Prasad Upadhyay Signature: ……

(Head of Research Department)

Dissertation Viva Voce Date:

…….

Approval Sheet

We have examined the dissertation entitled "**Impact of capital structure on profitability of hydropower in Nepal**" presented by Mr. Ramesh Kumar Pandey for the degree of Master of Business Studies. We hereby certify that the dissertation is acceptable for the award of degree.

……..……..…

Madan Kandel

(Dissertation Supervisor)

……

Internal Examiner

…….……..

External Examiner

…….……

Assoc. Prof. Dr. Jitendra Prasad Upadhyay

(Head of Research Department)

Acknowledgements

The research project entitled "**Impact of capital structure on profitability of hydropower in Nepal**" has been prepared to fulfill the partial requirement for the MBS degree course of Tribhuvan University. I would like to express my gratitude towards each and every individual who have supportive helping hands for the completion of thesis work. Without whom, it is not possible anyways.

I would like to express sincere thanks to my supervisor Madan Kandel for their very supportive and kind behavior as and when I need help. His guidance for this work is incredible, without which it would not be success. Similarly, I also would like to express my gratitude to 'campus chief' Prof Duruba Prasad Silwal and chairman of the research committee Dr. Jitendra Prasad Upadhyay.

Similarly, I am indebted to my parents for their entire support and help for my higher education and I am very much thankful to all my family members for their regular support for my higher education. I am thankful to all my relatives for their regular support.

Ramesh Kumar Pandey

Nepal Commerce Campus

Tribhuvan University, Kathmandu, Nepal

Table Content

List of Table

List of figure

Abbreviation

AHPC = Arun vally hydropower company

API = API power company

B = Value od debt

BARUN = Barun hydropower company

BPCL = Butwal power company

EBIT = Earning before interest and tax

EPS = Earning per share

FY = Fiscal year

Kd = Cost of debt

Kdt = Cost of debt after tax

Ke = cost of equity

Ks = Cost of equity

MM = Modigliani and miller

MW = Megawatt

NEPSE = Nepal stock exchange Ltd

NI = Net income apporch

NIM = Net interest margin

NOI = Net operating apporch

ROE = Return on equity

ROA = Return on assets

r = coefficient of correlation

S = Value of stock

S.D. = standard devisition

V = Value of firms

WACC = Weighted average cost of capital

Abstract

This research aims to examine the impact of capital structure in profitability of Nepalese hydropower, impact of cost of capital in profitability of Nepalese hydropower and relationship between cost of capital and value of firm of selected five hydropower listed in NEPSE. APHC, BPCL, BARUN, SHPC and API. This study consider descriptive and correlational research design are used to find the result. This study consider annual reports for statistical analysis data analysis has conducted by collecting data from the annual report and analysis including correlation and regression by use of SPSS data are collect from website of hydropower company and NEPSE website and publication as well. The study has consider FY 2016/17 to FY 2020/21. In this study capital structure and cost of capital are independent variable and profitability, value of firms are dependent variable. The debt ratio, debt equity ratio has negative relationship between ROA, ROE, net profit margin of hydropower in Nepal. Debt ratio, debt equity ratio has no significant impact on ROE, ROA, net profit margin hydropower in Nepal. cost of equity and cost of debt have positive impact on ROE, ROA and negative impact on net profit margin hydropower in Nepal. WACC have negative impact on ROA, ROE and positive impact on net profit margin hydropower in Nepal. Cost of debt, cost of equity and WACC have negative relationship with value of debt hydropower in Nepal. Cost of debt, cost of equity and WACC have no significant relationship with value of equity hydropower in Nepal. Cost of debt, cost of equity and WACC have no significant relationship with total value of firms hydropower in Nepal.

Chapter I

Introduction

1.1 Background of the study

The capital structure decision is crucial for business organizations. The capital structure decision is important because of the need to maximize returns of the firms, and because of the impact, such a decision has on the firm's ability to deal with its competitive environment. The capital structure of a firm is a mixture of different securities. In general, firms can choose among many alternative capital structures. The capital structure For example, firms can arrange lease financing, use warrants, issue convertible bonds, sign forward contracts or trade bond swaps. Firms can also issue dozens of distinct securities in countless combinations to maximize overall market value (Abor, 2005).

According to Gerstenberg "capital structure refers the make upon firm's capitalism". In other words Capital structure refers to the composition of long term funds such as debenture, long borrowings, preference share and equity share in the capitalization of a company. The essence of capital structure decision is to determine the relative proposition of equity and debt. Equity here in broader sense means owner's funds which can be raised by issue of equity shares and preference share and by retained earnings. Debts can be raised by issuing debenture or bonds by taking long term borrowings. The capital structure decisions a significant financial decision because it affects the shareholder's return and risk and consequently the market value of share.

Capital structure is used to refer to the mix of long term source of capital. Long term debt and equity capital are the long term source of capital (Paudel et al., 2016).

Capital structure refers to the source of the long term fonds. Capital structure represents the relationship of different kind of long term source of capital and their amount. a firm raise the long term capital through the issue common share, preference share and debt (Thapa,2016).

Capital structure refers to the source of long -term fund. capital structure represents the relationship of different kinds of long-term source of capital and their amount a

firm raise long-term capital through the issue of common share, preference shares and debt (Sharma et al, 2016).

The term capital structure is used to represent the proportionate relationship between debt and equity. Equity includes paid-up share capital, share premium and reserve and surplus. The company will have to plan its capital structure initially at the time of its promotion. Subsequently, whenever funds have to be raised finance investment, a capital structure decision is involved. Capital structure of a company refers to the mix of sources from where the long-term funds required in the business may be raised. A demand for raising funds generates a new capital structure a decision has to be made to the quantity and forms of financing. This decision will involve an analysis of the existing capital structure and the factors, which will govern the decision at present. The company's policies to retain or distribute earnings affect the owner's claim. Shareholder's equity position is strengthened by retention of earning. The debt equity mix has implications for the shareholder's earnings and risk, which in turn will affect the cost of capital and the market value of the firm (MBA Knowledge Base, 2021).

The capital structure plays an important role in the success of business entity. Capital Structure decision is crucial for any business organization as it plays important role in maximizing firm value and performance of a firm. Capital structure decision has also impact on the firm's ability to deal with competitive advantage. Every firm have their own capital structure design because they differ in financing decision and taking capital structure decision is tough work too as sometimes using higher level of debt is beneficial and sometimes higher equity is beneficial. Hence it should be design in a proper manner so that the cost is minimized and value of the firm is maximized. Optimum Capital Structure is that structure where overall cost of capital is minimum and value of the firm is maximum.

It is the best debt to equity ratio that maximizes the firm's value. It offers a balance between the ideal debt to equity range and minimize the firms cost of capital. This structure seeks to lower the cost of capital so that firm is less dependent on creditors and more able to finance its core operation. Weighted average cost of capital has to be calculated to determine the level of risk that makes the expected return on capital greater than the cost of capital (Lamichhane,2019)

1.1.1 Profitability

All the business concern is doing business to earn a profit. The profit earned by the firm indicates the efficiency of business. The higher amount of profit, the higher is the efficiency of business concern. The profit of a business can be measured & examining the profitability of investments attain by the business. Profitability means “an ability or capacity to make profit from all the activities of an organization, firm, company or an enterprise.” It indicated that how a management is using their available resources in the market efficiently and effectively to earn profit. (Vyas, 2021)

B.B.Howod and M.Upton observed that “ The word profitability may be defined as the ability of an investment to earn to return on its use. Thus profitability is the ability of an organization to earn profits in other words, profitability is a composite concept relating the efficiency of an organization to earn profit.

W. M. Harper - Profitability is a relative measure, It indicates the most profitable alternative. Profit on other hand, is an absolute measure, it indicates the overall amount of profit earned by a transaction. Very high profit does not always indicate a sound organizational efficiency and low profitability is not always a sign of organizational sickness.

The relationship between capital structure and profitability cannot be ignored because improvement in the profitability is necessary for the long-term survivability of the firm. Because interest payment on debt is tax deductible, the addition of debt in the capital structure will improve the profitability of the firm. Therefore, it is important to test the relationship between capital structure and the profitability of the firm to make sound capital structure decisions. (Gill et al., 2011)

1.1.2Hydro power in Nepal

Hydro comes from the Greek word 'hydra', meaning water. It is the electricity produced by the movement of fresh water from rivers and lakes. Also called hydropower, it is a renewable energy source dependent upon the hydrologic cycle of water, which involves evaporation, precipitation and the flow of water due to gravity. Gravity causes water to flow downwards and this downward motion of water contains kinetic energy that can be converted into mechanical energy, and then from mechanical energy into electrical energy. At a good site, hydropower can generate

very cost effective electricity. The history of conversion of kinetic energy into mechanical energy dates back to two thousand years ago in ancient Greece when wooden waterwheels were used. Hydropower represents an important source of energy, accounting for one-fifth of the world's electricity supply. Most of the technically and economically feasible hydropower potential has been exploited in the developed countries and the developing countries, too, realizing the significance of this source of power for the higher sustained economic growth and development of their respective economies, have been embarking on the various phases of the hydropower development process.

There are more than 6000 rivers with total reach length of 45000km flowing in Nepal. They occupy about 3.9% of total land of Nepal. The snowy mountains of glacier lakes are also our major water resource. This make Nepal be the second richest country in water resource in the world. Nepal contain 2.27% water of the total resource in the world. Due to such resource we have huge potential for hydropower production which is theoretical to be 83000mw out of this 42000mw of hydroelectricity is feasible economically and technically.

The Pharping hydropower plant (500 kw) has been established as the first hydropower in Nepal in 1911 A.D. by PM Chandra shamsher. It was also the second hydropower plant in Asia. The second hydropower plant of Nepal was the Saundanjal hydropower plant of capacity of 640 kw. There after different hydropower project have been established in Nepal. Total installed capacity of hydroelectricity serves is 1233 MK. Economic survey 2076/77 90% of population of Nepal access to electricity.

The government of Nepal has adopted hydropower development policy 2058 in order to make power legislation for development of hydropower in Nepal. Most of the hydropower project in Nepal are owned by Nepal electricity authority.

1.1.3 Profile of selected hydropower company

I. Arun vally hydropower development company

Arun vally hydropower development company was established on 12th march 1998 under company act of Nepal. AHPC has develop and built 3000 kw Piluwakhola small hydropower project as its first project in sankhuwasara district of koshi zone Nepal. To make general public participation the company converted

into public limited company from the private limited company 20th august 2009. The company authority capital is 1050 million. APHC has stored to developed and construed Kabeli B-1, HEP (25 MW). According to annual report 2021 A.D. the total capital is Rs 18,061,922,989 in the total capital share capital is Rs 1,572,359,100, share premium Rs 132,280,650 and reserve and surplus Rs 101,553,239. Long term loan is Rs 556.546,829 and short term loan Rs 569,500,582.

II. Buran hydropower company

Barun hydropower company is a limited liability company registered under company act 2063 with authorized capital of Rs 60 crores. It is has a paid up capita 26.79 crores. The company was established in 2060 with the mission to develop, own and operate hydro electric project and convert it into public limited in 2066. The company has in operation of 4.5 MW Hydroelectricity project know as Hewakhola Hydro power project at Sankhuwashava district. According annual report 2021 A.D. the total equity is Rs 272,932,232 in total equity share capital is Rs 267,905,500 and reserve and surplus is Rs 5,024,732. Long term debt is Rs 220,286,808 and short term debt Rs 2,500,000.

III. Butwal power company

Butwal power company was established in 1965.Government of Nepal handed over majority of its ownership and management control of BPC to private investment on public investment public private participant model. BPC is registered with security board of Neapl and listed in Nepal stock exchange.

Starting with electrification of small city Butwal with through the development of 1 MW tinak project. BPC owns and operates 9.4 MW Andhikhola. BPC owns majority stake in 4 MW khubi hydropower plant 30 MW Naydi hydropower project and 37.6 MW kabli-A hydroelectricity project. According annual report 2021 A.D total capital is Rs 7,009,391,104. Short term debt is Rs 110,069,324 and short -term debt Rs 48,882,136.

IV. API power company

API power company pvt. ltd. was established in 2060.the company converted into public company on 2070.the main objective of the company is to generate

electricity through utilization of water and renewable resource. The hydroelectricity project of API is Naugarh gad small hydroelectricity project 8.5 MW Upper Naugard gad small hydroelectricity project 8 MW and upper chameliya hydroelectric project 40 MW and invest in solar project. According to annual report 2021A.D the company total capital is Rs 2,755,139,535

In the total capital share capital is 2,475,196,250, reserve and surplus Rs 127,853,462 and share premium 152,089,823. The long term debt of the company Rs 3,010,369,763, short term debt and other liability is Rs 172,173,598.

V. Sanima mai hydropower Limited

Sanima mai hydropower Limited (SHPC) is a public limited company which was established as a special purpose vehicle company in 2065 for the development and operation of 22 MW Mai hydropower project (MHP) and 7 MW Mai Cascade hydropower project. Both the project operated by SMHL is located in Mai municipality, Ilaam. SMHL was converted to public limited company from 2068. According annual report 2021A.D the company total equity Rs 3,488,645,571 in the total equity share capital Rs 2,808,410,000 and retained earning is Rs 674,041,580. Long term debt is Rs 1,713,412,048 and short term debt is 267,021,534.

1.2 Problem of statement

Capital structure is an importance factor by which a business can increase its performance. The capital structure of a firm is mix of debt and equity that firm can use either debt or equity capital of finance their assets. Company face question new finance is raise from debt or equity. The company selection between financing instrument at a given time to attain optimal profitability.

Capital structure has it impact on the cost of capital, which influences investment decision of a firm. Capital may also influence the operating, besides it influence on the earning available to shareholders. Different theory are developed in capital structure such as net income approach , traditional approach ,net operating income approach and M-M approach . Capital structure is aimed at higher rate of return on capital at lower average cost of capital. Cost of capital also impact on the value of firm.

Gill, Biger, Matur (2011) show a positive relationship between short term debt to total assets and profitability, long term debt to total assets and profitability. Abro (2005) the effect of capital structure on profitability it shows the significant positive relation between ratio of short -term debt to total assets and ROE. However, a negative relationship between ratio on long term-debt to total assets and ROE.

Shubita and Alwath (2012) relationship between capital structure and profitability it show the significantly negative relation between debt and profitability. Jlatha (2019) capital structure and its impact on profitability of pharmaceuticals company in India it shows there is no significant effect on capital structure on profitability of selected pharmaceuticals company. The main problem of the study is impact of capital structure on the profitability of Nepalese hydropower.

This study aims to answer the following research question:

I. What is the impact capital structure on profitability of Nepalese hydropower?
II. What is the impact of cost of capital on profitability of Nepalese hydropower?
III. What is relationship between cost of capital and value of firm?

1.3 Objective of study

The general objective of the study is examine the impact of capital structure on profitability of Nepalese hydropower. The special objective of the study are as follows:

I. To examine the impact of capital structure in profitability of Nepalese hydropower.
II. To examine the impact of cost of capital in profitability of Nepalese hydropower.
III. To examine the relationship between cost of capital and value of firm.

1.4 Hypotheses

The following hypothesis can be formulated for the study:

H0: There is no significant impact of capital structure on profitability selected hydropower.

H1: There is significant impact of capital structure on profitability selected hydropower.

H0: There is no significant impact of cost of capital on profitability selected hydropower.

H1: There is significant impact of cost of capital on profitability selected hydropower.

H0: There is no significant relationship with cost of capital and value of firms.

H1: There is significant relationship with cost of capital and value of firms.

1.5 Rational of study

This study will be helpful to the companies to overview their capital structure management and to formulate future strategies to do much better in their horizon. Not only to the sampled companies, this study will also be beneficial to the other companies in the population.

Further, the concerned scholars, academicians, investors, professionals may also be benefited from this study. This study will also help to inform the decision makers about the importance of capital structure management for their further success.

In Nepal, there are very little amount of researches and studies to go through regarding capital structure and its influence on firm's performance in case of hydropower companies. It is important for the financial managers to make decisions regarding the investment or application or recruitment of the capital fund of or for the company as it determines the capital structure of the company. Capital structure is one of the important aspects of the company since it affects the company's profitability and determines the survival of the company in a long run.

The findings and recommendations of this research help the investor in making proper investment decisions. It also helps the financial managers to make important strategic decision on the debt-equity mix of the company. Academically, it makes a value addition for the researchers as it would serve as base of further research on capital structures and its impact on profitability of the hydropower companies.

The result of this study provides financial guidance to managers, business consultants and investors with the necessary techniques of combining debt and equity and being able to maximize company performance.

1.6 Limitations of study

The following limitations are pointed out in this study impact of capital structure on profitability of hydropower in Nepal.

I. There are total forty hydropower companies listed on NEPSE out of which only five hydropower companies are selected.
II. This study mainly conducted on the basis of secondary data. Therefor the generalization of finding depends upon truthfulness of secondary data.
III. This study covered and analysis only seven years data from FY 2016/17to FY 2020/21.

Chapter II

Literature Review

2.1 Conceptual and empirical review of concept, theories, report and paper

2.1.1 Conceptual and empirical review of concept

capital structure

The capital structure decision is crucial for business organizations. The capital structure decision is important because of the need to maximize returns of the firms, and because of the impact, such a decision has on the firm's ability to deal with its competitive environment. The capital structure of a firm is a mixture of different securities. In general, firms can choose among many alternative capital structures. The capital structure For example, firms can arrange lease financing, use warrants, issue convertible bonds, sign forward contracts or trade bond swaps. Firms can also issue dozens of distinct securities in countless combinations to maximize overall market value (Abor, 2005).

The capital structure plays an important role in the success of business entity. Capital Structure decision is crucial for any business organization as it plays important role in maximizing firm value and performance of a firm. Capital structure decision has also impact on the firm's ability to deal with competitive advantage. Every firm have their own capital structure design because they differ in financing decision and taking capital structure decision is tough work too as sometimes using higher level of debt is beneficial and sometimes higher equity is beneficial. Hence it should be design in a proper manner so that the cost is minimized and value of the firm is maximized. Optimum Capital Structure is that structure where overall cost of capital is minimum and value of the firm is maximum.

It is the best debt to equity ratio that maximizes the firm's value. It offers a balance between the ideal debt to equity range and minimize the firms cost of capital. This structure seeks to lower the cost of capital so that firm is less dependent on creditors and more able to finance its core operation. Weighted average cost of capital has to be calculated to determine the level of risk that makes the expected return on capital greater than the cost of capital (Lamichhane,2019).

Capital structure is used to refer to the mix of long- term source of capital. Long term debt and equity capital are the long term source of capital (Paudel et al., 2016)

Capital structure refers to the source of the long -term fonds. Capital structure represents the relationship of different kind of long -term source of capital and their amount. a firm raise the long term capital through the issue common share, preference share and debt (Thapa,2016).

Capital structure refers to the source of long -term fund. capital structure represents the relationship of different kinds of long-term source of capital and their amount a firm raise long-term capital through the issue of common share, preference shares and debt. (Sharma et al.,2016).

The term capital structure is used to represent the proportionate relationship between debt and equity. Equity includes paid-up share capital, share premium and reserve and surplus. The company will have to plan its capital structure initially at the time of its promotion. Subsequently, whenever funds have to be raised finance investment, a capital structure decision is involved. Capital structure of a company refers to the mix of sources from where the long-term funds required in the business may be raised. A demand for raising funds generates a new capital structure a decision has to be made to the quantity and forms of financing. This decision will involve an analysis of the existing capital structure and the factors, which will govern the decision at present. The company's policies to retain or distribute earnings affect the owner's claim. Shareholder's equity position is strengthened by retention of earning. The debt equity mix has implications for the shareholder's earnings and risk, which in turn will affect the cost of capital and the market value of the firm (MBA Knowledge Base, 2021).

According to Gerstaendberg "capital structure refers the make upon firm's capitalism". In other words Capital structure refers to the composition of long term funds such as debenture, long borrowings, preference share and equity share in the capitalization of a company. The essence of capital structure decision is to determine the relative proposition of equity and debt. Equity here in broader sense means owner's funds which can be raised by issue of equity shares and preference share and by retained earnings. Debts can be raised by issuing debenture or bonds by taking long term borrowings. The capital structure decisions a significant financial decision

because it affects the shareholder's return and risk and consequently the market value of share.

Profitability

All the business concern is doing business to earn a profit. The profit earned by the firm indicates the efficiency of business. The higher amount of profit, the higher is the efficiency of business concern. The profit of a business can be measured & examining the profitability of investments attain by the business. Profitability means "an ability or capacity to make profit from all the activities of an organization, firm, company or an enterprise." It indicated that how a management is using their available resources in the market efficiently and effectively to earn profit. (Vyas, 2021).

The word "Profitability" is composed of two words "Profit" and "Ability". To obtain profit from accounting point of view total expenses are less from the total revenues for a given period. On the basis of the concept profitability may be defined as the ability of the investment to earn as the return from its use. The words ability means the earning power or operating performance of the concern on its investment. The word "Profitability" may be defined as the ability of a given investment to earn a return from its use. It can be remarked that "profitability" is helpful in providing a useful basis for measuring business performance and overall efficiency (Juthalal, 2019).

B.B.Howod and M.Upton observed that " The word profitability may be defined as the ability of an investment to earn to return on its use. Thus profitability is the ability of an organization to earn profits in other words, profitability is a composite concept relating the efficiency of an organization to earn profit.

W. M. Harper - Profitability is a relative measure, It indicates the most profitable alternative. Profit on other hand, is an absolute measure, it indicates the overall amount of profit earned by a transaction. Very high profit does not always indicate a sound organizational efficiency and low profitability is not always a sign of organizational sickness.

Determinants of Capital Structure

Capital structure refers to the way a firm chooses to finance its assets and investments through some combination of equity, debt, or internal funds. It is in the best interests of a company to find the optimal ratio of debt to equity to reduce their risk of insolvency, continue to be successful and ultimately remain or to become profitable. The capital structure of a concern depends upon a large number of factors such as leverage , growth of the company, nature and size of business, the idea of retaining control, flexibility of capital structure, requirements of investors, cost of floatation of new securities, timing of issue, corporate tax rate and the legal requirements. It is not possible to rank hem because all such factors are of different important and the influence of individual factors of a firm change over a period of time.

I. Financial Leverage or Trading on Equity**:** The use of long term fixed interest bearing debt and preference share capital along with equity share capital is called financial leverage or trading on equity. Effects of leverage on the shareholders return or earnings per share have already been discussed in this blog. If the assets financed by debt yield a return greater than the cost of the debt, the earnings per share will increase with out an increase in the owners' investment. Similarly, the earnings per share will also increase if preference share capital is used to acquire assets. But the leverage impact is felt more in case of debt because (i) the cost of debt is usually lower than the cost of preference share capital, and (ii) the interest paid on debt is a deductible charge from profits for calculating the taxable income while dividend on preference shares is not. Because of its effect on the earnings per share, financial leverage is one of the important considerations in planning the capital structure of a company. The companies with high level of the Earnings Before Interest and Taxes (EBIT) can make profitable use of the high degree of leverage to increase return on the shareholders' equity. One common method of examining the impact of leverage is to analyses the relationship between Earnings Per Share (EPS) at various possible levels of EBIT under alternative methods of financing. The EBIT-EPS analysis is one important tool in the hands of the financial manager to get an insight into the firm's capital structure management. He can consider the possible fluctuations in EBIT and examine their

impact on EPS under different financing plans. The earnings per share also increase with the use of preference share capital but to the act fact that interest is allowed to be deducted while computing tax, the leverage impact of debt is much more.

II. Growth and Stability of Sales**:** The capital structure of a firm is highly influenced by the growth and stability of its sales. If the sales of a firm are expected to remain fairly stable, it can raise a higher level of debt. Stability of sales ensures that the firm will not face any difficulty in meeting its fixed commitments of interest payment and repayments of debt. Similarly, the rate of growth in sales also affects the capital structure decision.

III. Cost of Capital**:** Every dollar invested in a firm has a cost. Cost of capital refers to the minimum return expected by its suppliers. The expected return depends on the degree of risk assumed by investors. A high degree of risk is assumed by shareholders than debt-holders. The capital structure should provide for the minimum cost of capital. Measuring the costs of various sources of funds is a complex subject and needs a separate treatment. Needless to say that it is desirable to minimize the cost of capital. Hence, cheaper sources should be preferred, other things remaining the same. The main sources of finance for a firm are equity share capital, preference share capital and debt capital. The return expected by the supplier of capital depends upon the risk they have to undertake. For shareholders the rate of dividend is not fixed and the Board of Directors has no legal obligation to pay dividends even if the profits have been made by the company. The loan of debt-holders is returned within a prescribed period, while shareholders can get back their capital only when the company is wound up. This leads one to conclude that debt is a cheaper source of funds than equity. The tax deductibility of interest charges further reduces the cost of debt. The preference share capital is cheaper than equity capital, but is not as cheap as debt is. Thus, in order to minimize the overall cost of capital, a company should employ a large amount of debt.

IV. Risk**:** There are two types of risk that are to be considered while planning the capital structure of a firm viz (i) business risk and (ii) financial risk. Business risk refers to the variability to earnings before interest and taxes. Business risk can be internal as well as external. Internal risk is caused due to improper products mix non availability of raw materials, incompetence to face competition, absence of strategic management etc. internal risk is associated with efficiency with which a

firm conducts it operations within the broader environment thrust upon it. External business risk arises due to change in operating conditions caused by conditions thrust upon the firm which are beyond its control e.g. business cycle.

V. Cash Flow: One of the features of a sound capital structure is conservation. Conservation does not mean employing no debt or a small amount of debt. Conservatism is related to the assessment of the liability for fixed charges, created by the use of debt or preference capital in the capital structure in the context of the firm's ability to generate cash to meet these fixed charges. The fixed charges of a company include payment of interest, preference dividend and principal. The amount of fixed charges will be high if the company employs a large amount of debt or preference capital. Whenever a company thinks of raising additional debt, it should analysis its expected future cash flows to meet the fixed charges. It is obligatory to pay interest and return the principal amount of debt. A firm which shall be able to generate larger and stable cash inflows can employ more debt in its capital structure as compared to the one which has unstable and lesser ability to generate cash inflow. Debt financial implies burden of fixed charge due to the fixed payment of interest and the principal. Whenever a firm wants to raise additional funds, it should estimate, project its future cash inflows to ensure the coverage of fixed charges.

VI. Nature and Size of a Firm: Nature and size of a firm also influence its capital structure. All public utility concern has different capital structure as compared to other manufacturing concern. Public utility concerns may employ more of debt because of stability and regularity of their earnings. On the other hand, a concern which cannot provide stable earnings due to the nature of its business will have to rely mainly on equity capital. The size of a company also greatly influences the availability of funds from different sources. A small company may often find it difficult to raise long-term loans. If somehow it manages to obtain a long-term loan, it is available at a high rate of interest and on inconvenient terms. The highly restrictive covenants in loans agreements of small companies make their capital structure quite inflexible. The management thus cannot run business freely. Small companies, therefore, have to depend on owned capital and retained earnings for their long-term funds. A large company has a greater degree of flexibility in designing its capital structure. It can obtain loans at easy terms and can also issue

ordinary shares, preference shares and debentures to the public. A company should make the best use of its size in planning the capital structure.

VII. Control: Whenever additional funds are required by a firm, the management of the firm wants to raise the funds without any loss of control over the firm. In case the funds are raised though the issue of equity shares, the control of the existing shareholder is diluted. Hence they might raise the additional funds by way of fixed interest bearing debt and preference share capital. Preference shareholders and debenture holders do not have the voting right. Hence, from the point of view of control, debt financing is recommended. But, depending largely upon debt financing may create other problems, such as, too much restrictions imposed upon imposed upon by the lenders or suppliers of finance and a complete loss of control by way of liquidation of the company.

VIII. Flexibility**:** Flexibility means the firm's ability to adapt its capital structure to the needs of the changing conditions. The capital structure of a firm is flexible if it has no difficulty in changing its sources of funds. Whenever needed the company should be able to raise funds without undue delay and cost to finance the profitable investments. The company should also be in a position to redeem its preference capital or debt whenever warranted by future conditions. The financial plan of the company should be flexible enough to change the composition of the capital structure. It should keep itself in a position to substitute one form of financing for another to economics on the use of funds.

IX. Requirement of Investors: The requirements of investors is another factor that influence the capital structure of a firm. It is necessary to meet the requirements of both institutional as well as private investors when debt financing is used. Investors are generally classified under three kinds, i.e. bold investors, cautions investors and less cautions investor.

X. Capital Market Conditions **:** Capital Market Conditions do no remain the same for ever sometimes there may be depression while at other times there may be boom in the market is depressed and there are pessimistic business conditions, the company should not issue equity shares as investors would prefer safety.

XI. Marketability**:** Marketability here means the ability of the company to sell or market particular type of security in a particular period of time which in turn depends upon -the readiness of the investors to buy that security. Marketability may not influence the initial capital structure very much but it is an important

consideration in deciding the appropriate timing of security issues. At one time, the market favors debenture issues and at another time, it may readily accept ordinary share issues. Due to the changing market sentiments, the company has to decide whether to raise funds through common shares or debt. If the share market is depressed, the company should not issue ordinary shares but issue debt and wait to issue ordinary shares till the share market revives. During boom period in the share market, it may not be possible for the company to issue debentures successfully. Therefore, it should keep its debt capacity unutilized and issue ordinary shares to raise finances.

XII. Inflation: Another factor to consider in the financing decision is inflation. By using debt financing during periods of high inflation, we will repay the debt with dollars that are worth less. As expectations of inflation increase, the rate of borrowing will increase since creditors must be compensated for a loss in value. Since inflation is a major driving force behind interest rates, the financing decision should be cognizant of inflationary trends.

XIII. Floatation Costs**:** Floatation costs are incurred when the funds are raised. Generally, the cost of floating a debt is less than the cost of floating an equity issue. This may encourage a company to use debt rather than issue ordinary shares. If the owner's capital is increased by retaining the earnings, no floatation costs are incurred. Floatation cost generally is not a very important factor influencing the capital structure of a company except in the case of small companies. (MBA Knowledge Base,2021).

2.1.2Theory capital structure

Net income approach

This approach was developed by David Durand in 1952. According to net income approach, the cost of debt capital and the equity capital remains unchanged when leverage ratio varies. As a result, the weighted average cost of capital declines as the leverage ratio increases. This is because when the leverage ratio increases, the cost of debt, which is lower than the cost of equity, receives a higher weight in calculation of the average cost of capital. Thus, higher leverage results higher value of the firm. Assumptions of this approach are:

1. Change in leverage does not change the risk position of investors, as a result, the cost of equity (ks), and cost Of debt (kd) remain constant with changes in leverage.
2 Cost of debt (kd) is less than cost of equity (K).
3. Overall cost of capital (k) decreases as leverage increases.

Net operating income approach

This approach is also developed by David Durand in 1952, In this approach, net operating income is capitalized at an overall capitalization rate to obtain the total market value of the firm. As EBIT and overall capitalization rate remain constant, capital structure does not affect the market value of the firm. Market value of the equity is computed after deducting market value of debt from total market value of the firm. Note that in the net operating income approach the overall capitalization rate and the cost of debt remain constant for all degrees of leverage. required return on equity increases linearly with financial leverage. Assumptions of this approach are:

I. The market uses an overall capitalization rate k, to capitalize the net operating income; k depends on the business risk. If the business risk is assumed to remain unchanged k is a constant.
II. Debt capitalization rate kd, remains constant.
III. The use of less costly debt funds increases the risk of shareholders. This causes the equity-capitalization rate to increase, Thus, the advantage of debt is offset exactly by the increase in the equity capitalization rate, ks.
IV. Market value of equity is the residual value.

Traditional approach

This Traditional approach is also developed by David Durand in 1952. The traditional capital structure theory, which is taken as middle ground position is also known as an intermediate approach. It is a compromise between the NI and NOI. According to traditional view, which suggested that up to some 'moderate' amount of leverage risk, does not increases noticeably on either the debt or equity. So both kd and ks are relatively constant up to some point of leverage. However, beyond this threshold debt ratio, both debt and equity costs begin to rise sharply, and this increases more than offset the advantages of cheaper debt. The result is (i) a 'U' shaped weighted average cost of capital curve and (ii) a value of the firm which first rises, then hits a peak, and finally declines as the debt ratio increases. Thus, according to the

traditionalists, there are some capital structures with less than hundred percent debts which maximize the value of the

Modigliani-miller model

Franco Modigliani and Merton Miller (generally referred to as MM) both Nobel Prize winners in financial economics, have had a profound influence on capital structure theory ever since their seminal paper on capital structure was published in 1958. The Modigliani Miller hypothesis is identical with net operating income approach. In other words, MM have restated and amplified the NOI Approach. MM argue that, in the absence of taxes, a firm's market value and the cost of capital remain invariant to the capital structure changes. In their article, they provide analytically sound and logically consistent behavior justification in favor of their hypothesis.

2.1.3 Review of Previous studies

Abor (2005) This paper seeks to investigate the relationship between capital structure and profitability of listed firms on the Ghana Stock Exchange (GSE) during a five-year period. Regression analysis is used in the estimation of functions relating the return on equity (ROE) with measures of capital structure. The results reveal a significantly positive relation between the ratio of short-term debt to total assets and ROE. However, a negative relationship between the ratio of long-term debt to total assets and ROE was found. With regard to the relationship between total debt and return rates, the results show a significantly positive association between the ratio of total debt to total assets and return on equity. The research suggests that profitable firms depend more on debt as their main financing option. In the Ghanaian case, a high proportion (85 percent) of the debt is represented in short-term debt.

Nimalathasan (2010) conduct research on the capital structure and its impact on profitability: a study of listed manufacturing companies in Srilanka In this study an attempt has been made to analyze the capital structure and its impact on profit earning capacity during 2003 to 2007 (5years) financial year of listed manufacturing companies in Sri Lanka. The results shows that debt to equity ratio (D/E) ratio is positively and strongly associated to all profitability ratios [gross profit ratio (GPR); operating profit ratio (OPR); and net profit ratio (NPR)] except return on capital employed (ROCE) and return on investment (ROI). Debt to assets (D/A) ratio is positively and strongly associated to OPR, NPR and ROCE. Similarly capital gearing

(CG) ratio is also positively correlated to GPR and NPR. Further, interest coverage (IC) ratio is significantly correlates to ROCE and NPR. Further capital structure has a great impact on all profitability ratios except ROCE and ROI. The outcomes of the study may guide entrepreneurs, loan- creditors and policy planners to formulate better policy decisions in respect of the mix of debt and equity capital and to exercise control over capital structure planning and thereby to control and reduce bankruptcy costs.

Azhagaiah and Gavoury (2011) conduct research on the Impact of Capital Structure on Profitability with Special Reference to it Industry in India for the study, a sample of 102 it firms was chosen by the Multi- Stage Sampling Technique. The data for a period of 8 years ranging from 1999–2000 to 2006–2007 have been collected and considered for analysis. Regression Analysis (to analyze the unique impact of cs on Profitability), in addition to descriptive statistics such as Mean, Standard Deviation, and Ratios has been used. The study proves that there has been a strong one-to-one relationship between cs variables and Profitability variables, Return on Assets (roa) and Return on Capital Employed (roce) and the cs has significant influence on Profitability, and increase in use of debt fund in cs tends to minimize the net profit of the it firms listed in Bombay Stock Exchange in India.

Gill et al, (2011) conduct research on the effect of capital structure on profitability. A sample of 272 American firms listed on New York Stock Exchange for a period of 3 years from 2005 – 2007 was selected. The correlations and regression analyses were used to estimate the functions relating to profitability (measured by return on equity) with measures of capital structure. Empirical results show a positive relationship between short-term debt to total assets and profitability and total debt to total assets and profitability in the service industry. The findings of this paper show a positive relationship between short-term debt to total assets and profitability, long-term debt to total assets and profitability, and total debt to total assets and profitability in the manufacturing industry.

Shubita and Alsawalhah (2012) the Relationship between Capital Structure and Profitability. Amman Stock Exchange during a six-year period (2004-2009). The problem statement to be analyzed in this study is: Does capital structure affect the Industrial Jordanian companies? The study sample consists of 39 companies.

Applying correlations and multiple regression analysis, the results reveal significantly negative relation between debt and profitability. This suggests that profitable firms depend more on equity as their main financing option.

Chisti et al, (2013) conduct research on the impact of capital structure on profitability of listed companies (evidence from india) In this paper an attempt has been made so as to ascertain the impact of capital structure on the profitability of a firm. This study is focused on automobile industry and ten companies are taken as sample. The reference period of the study is five years and is completely based on secondary data which has been collected through various sources. In order to achieve the objectives of the study, the researchers have employed the analysis of various ratios. Debt to Equity ratio is negatively correlated to profitability ratios which imply that if the debt content is increased aggressively it will adversely impact the profitability. Debt to Assets ratio and Interest coverage ratio are positively and significantly correlated with the profitability ratio implying that these ratios are having positive impact on profitability.

Tailab (2014) conduct research on the effect of capital structure on profitability of energy American firms. A sample of 30 Energy American firms for a period of nine years from 2005 – 2013 was considered. Secondary data were collected from financial statements. Findings also presented that the total debt has a significant negative impact on ROE and ROA, while size in terms of sales has significantly negative effect only on ROE of the American firms. However, a short debt significantly has a positive influence on ROE. An insignificant either negative or positive relationship was observed between long term debt, debt to equity and size in terms of total assets and profitability.

Abeywardhana (2015) conduct research on the Capital Structure and Profitability: An Empirical Analysis of SMEs in the UK This study examines the relationship between capital structure and the profitability of non-financial SMEs in the UK for the period of 1998-2008. Using the Two Stage Least Squares, the results show a significant relationship with capital structure and profitability which is negatively related. The size of the firm appears a more important factor that determines the profitability in SMEs in the UK. There is consistent evidence for positive size- profitability relationship. The results of this study have shown that the capital structure of the firm

has a significant influence on the profitability of SMEs in the UK. Especially, long-term debt to total assets ratio is negatively related with the profitability and this is an indication that SMEs are averse to use more equity because of the fear of losing the control.

Tandukar (2015) conduct research on analysis of relationship between capital structure and profitability of Nepalese commercial bank. A very mixed result was observed on correlation and simple regression for analysis of relationship between capital structure and profitability variables. Through correlation analysis of Capital fund and cost of fund of samples banks, it was found that there is significant relationship between capital fund and cost of fund. CAR has high positive correlation with NIM and cost of fund and high negative correlation with ROE. Adverse to CAR, D/A ratio and D/E ratio has negative correlation with NIM and cost of fund but positive correlation of D/A ratio with ROE and ROA. In case of regression analysis there is no significant relationship of CAR and profitability variables ROA, ROE and NIM. Adversely, D/E ratio has significant relationship with ROA, ROE and NIM, insignificant relation with cost of fund. D/A ratio have significant relationship with ROA, ROE and cost of fund, insignificant relation with NIM.

Musah (2017) conduct research on impact of capital structure on profitability of commercial bank in Ghana. The study sampled 23 banking over a six year period from 2010 to 2015 and extracted data from the annual of these banks. Data was analyzed using descriptive statistics, correlation analysis as well as panel regression analysis. The results showed that banks in Ghana are highly leveraged with debt financing constituting 84% of total capital out of which 77% is short term debt despite the increase in minimum equity capital of these banks. The regression analysis revealed that short term debt ratio and long term debt ratio are negatively related with profitability of banks in Ghana. However, total debt ratio was positively associated with profitability of Banks in Ghana. On the control variables, firm size, foreign ownership and age of the bank were positively associated with banks profitability whiles growth in customers' deposits was negatively associated with banks' profitability. The results show that commercial banks in Ghana reliance on short term financing (deposits) reduces banks profitability and as such banks should shift their financing focus from deposits to other sources. The results call for firms to choose the right mix of short term and long term debt that will maximize profitability of bank.

Raza et al. (2017) conduct a research Impact of capital structure on profitability and earnings of the firm a study on Pakistani companies from Non-Financial sectors The financial data of 22 companies has been observed from 2010-2015. The Hausman test confirms that random effect model is appropriate for both ROE and EPS. Findings reveal that DE is insignificantly negatively related to ROE but significantly positively related to EPS, where DA is insignificantly positively related to ROE but significantly negatively related to EPS.

Chang et al. (2019) conduct research on the relationship between capital structure and profitability: evidence from four Asian tigers. In examining the relationship between capital structure and profitability, we apply correlation and regression analysis on dataset from 2003 to 2016 for the firms in the Four Asian Tiger economies. The data are collected from the Compustat at Global Vantage database and include 46,301 observations. This study finds a significantly negative relationship between leverage and profitability, a significantly positive relationship between growth and leverage in Taiwan, Korea and Hong Kong and a significantly positive relationship between size and leverage in each country.

Juthal (2019) conduct research an analysis of capital structure and its impact on profitability of pharmaceutical company in India. The financial data of ten companies has been observed from 2007/8to 2016/17. The debt to capital and debt to equity ratio have independent variable and ROE, ROA, NPR as dependent variable the researcher has established correlation ratios. There is no correlation between capital structure on profitability and regression analysis there is no significant effect on capital structure on profitability of select pharmaceutical company.

Arjandas (2019) conduct research on capital structure its impact on profitability value of firm a study sectors of India. This study sample of 70 different sectors of company and analysis data 10 year. It found that impact of capital structure is significant on ROA. Leverage does not have significant impact on ROE and value of firm. It shows that having more debt in capital structure reduce its return on assets but increases its market value.

Aryal (2019) this research aim to investigating the impact of capital structure on profitability of commercial banks by selecting five commercial bank . study has

consider annual data 2012-2018. In this study return on equity, return on assets and earnings per share are used as profitability indicators representing dependent variables and long term debt to total assets ratio, short term debt to total assets ratio, total debt to total assets ratio and total debt to total equity ratio are used as capital structure indicators representing independent variables. Both SPSS and excel are used to analyze these variables. The empirical results that GIBL has higher level of mean value of STDTA and NIBL has higher level of mean of ROE. There is no statistically relationship of ROE with STDTA, LTDTA and TDTE. EPS has very weak negative relationship with STDTA. ADBL has higher level of EPS which is highest among others. GIBL has lowest level of EPS because, its risk and return tradeoff between capital composition is weak than other bank. Composition of capital of GIBL bank leads to lower level of EPS due to high using of equity and low level of income as well as it also leads to lower level of ROA.

Lamichhane (2019) conduct research on impact of capital structure on firm's profitability of listed manufacturing companies. For this study select three manufacturing companies with five years data. regression analysis shows there is a negative relationship between total debt to assets & ROE and total debt to equity and ROE. ROA has positive relationship with total debt to assets which means for every increase in total debt to assets there in increase in ROA. Similarly ROA has negative relationship with debt to equity ratio and for every increase in debt to equity ratio there is a decrease in ROA. Net profit has negative relationship with total debt to assets and total debt to equity.

Maharijan (2019) conduct research on the capital structure management and its impact on profitability in Nepalese commercial bank. As the study combatively analysis the capital structure performance of the two commercial bank the data are taken six years. Positive relationship between profit and total debt capital as well as total assets show green light to use debt capital to enhance to profit. It also indicates cost of using debt is less than return from over all capital.

Baxi (2020) conduct research on A study of impact of capital structure on the profitability of public and private Sector banks in India. This study has investigated the impact of capital structure on profitability of 20 public sector and 20 private sector banks in India over the past 8 years from 2011 to 2018. The findings revealed that

capital structure variables like Long term debt to capital and total debt to capital have statistically significant negative impact whereas the asset growth and firm size have statistically significant positive impact on profitability of core business operations of commercial banks. The study further examined that Short Term debt is negatively related to profitability but does not have a significant impact.

Bhatt and Jain (2020) This study seeks to examine the relationship between the capital structure and the profitability of commercial Banks in Nepal. In this connection, 18 Nepalese commercial banks were selected as study samples and their financial data were gathered from NRB BI Statistics and Bank Supervision Report for the period of 2010-2019. Return on Equity was used as indicator of profitability while short term debt, long term debt, deposits and total debt to assets ratio were used as a proxy of capital structure along with the control variables of bank size and assets growth. Results showed that more than 40 percent bank profitability measured by return on equity is predicted by the explanatory –capital structure variables. It is also revealed that return on equity is insignificantly positively related with long term debt and deposits whereas it is insignificant negative with short term debt and total debt. In all regression models, profitability is significantly positively related with banks size indicating that larger the size of the bank, higher is the return for shareholders.

Pradhan and Kafla (2021) this study examines the impact of capital structure on the profitability of Nepalese commercial banks. Return on assets, return on equity and net interest margin are selected as the dependent variables. The selected independent variables are capital adequacy ratio, bank size, total debt to total assets ratio, total debt to total equity ratio and short-term debt to total assets ratio. The study is based on the secondary data of 28 commercial banks with 224 observations for the period 2011-12 to 2018-19. The data is collected from the Banking and Financial Statistics published by Nepal Rastra Bank and annual reports of the selected commercial banks. The regression models are estimated to test the impact of capital structure on the profitability of Nepalese commercial banks. The study showed that short-term debt to total assets ratio has a negative impact on return on equity, return on assets and net interest margin. It indicates that increase in short-term debt to total assets ratio leads to a decrease in return on equity, return on assets and net interest margin. Similarly, total debt to total assets ratio has a negative impact on return on assets. It indicates that increase in total debt to total assets ratio leads to a decrease in return on assets.

Likewise, total debt to total equity ratio has a negative impact on return on equity, return on assets and net interest margin. It means that increase in total debt to total equity ratio leads to a decrease in return on equity, return on assets and net interest margin. Further, there is a negative impact of capital adequacy ratio on return on equity

Chalise (2021) conduct research on impact of capital structure on profitability in Nepalese commercial banks The major component of a capital structure i.e., debt, equity and assets are taken as dependent variable whereas profitability is regarded as dependent variable. This study is based on five years data ranging from 2014–2015 to 2018–2019 and considered for financial analysis to establish the relationship among the study variable. Descriptive analysis i.e., statistics such as mean, standard deviation, and ratios and inferential statistics such as correlation and regression analysis has been carried out. It was found that Nepalese banks are highly levered and the trend of debt ratio is increasing over the period. Further the study revealed that return on equity tends to increase significantly with increase in total debt to total asset. Return on equity tends to decrease insignificantly with increase in total debt to total equity ratio. This study found a strong one-to-one relationship between capital structure variables and profitability variables with significant influence on profitability.

Endri et al. (2021) conduct research on the Capital Structure and Profitability: Evidence from Mining Companies in Indonesia This study examines the relationship between capital structure and firm performance. The investigation has been performed using panel data procedure for a sample of 42 mining sector Indonesian listed companies on the Indonesian Stock exchange during 2014-2018. The study uses three performance measures which are return on equity (ROE), return on asset (ROA), and earnings per share (EPS) as dependent variable. The five capital structure measure which are debt to asset ratio (DAR), debt to equity ratio (DER), long term debt to total capital (LDTC), long term debt to total equity (LDTE), and growth as independent variable. The results show that DER has no relationship to ROA and EPS while has negative significant to ROE, DAR has a significant negative effect on ROA and EPS while DAR has a significant positive effect on ROE, LDTE has positive significant relationship to ROE while ROA and EPS has no relationship. LDTC has negative

significant relationship to return on asset, while ROE and EPS have no relationship. Growth has a significant positive relationship with ROA, ROE, and EPS.

2.2 Research Gap

The relationship between capital structure and profitability cannot be ignored because the improvement in the profitability is necessary for the long-term survivability of the firm. Because interest payment on debt is tax deductible, the addition of debt in the capital structure will improve the profitability of the firm. Therefore, it is important to test the relationship between capital structure and the profitability of the firm to make sound capital structure decisions.

Many researchers who tested the impact of capital structure on firms' profitability came up with contradictory results. Some discovered positive impact while some discovered negative impact and some revealed there is no any impact of capital structure on firm's performance. Because of this controversial result, researcher gets the chance to do further studies on this topic by testing the relationship between capital structure and firm profitability.

The lack of a consensus about what would qualify as optimal capital structure in the hydropower company has motivated researcher to conduct this research. Also in Nepal, there are few research held on this impact of capital structure on profitability manly research conduct on commercial bank so it has high time to analyze and compare the results with the capital structure theories and see whether there is any relation between capital structure decision and firm profitability using listed hydropower companies in Nepal stock exchange. Other research only analysis impact of capital structure on profitability but in this research also analysis impact of cost of capital on profitability and relationship between capital structure and value of firm of hydropower company listed on Nepal stock exchange.

Chapter III

Research Methodology

3.1 Research design

It serves as a framework for the study directing the collection and analysis of the data, in which the research method is to be utilized and sampling plan to be followed. Research designed is the way through which we find the required answer of the research questions and ultimately meet the research objectives. The research design of this study is descriptive and correlational.

3.2 Population and sample

There are forty hydropower company listed in Nepal stock exchange. However the analysis of all hydropower its impact on profitability need grate effort to conduct. So the population for the study consist of all the hydropower company listed in NEPSE. Out of them five hydropower companies are taken as a sample. They are:

I. Arun valley development co Ltd
II. Barun hydropower co Ltd
III. Butwal power company
IV. API power company
V. Sanima mai hydropower Ltd

3.3 Sampling Design

In this study use the convenience sampling design.

3.4Nature and source of data

This study is related to the capital structure and its impact on the firm's profitability so this study related on accounting and financial report, hence this study is based on the secondary data. The raw secondary data are modified to some extend for the study purpose. Source of data is secondary.

3.5Instrument of data collection

The data are collected from annual report of companies, NEPSE, security bord of Nepal and website of the companies.

3.6 Research framework

figure 3.6.1 conceptual relation between depenent and independent

In this study independent variable are capital structure and cost of capital. In the capital structure total debt ratio and debt to equity ratio. In the cost of capital cost of debt, cost of equity and WACC.

Dependent variable are profitability and value of firm. In the profitability net profit margin, return on equity (ROE) and return of assets (ROA). In value of firm value of debt, value equity and total value of firm.

3.7 Method of Analysis

Mainly financial and statistical method are applied for the purpose of the study.

Financial tools

In this study use the capital structure ratio, profitability ratio, cost of capital and value of the firm.

Capital structure ratio

Capital structure ratio is also non as debt management ratio, leverage ratio measures the extent to which firm using debt financial leverage and the degree of safely afforded to creditors.

Debt ratio

Total debt to total assets is a leverage ratio that defines the total amount of debt relative to assets. This metric enables comparisons of leverage to be made across different companies. The higher the ratio, the higher the degree of leverages (DOLs) and, consequently, financial risk. The total debt to total assets is a broad ratio that includes long-term and short-term debt (borrowings maturing within one year), as

well as all assets – tangible and intangible. Total debt to total assets is a measure of the company's assets that are financed by debt, rather than equity. This leverage ratio shows how a company has grown and acquired its assets over time. Investors use the ratio to not only evaluate whether the company has enough funds to meet its current debt obligations, but to also assess whether the company can pay a return on their investment. Creditors use the ratio to see how much debt the company already has and if the company has the ability to repay its debt, which will determine whether additional loans will be extended to the firm.

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

Debt – Equity ratio

The debt -equity ratio is measured the long- term financial solvency of firm. The debt -equity ratio is calculated by dividing total debt by share holder's equity. Total debt consists of long -term debt and current liability and total equity consist of equity capital, preference share capital, undistributed profit. Current liabilities are short debt, and payable.

$$\text{Debt equity ratio} = \frac{\text{Total debt}}{\text{total equity}}$$

Profitability ratio

Net Profit Ratio

The net profit margin ratio, also called net margin, is a profitability metric that measures what percentage of each rupee earned by a business ends up as profit at the end of the year. In other words, it shows how much net income a business makes from each rupee of sales. Investors and analysts typically use net margin to gauge how efficiently a company is managed and forecast future profitability based on management's sales forecasts. By comparing net income to total sales, investors can see what percentage of revenues goes to paying operating and non-operating expenses and what percentage is left over to pay shareholders or reinvest in the company. A higher margin is always better than a lower margin because it means that the company is able to translate more of its sales into profits at the end of the period. Keep in mind that margins change drastically between industries and just become one industry has a lower average margin than another doesn't mean that it is less profitable. Industries,

like retailing, might have a lower average margin than other industries, but they make up for it in sheer volume of sales making them more profitable in total amount. As with most financial measurements, net margin is also most useful if compared to the company's history and peers. This ratio is one of the most important Income statement measures that management and investors analyze. Net Profit Ratio is calculated as:

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

Return On Assets Ratio (ROA)

The return on assets ratio, often called the return on total assets, is a profitability ratio that measures the net income produced by total assets during a period by comparing net income to the average total assets. In other words, the return on assets ratio or ROA measures how efficiently a company can manage its assets to produce profits during a period. In short, this ratio measures how profitable a company's assets are. Since all assets are either funded by equity or debt, some investors try to disregard the costs of acquiring the assets in the return calculation by adding back interest expense in the formula. It only makes sense that a higher ratio is more favorable to investors because it shows that the company is more effectively managing its assets to produce greater amounts of net income. A positive ROA ratio usually indicates an upward profit trend. ROA is most useful for comparing companies in the same industry as different industries use assets differently. Return On Assets Ratio is calculated as:

$$\text{Return on Assets} = \frac{\text{Net Income}}{\text{Total Assets}}$$

Return On Equity Ratio (ROE)

The return on equity ratio or ROE is a profitability ratio that measures the ability of a firm to generate profits from its shareholders investments in the company. In other words, the return on equity ratio shows how much profit each rupee of common stockholders' equity generates. This is an important measurement for potential investors because they want to see how efficiently a company will use their money to generate net income. ROE is also indicator of how effective management is at using equity financing to fund operations and grow the company. Return on equity measures how efficiently a firm can use the money from shareholders to generate

profits and grow the company. Unlike other return on investment ratios, ROE is a profitability ratio from the investor's point of view—not the company. In other words, this ratio calculates how much money is made based on the investors' investment in the company, not the company's investment in assets or something else. That being said, investors want to see a high return on equity ratio because this indicates that the company is using its investors' funds effectively. Higher ratios are almost always better than lower ratios, but have to be compared to other companies' ratios in the industry. Since every industry has different levels of investors and income, ROE can't be used to compare companies outside of their industries very effectively. 281 Many investors also choose to calculate the return on equity at the beginning of a period and the end of a period to see the change in return. This helps track a company's progress and ability to maintain a positive earnings trend. Return On Equity Ratio is calculated as:

$$\text{Return on Equity Ratio} = \frac{\text{Net Income}}{\text{Shareholder's Equity}}$$

Cost of capital

Cost of debt (Kdt)

Debt is the creditorship source of financing fixed interest is paid for the suppliers of debt capital. Interest on debt capital is tax deductible because it is paid before computing the taxable income and certain portion is paid by the government in the form of decreased tax. The cost of debt capital is computed on the after basis, because the interest expenses is tax deductible expenses. The cost of debt is calculate following way:

$$\text{Cost debt (Kd)} = \frac{\text{Total interest}}{\text{Total debt}}$$

After tax cost of debt (Kdt)= Kd(1-t)

Cost of equity (Ke)

Net operating income is capitalized at an overall capitalization rate to obtain the total market value of the firm. As EBIT and overall capitalization rate remain constant, capital structure does not affect the market value of the firm. Market value of the equity is computed after deducting market value of the debt from total market value of the firm. Note that in the net operating income approach the overall capitalization rate

and the cost of debt remain constant for all degrees of leverage. The required return on equity increases linearly with financial leverage. Equity capitalization rate ke is calculated here by simply dividing EBIT by the market value of common equity.

Cost of Equity (Ke)= $\frac{EBIT}{Market\ value\ of\ stock}$

Weight average cost of capital (WACC)

The weighted average cost of capital is the cost of all source of capital raised by a firm. It is computed by net of taxes. After determination of cost of individual capital components, they are combined to compute WACC. WACC can be defined as the average of the cost of each source of capital employed by the firm, properly weighted by the proportion they hold in the capital structure of the firm. The WACC can be computed by using following formula:

WACC=Wd$\times Kdt$ + We $\times Ke$

Value of firm

Value of debt (B)

Value of debt refers to the price at which investor would be willing to buy company's debt. It also refers to the amount of debt that companies have, but not reported directly in the balance sheet. it can be calculate by:

Value of debt(B) = $\frac{I}{Kd}$

Where,

Kd = cost of debt

I= interest amount

Total market value of stock(S)

The market value represent the value of a company according to the stock market. It is the price an assets would get in the market place. In the context of the companies, market value is equal to market capitalization. It can be calculate following way:

Value of stock S= $\frac{NI}{Ke}$

Where,

NI = net income

Ke= cost of debt

Value of firm (V)

Total value of the firm is summation of value of debt and value of equity. It can be obtained from:

Value of firm= B+S

Statistical tools

Arithmetic means

Arithmetic mean is the number which is obtained by adding the various numbers of all the items of a series and dividing the total by the number of items. Arithmetic mean is a useful tool in statistical analysis. The arithmetic mean is the simplest and most widely used measure of a mean, or average. It simply involves taking the sum of a group of numbers, then dividing that sum by the count of the numbers used in the series.

$$\bar{X} = \frac{\sum X}{N}$$

Where,

$\bar{X}$ = Arithmetic Mean

$\sum X$ = Sum of Elements

N = Number of Observations

Coefficient of correlation

The correlation coefficient is a statistical measure that calculates the strength of the relationship between the relative movements of the two variables. It is a useful statistical tool for measuring the intensity of the magnitude of linear relationship between two variables. The most important method of measuring the correlation between the two variables is “Karl person’s coefficient of correlation. “If the values of the variables are directly proportional then the correlation is said to be positive. On the other hand, if the values of the variables are inversely proportional, then the

correlation is said to be negative. The correlation coefficient always remains within the limit of +1 to -1. The correlation coefficients (r) between two variables X and Y can be obtained by using following formula.

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

Where,

r = The correlation coefficient between two variables of X and Y

Proprieties:

a) It lies between -1 and +1

b) If r = +1, then there is perfect positive correlation.

c) If r = -1, then there is perfect negative correlation.

d) If r = 0, then there is no correlation.

e) If r = 0.7 to 0.99 (or- 0.7 to -0.99) then there is high degree positive or negative correlation.

Multiple Regression Analysis

Multiple linear regression is most common form of linear regression is used to explain the relationship between one continuous dependent variable and two or more independent variables. Multiple linear regression (MLR), also known simply as multiple regression, is a statistical technique that uses several explanatory variables to predict the outcome of a response variable. The goal of multiple linear regression (MLR) is to model the linear relationship between the explanatory (independent) variables and response (dependent) variable. In essence, multiple regression is the extension of ordinary least-squares (OLS) regression that involves more than one explanatory variable. The formula for a multiple linear regression is:

$Y = \beta_0 + \beta_1 X1 + \beta_2 X2 + \ldots + \beta_1 X1 + Є$

y = the predicted value of the dependent variable

β_0 = the y-intercept (value of y when all other parameters are set to 0)

β_1X1= the regression coefficient (β_1) of the first independent variable ($\mathbf{X_1}$)

β_1X1 = the regression coefficient of the last independent variable

Є = model error

Software used – The secondary data collected is analyzed with the help of SPSS software and MS excel.

Chapter IV

Results and Discussion

4.1 Result

4.1.1 Descriptive Analysis of variables of the study

Descriptive statistics are brief descriptive coefficients that summarize a given data set, which can be either a representation of the entire or a sample of a population. Descriptive analysis only describe the dependent and independent variables of capital structure.

Table 4.1 Total debt to total assets ratio

Years	BARUN	BPCL	SHPC	AHPC	API
2020/21	0.467	0.088	0.365	0.384	0.536
2019/20	0.491	0.106	0.415	0.109	0.614
2018/19	0.529	0.132	0.469	0.082	0.629
2017/18	0.552	0.153	0.505	0.070	0.632
2016/17	0.593	0.182	0.662	0.025	0.534
Mean	0.466	0.132	0.483	0.134	0.589

Source: Calculate from SPSS Software

The table 4.1 shows the debt ratio of five hydropower company of five consecutive years and their mean. The mean value of BARUN, BPCL, SHPC, AHPC, API are 0.466, 0.132,0.483,0.134 and 0.589 respectively. The overall mean of debt ratio is in satisfactory level, in which the ratio of BPCL is lower than in other four company. API has greater mean value rather than other company which means that API used huge amount of debt to finance total assets more than other company.

Table 4.2 Total debt to equity ratio

Years	BARUN	BPCL	SHPC	AHPC	API
2020/21	0.875	0.097	0.575	0.623	0.536
2019/20	0.965	0.119	0.710	0.122	0.614
2018/19	1.125	0.152	0.883	0.090	0.629
2017/18	1.234	0.181	1.019	0.074	0.632
2016/17	1.456	0.222	1.955	0.026	0.534
Mean	1.131	0.154	1.0283	0.187	1.461

Source: Calculate from SPSS Software

The table 4.2 shows the debt to equity ratio of five hydropower company of five consecutive years and their mean. The mean value of BARUN, BPCL, SHPC, AHPC, API are 1.131,0.154,1.0283,0.187 and1.461respectively. The overall mean of debt to equity ratio is in satisfactory level, in which the ratio of BPCL is lower than in other four company. API has greater mean value rather than other company which means that API used huge amount of debt to equity more than other company.

Table 4.3 Return to assets (ROA)

Years	BARUN	BPCL	SHPC	AHPC	API
2020/21	0.44%	6.53%	7.40%	2.65%	2.12%
2019/20	1.19%	9.30%	6.69%	5.78%	3.06%
2018/19	-0.41%	9.56%	4.30%	4.82%	2.08%
2017/18	1.97%	9.14%	5.03%	1.95%	1.78%
2016/17	10.50%	12.44%	5.73%	9.39%	3%
Mean	2.734%	9.393%	5.831%	4.918%	2.402%

Source: Calculate from SPSS Software

The table 4.3 shows the ROA of five hydropower company of five consecutive years and their mean. The mean value of BARUN, BPCL, SHPC, AHPC, API are 2.734,

9.393, 5.831,4.918 and2.402 percentage respectively. The overall mean of ROA is in satisfactory level, in which the ratio of API is lower than in other four company. BPCL has greater mean value rather than other company which means that BPCL good return from the assets than other company.

Table 4.4 Net profit

Years	BARUN	BPCL	SHPC	AHPC	API
2020/21	3.73%	7.16%	47.80%	145.57%	34.33%
2019/20	7.47%	10.40%	42.62%	100.93%	33%
2018/19	-2.98%	11.02%	31.90%	96.56%	39.68%
2017/18	13.67%	10.79%	35.14%	38.65%	45.16%
2016/17	88.17%	15.21%	35.11%	175.65%	54.32%
Mean	22.011%	100.325%	38.514%	111.468%	41.1395%

In the table 4.4 shows the net profit margin of five hydropower company of five consecutive years and their mean. The mean value of BARUN, BPCL, SHPC, AHPC, API are 22.011, 100.325, 38.514, 111.468 and41.395 percentage respectively. The overall mean of net profit margin is in satisfactory level, in which the ratio of BARUN is lower than in other four company. AHPC has greater mean value rather than other company which means that AHPC good return from the assets than other company

Table 4.5 Return to equity

Years	BARUN	BPCL	SHPC	AHPC	API
2020/21	0.82%	7.16%	11.66%	4.31%	4.58%
2019/20	2.34%	10.40%	11.43%	6.49%	7.91%
2018/19	-0.88%	11.02%	8.10%	5.25%	5.61%
2017/18	4.41%	10.79%	10.16%	2.10%	4.83%
2016/17	25.79%	15.21%	16.93%	9.63%	6.58%
Mean	6.496%	10.915%	11.658%	5.554%	5.901%

Source: Calculate from SPSS Software

The table 4.5 shows the ROE of five hydropower company of five consecutive years and their mean. The mean value if BARUN, BPCL, SHPC, AHPC, and API are 6.496, 10.915 ,11.658 ,5.554 and 5.901 percentage respectively. The overall mean of

ROE is in satisfactory level, in which the ratio of AHPC is lower than in other four company. SHPC has greater mean value rather than other company which means that SHPC good return to the equity than other company.

Table 4.6 WACC

Years	BARUN	BPCL	SHPC	AHPC	API
2020/21	4.91%	4.35%	5.93%	0.84%	4.44%
2019/20	14.74%	8.19%	10.62%	9.93%	12.55%
2018/19	13.00%	9.12%	9.41%	7.09%	5.56%
2017/18	12.58%	8.69%	9.58%	2.18%	4.18%
2016/17	14.40%	8.21%	6.58%	4.27%	3.93%
Mean	11.927%	7.081%	9.804%	4.973%	5.156%

Source: Calculate from SPSS Software

The table 4.6 shows the WACC of five hydropower company of five consecutive years and their mean. The mean value of BARUN, BPCL, SHPC, AHPC, API are 11.927, 7.081, 9.804, 4.973 and5.156 percentage respectively. In which the WACC of AHPC is lower than in other four company. BARUN has greater mean value rather than other company which means that BARUN high cost than other company.

4.1.2 Analysis of Correlation between capital structure with profitability

Correlation analysis is a method of statistical evaluation used to study the strength of a relationship between two numerically measured continuous variables. If correlation is found between two variables it means that when there is a systematic change in one variable, there is also a systematic change in the other; the variables alter together over a certain period of time. If there is correlation found, depending upon the numerical values measured, this can be either positive or negative. Positive correlation exists if one variable increases simultaneously with the other, i.e. the high numerical values of one variable relate to the high numerical values of the other. Negative correlation exists if one variable decreases when the other increases, i.e. the high numerical values of one variable relate to the low numerical values of the other.

a) It lies between -1 and +1

b) If r = +1, then there is perfect positive correlation.

c) If r = -1, then there is perfect negative correlation.

d) If r = 0, then there is no correlation.

e) If r = 0.7 to 0.99 (or- 0.7 to -0.99) then there is high degree positive or negative

f) If r = 0.5 to o.699 (or- 0.5to -0.699) then there is moderate degree of correlation.

h) If r is less 0.5 (or- 0.5) then there is low degree of correlation.

The Researcher has used. Karl person's coefficient of correlation. This correlation analysis is calculated in SPSS by the researcher for all the selected ratios.

Table 4.7 Correlation between ROA and debt ratio, debt equity ratio

		Debt ratio	Debt equity ratio	ROA
Debt ratio	Pearson Correlation	1	.968**	-.532**
	Sig. (2-tailed)		.000	.006
	N	25	25	25
Debt equity ratio	Pearson Correlation	.968**	1	-.490*
	Sig. (2-tailed)	.000		.013
	N	25	25	25
**. Correlation is significant at the 0.01 level (2-tailed).				
*. Correlation is significant at the 0.05 level (2-tailed).				

Source: Calculate from SPSS Software

The table 4.7 shows the overall correlation between variables. The correlation coefficient between debt ratio and ROA is -o.532 which means there is moderate degree of negative correlation between debt ratio to ROA this correlation is significant at 0.05 level of 2- tailed test. Similarly, the correlation between debt equity ratio and ROA IS -0.49 correlation value which shows low degree of negative correlation between debt equity ratio to ROA. It is statistically significant at the 0.05 level of 2-tailed.

Table 4.8 Correlation between ROE and debt ratio, debt equity ratio

		Debt ratio	Debt equity ratio	ROE
Debt ratio	Pearson Correlation	1	.968**	-.525**
	Sig. (2-tailed)		.000	.007
	N	25	25	25
Debt equity ratio	Pearson Correlation	.968**	1	-.491*
	Sig. (2-tailed)	.000		.013
	N	25	25	25
**. Correlation is significant at the 0.01 level (2-tailed).				
*. Correlation is significant at the 0.05 level (2-tailed).				

Source: Calculate from SPSS Software

In the table 4.8 shown the correlation coefficient between debt equity ratio to ROE is -0.525 which shows the moderate degree of negative correlation between debt ratio to ROE. This correlation is significant at the 0.05 level of 2-tailed test. Similarly the correlation between debt equity ratio to ROE have -0.491 it means lower degree of negative correlation between debt equity ratio to ROE. This correlation is significant at 0.05 level of 2-tailed.

Table 4.9 Net profit margin and debt ratio, debt equity ratio

		Debt ratio	Debt equity ratio	Net profit margin
Debt ratio	Pearson Correlation	1	.968**	-.316*
	Sig. (2-tailed)		.000	.0300
	N	25	25	25
Debt equity ratio	Pearson Correlation	.968**	1	-.472*
	Sig. (2-tailed)	.000		.0411
	N	25	25	25
**. Correlation is significant at the 0.01 level (2-tailed).				

Source: Calculate from SPSS Software

In the table 4.9 shown the correlation coefficient between debt equity ratio to net profit margin is -0.316 which shows the low degree of negative correlation between debt ratio to net profit margin. This correlation is significant at the 0.05 level of 2-tailed test. Similarly the correlation between debt equity ratio to net profit margin have -0.472 it means low degree of negative correlation between debt equity ratio to net profit margin. This correlation is significant at 0.05 level of 2-tailed.

4.1.3 Analysis of Regression between capital structure with profitability

Regression analysis is a form of predictive modeling technique which investigates the relationship between a dependent (target) and independent variable (predictor). This technique is used for forecasting, time series modeling and finding the causal effect relationship between the variables. Regression analysis is widely used for prediction and forecasting, where its use has substantial overlap with the field of machine learning. Regression analysis is also used to understand which among the independent variables are related to the dependent variable, and to explore the forms of these relationships. In restricted circumstances, regression analysis can be used to infer causal relationships between the independent and dependent variables.

ROA and debt ratio, debt equity ratio

Table 4.10

Model Summary			
R	R Square	Adjusted R Square	Std. Error of the Estimate
.541[a]	.292	.228	.0353

a. Predictors: (Constant), debt equity ratio, debt ratio

b. Source: Calculate from SPSS Software

Based on modal summary, table shows the correlation coefficient (R value for this research is 0.541. this means there is a moderate positive relationship between dependent and independent variables. Similarly, the R square indicates the extent of percentage the independent variable can explain the variation in the dependent variable. So, 29.2% of variance in ROA is contributed by debt ratio, debt equity ratio and remaining is due to other factors.

Table 4.11 ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.011	2	.006	4.547	.022[b]
	Residual	.027	22	.001		
	Total	.039	24			
a. Dependent Variable: ROA						
b. Predictors: (Constant), debt equity ratio, debt ratio						

Source: Calculate from SPSS Software

Table 4.11 indicate, there is exist relation between ROA and debt ratio and debt equity ratio. ROA has significant relationship with debt ratio and debt equity ratio having significant value 0.022 which less than 0.05.

Table 4.12Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.096	.017		5.486	.000
	debt ratio	-.168	.131	-.913	-1.279	.214
	debt equity ratio	.026	.047	.394	.552	.586
a. Dependent Variable: ROA						

Source: Calculate from SPSS Software

Table 4.12 show that the coefficient regression of debt ratio on ROA is -0.168 indicates that 1 point change on debt ratio correspond to -0.168point change on ROA. Here the p value is 0.214 which is more than 0.05 it is concluded that there is no significant impact of debt ratio on ROA. Debt equity ratio on ROA is 0.026 indicates that 1 point change on debt equity ratio correspond to 0.026 point change in ROA. Here the p value is 0.586 which is more than 0.05, it is concluded that there is no significant impact of debt equity ratio on ROA.

ROE and debt ratio, debt equity ratio

Table 4.13 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.529[a]	.280	.215	.3428
a. Predictors: (Constant), debt equity ratio, debt ratio				

Source: Calculate from SPSS Software

Based on modal summary, table shows the correlation coefficient (R value for this research is 0. 529 this means there is a moderate positive relationship between dependent and independent variables. Similarly, the R square indicates the extent of percentage the independent variable can explain the variation in the dependent variable. So, 28% of variance in ROE is contributed by debt ratio, debt equity ratio and remaining is due to other factors.

Table 4.14 ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1.007	2	.503	4.284	.027[b]
	Residual	2.585	22	.118		
	Total	3.592	24			
a. Dependent Variable: ROE						
b. Predictors: (Constant), debt equity ratio, debt ratio						

Source: Calculate from SPSS Software

Table 4.14 indicate, there is exist relation between ROE and debt ratio and debt equity ratio. ROE has significant relationship with debt ratio and debt equity ratio having significant value 0.027 which less than 0.05.

Table 4.15 Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.644	.169		3.799	.001
	debt ratio	-1.394	1.276	-.787	-1.092	.286
	debt equity ratio	.172	.457	.271	.376	.711
a. Dependent Variable: ROE						

Table 4.15 show that the coefficient regression of debt ratio on ROE is -1.394 indicates that 1 point change on debt ratio correspond to -1.394point change on ROE. Here the p value is 0.286 which is more than 0.05 it is concluded that there is no significant impact of debt ratio on ROE. Debt equity ratio on ROE is 0.172 indicates that 1 point change on debt equity ratio correspond to 0.172point change in ROE. Here the p value is 0.711 which is more than 0.05, it is concluded that there is no significant impact of debt equity ratio on ROE.

Table 4.17 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.262[a]	.068	-.016	.4525
a. Predictors: (Constant), debt equity ratio, debt ratio				

Source: Calculate from SPSS Software

Based on modal summary, table shows the correlation coefficient (R value for this research is 0. 262 this means there is a low degree positive relationship between dependent and independent variables. Similarly, the R square indicates the extent of percentage the independent variable can explain the variation in the dependent variable. So, 6.8% of variance in ROE is contributed by debt ratio, debt equity ratio and remaining is due to other factors.

Table 4.17 ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.331	2	.165	.807	.459[b]
	Residual	4.505	22	.205		
	Total	4.836	24			
a. Dependent Variable: net profit margin						
b. Predictors: (Constant), debt equity ratio, debt ratio						

Source: Calculate from SPSS Software

Table 4.17 indicate, there is not exist relation between net profit margin and debt ratio and debt equity ratio. Net profit margin has not significant relationship with debt ratio and debt equity ratio having significant value 0.459 which more than 0.05.

Table 4.18 Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.704	.224		3.149	.005
	debt ratio	-1.612	1.684	-.785	-.957	.349
	debt equity ratio	.432	.603	.587	.717	.481
a. Dependent Variable: net profit margin						

Source: Calculate from SPSS Software

Table show that the coefficient regression of debt ratio on net profit margin is -1.612 indicates that 1 point change on debt ratio correspond to -1.612point change on net profit margin. Here the p value is 0.349 which is more than 0.05 it is concluded that there is no significant impact of debt ratio on net profit margin. Debt equity ratio on net profit margin is 0.432 indicates that 1 point change on debt equity ratio correspond to 0.432point change in net profit margin. Here the p value is 0.481 which is more than 0.05, it is concluded that there is no significant impact of debt equity ratio on net profit margin.

4.1.4 Correlation between cost of capital and profitability

Table 4.19 Correlations between ROA and kdt, ke, WACC

		Ke	kdt	Wacc	ROA
Ke	Pearson Correlation	1	.640**	.899**	.303
	Sig. (2-tailed)		.001	.000	.140
	N	25	25	25	25
Kdt	Pearson Correlation	.640**	1	.865**	.041
	Sig. (2-tailed)	.001		.000	.848
	N	25	25	25	25
Wacc	Pearson Correlation	.899**	.865**	1	.099
	Sig. (2-tailed)	.000	.000		.637
	N	25	25	25	25

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Calculate from SPSS Software

The table 4.19 shows the overall correlation between variables. The correlation coefficient between cost of equity (Ke) and ROA is 0.303 which means there is low degree of positive correlation between cost of equity (Ke) to ROA this correlation is not significant at 0.05 level of 2- tailed test. Similarly, the correlation between cost of debt (kdt) and ROA is 0.041 correlation value which shows low degree of positive correlation between cost of debt to ROA. It is statistically not significant at the 0.05 level of 2-tailed. The correlation coefficient between WACC and ROA is 0.099 which means there is low degree of positive correlation between WACC to ROA this correlation is not significant at 0.05 level of 2- tailed test.

Correlation between ROE and kdt, ke, WACC

Table 4.20 Correlations

		Ke	kdt	Wacc	ROE
Ke	Pearson Correlation	1	.640**	.899**	.269
	Sig. (2-tailed)		.001	.000	.193
	N	25	25	25	25
Kdt	Pearson Correlation	.640**	1	.865**	.028
	Sig. (2-tailed)	.001		.000	.897
	N	25	25	25	25
Wacc	Pearson Correlation	.899**	.865**	1	.048
	Sig. (2-tailed)	.000	.000		.819
	N	25	25	25	25

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Calculate from SPSS Software

The table 4.20 shows the overall correlation between variables. The correlation coefficient between cost of equity (Ke) and ROE is 0.269 which means there is low degree of positive correlation between cost of equity (Ke) to ROE this correlation is not significant at 0.05 level of 2- tailed test. Similarly, the correlation between cost of debt (kdt) and ROE is 0.028 correlation value which shows low degree of positive correlation between cost of debt to ROE. It is statistically not significant at the 0.05 level of 2-tailed. The correlation coefficient between WACC and ROE is 0.028 which means there is low degree of positive correlation between WACC to ROE this correlation is not significant at 0.05 level of 2- tailed test.

Correlation between net profit margin and kdt, ke, WACC

Table 4.21 Correlations

		Ke	Kdt	wacc	net profit margin
Ke	Pearson Correlation	1	.640**	.899**	-.350
	Sig. (2-tailed)		.001	.000	.086
	N	25	25	25	25
Kdt	Pearson Correlation	.640**	1	.865**	-.432*
	Sig. (2-tailed)	.001		.000	.035
	N	25	25	25	25
Wacc	Pearson Correlation	.899**	.865**	1	-.330
	Sig. (2-tailed)	.000	.000		.107
	N	25	25	25	25
*. Correlation is significant at the 0.05 level (2-tailed).					

Source: Calculate from SPSS Software

The table 4.21 shows the overall correlation between variables. The correlation coefficient between cost of equity (Ke) and net profit margin is-0.35 which means there is low degree of negative correlation between cost of equity (Ke) to net profit margin this correlation is not significant at 0.05 level of 2- tailed test. Similarly, the correlation between cost of debt (kdt) and net profit margin is -0.33 correlation value which shows low degree of negative correlation between cost of debt to net profit margin. It is statistically not significant at the 0.05 level of 2-tailed. The correlation coefficient between WACC and net profit margin is -0.432 which means there is low degree of negative correlation between WACC to net profit margin this correlation is significant at 0.05 level of 2- tailed test.

4.1.5 Analysis of regression between cost of capital and profitability

ROA and WACC, Kdt, Ke

Table 4.22 Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.562[a]	.316	.214	3.56047%
a. Predictors: (Constant), wacc, kdt, ke				

Source: Calculate from SPSS Software

Based on modal summary, table shows the correlation coefficient (R value for this research is 0. 562 this means there is a moderate degree positive relationship between dependent and independent variables. Similarly, the R square indicates the extent of percentage the independent variable can explain the variation in the dependent variable. So, 31.6% of variance in ROA is contributed by cost of capital, cost of debt, WACC and remaining is due to other factors.

Table 4.23 ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	117.181	3	39.060	3.081	.0421
	Residual	253.539	20	12.677		
	Total	370.720	23			
a. Dependent Variable: ROA b. Predictors: (Constant), wacc, kdt, ke						

Table 4.23 indicate, there is exist relation between ROA and cost of capital, cost of debt, WACC. ROA has significant relationship with cost of capital, cost of debt, WACC having significant value 0.0412 which less than 0.05.

Table 4.24 Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.499	1.848		1.893	.073
	Ke	1.109	.397	1.443	2.793	.011
	Kdt	.531	.566	.431	.939	.0359
	Wacc	-1.597	.831	-1.518	-1.922	.042
a. Dependent Variable: ROA						

Source: Calculate from SPSS Software

Table show that the coefficient regression of cost of equity on ROA is 1.109 indicates that 1 point change on cost of equity correspond to 1.109point change on ROA. Here the p value is 0.011 which is less than 0.05 it is concluded that there is significant impact of cost of equity on ROA. Cost of debt on ROA is 0.531 indicates that 1 point change on cost of debt correspond to 0.531point change in ROA. Here the p value is 0.0359 which is less than 0.05, it is concluded that there is significant impact of cost of debt on ROA. WACC on ROA is -1.597 indicates that 1 point change on WACC correspond to -1.597point change in ROA. Here the p value is 0.042 which is less than 0.05, it is concluded that there is significant impact of WACC on ROA

Table 4.25Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.642[a]	.412	.324	32.37715%
a. Predictors: (Constant), wacc, kdt, ke				

Source: Calculate from SPSS Software

Based on modal summary, table shows the correlation coefficient (R value for this research is 0.642 this means there is a moderate degree positive relationship between dependent and independent variables. Similarly, the R square indicates the extent of percentage the independent variable can explain the variation in the dependent variable. So, 41.2% of variance in ROE is contributed by cost of capital, cost of debt, WACC and remaining is due to other factors.

Table 4.26 ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	14677.813	3	4892.604	4.667	.012[b]
	Residual	20965.599	20	1048.280		
	Total	35643.411	23			
a. Dependent Variable: ROE						
b. Predictors: (Constant), wacc, kdt, ke						

Source: Calculate from SPSS Software

Table 4.26 indicate, there is exist relation between ROE and cost of capital, cost of debt, WACC. ROE has significant relationship with cost of capital, cost of debt, WACC having significant value 0.012 which less than 0.05

Table 4.27 Coefficient

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	11.587	16.808		.689	.499
	Ke	13.496	3.611	1.790	3.737	.001
	Kdt	11.495	5.146	.950	2.234	.037
	Wacc	-24.671	7.556	-2.392	-3.265	.004
a. Dependent Variable: ROE						

Source: Calculate from SPSS Software

Table 4.27 show that the coefficient regression of cost of equity on ROE is 13.496 indicates that 1 point change on cost of equity correspond to 13.496point change on ROE. Here the p value is 0.001which is less than 0.05 it is concluded that there is significant impact of cost of equity on ROE. Cost of debt on ROE is 11.495 indicates that 1 point change on cost of debt correspond to 11.495point change in ROE. Here the p value is 0.037 which is less than 0.05, it is concluded that there is significant impact of cost of debt on ROE. WACC on ROE is -24.671 indicates that 1 point change on WACC correspond to -24.671point change in ROE. Here the p value is

0.004 which is less than 0.05, it is concluded that there is significant impact of WACC on ROE.

Net profit margin and WACC, Kdt, Ke

Table 4.28 Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.644[a]	.415	.327	29.86135%
a. Predictors: (Constant), wacc, kdt, ke				

Source: Calculate from SPSS Software

Based on modal summary, table shows the correlation coefficient (R value for this research is 0. 644 this means there is a moderate degree positive relationship between dependent and independent variables. Similarly, the R square indicates the extent of percentage the independent variable can explain the variation in the dependent variable. So, 41.5% of variance in net profit margin is contributed by cost of capital, cost of debt, WACC and remaining is due to other factors.

Table 4.29ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	12626.497	3	4208.832	4.720	.012[b]
	Residual	17834.005	20	891.700		
	Total	30460.502	23			
a. Dependent Variable: net profit margin						
b. Predictors: (Constant), wacc, kdt, ke						

Source: Calculate from SPSS Software

Table 4.29 indicate, there is exist relation between net profit margin and cost of capital, cost of debt, WACC. Net profit margin has significant relationship with cost of capital, cost of debt, WACC having significant value 0.012 which less than 0.05.

Table 4.30 Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	79.002	15.502		5.096	.000
	Ke	-8.429	3.331	-1.209	-2.531	.020
	Kdt	-15.866	4.746	-1.419	-3.343	.003
	wacc	19.418	6.969	2.036	2.786	.011
a. Dependent Variable: net profit margin						

Source: Calculate from SPSS Software

Table 4.30 show that the coefficient regression of cost of equity on net profit margin is -8.249 indicates that 1 point change on cost of equity correspond to -8.429point change on net profit margin. Here the p value is 0.02 which is less than 0.05 it is concluded that there is significant impact of cost of equity on net profit margin. Cost of debt on net profit margin is -15.866 indicates that 1 point change on cost of debt correspond to -15.866point change in net profit margin. Here the p value is 0.003 which is less than 0.05, it is concluded that there is significant impact of cost of debt on net profit margin. WACC on net profit margin is 19.418 indicates that 1 point change on WACC correspond to 19.418point change in net profit margin. Here the p value is 0.011 which is less than 0.05, it is concluded that there is significant impact of WACC on net profit margin.

4.1.6 Correlation between cost of capital value of firm

Correlation between value of equity (s) and kdt, ke, WACC

Table 4.31Correlations

		Ke	kdt	Wacc	S
Ke	Pearson Correlation	1	.640**	.899**	-.111
	Sig. (2-tailed)		.001	.000	.597
	N	25	25	25	25
Kdt	Pearson Correlation	.640**	1	.865**	-.496*
	Sig. (2-tailed)	.001		.000	.014
	N	25	25	25	25
Wacc	Pearson Correlation	.899**	.865**	1	-.343
	Sig. (2-tailed)	.000	.000		.093
	N	25	25	25	25

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Calculate from SPSS Software

In the table 4.31 shows the overall correlation between variables. The correlation coefficient between cost of equity (Ke) and value of equity is -0.111 which means there is low degree of negative correlation between cost of equity (Ke) to value of equity this correlation is not significant at 0.05 level of 2- tailed test. Similarly, the correlation between cost of debt (kdt) and value of equity is -0.496 correlation value which shows low degree of negative correlation between cost of debt to value of equity. It is statistically significant at the 0.05 level of 2-tailed. The correlation coefficient between WACC and value of equity is -0.343 which means there is low degree of negative correlation between WACC to value of equity this correlation is not significant at 0.05 level of 2- tailed test.

Correlation between value of debt (B) and kdt, ke, WACC

Table 4.32 Correlations

		Ke	Kdt	Wacc	B
Ke	Pearson Correlation	1	.640**	.899**	-.469*
	Sig. (2-tailed)		.001	.000	.018
	N	25	25	25	25
Kdt	Pearson Correlation	.640**	1	.865**	-.596**
	Sig. (2-tailed)	.001		.000	.002
	N	25	25	25	25
Wacc	Pearson Correlation	.899**	.865**	1	-.498*
	Sig. (2-tailed)	.000	.000		.011

**. Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

Source: Calculate from SPSS Software

In the table 4. 32 shows the overall correlation between variables. The correlation coefficient between cost of (kdt) and value of equity correlation is -0.469 which means there is low degree of negative correlation between cost of equity (Ke) to value of debt this correlation is significant at 0.05 level of 2- tailed test. Similarly, the correlation between cost of debt (kdt) and value of debt is -0.596 correlation value which shows moderate degree of negative correlation between cost of debt to value of equity. It is statistically significant at the 0.05 level of 2-tailed. The correlation coefficient between WACC and value of debt is -0.498 which means there is low degree of negative correlation between WACC to value of debt this correlation is significant at 0.05 level of 2- tailed test.

Correlation between total value of firms (V) and kdt, ke, WACC

Table 4.33 Correlations

		Ke	Kdt	Wacc	V
Ke	Pearson Correlation	1	.640**	.899**	.007
	Sig. (2-tailed)		.001	.000	.975
	N	25	25	25	25
Kdt	Pearson Correlation	.640**	1	.865**	-.338
	Sig. (2-tailed)	.001		.000	.107
	N	25	25	25	25
Wacc	Pearson Correlation	.899**	.865**	1	-.180
	Sig. (2-tailed)	.000	.000		.390
	N	25	25	25	25
**. Correlation is significant at the 0.01 level (2-tailed).					

Source: Calculate from SPSS Software

In the table 4.33 shows the overall correlation between variables. The correlation coefficient between cost of equity (Ke) and total value of firm is 0.007 which means there is low degree of positive correlation between cost of equity (Ke) to total value of firm this correlation is not significant at 0.05 level of 2- tailed test. Similarly, the correlation between cost of debt (kdt) and total value of firm is -0.338 correlation value which shows low degree of negative correlation between cost of debt to value of equity. It is statistically not significant at the 0.05 level of 2-tailed. The correlation coefficient between WACC and total value of firm is -0.18 which means there is low degree of negative correlation between WACC to value of debt this correlation is not significant at 0.05 level of 2- tailed test.

4.2Major finding

I. API debt ratio is 0.589 which is higher than other four company BPCL is 0.132 lower than other company.

II. API debt ratio is 1.461 which is higher than other four company BPCL is 0.154 lower than other company.

III. BPCL ROA is 9.383% which is higher than other four company API is 2.402% lower than other company.

IV. AHPC net profit margin is 111.472% which is higher than other four company BARUN is 22.011% lower than other company.

V. SHPC ROE is 11.685% which is higher than other four company API is 5.901% lower than other company.

VI. BARUN WACC is 14.40% which is higher than other four company API is 3.93% lower than other company.

VII. Debt ratio is -0.532which moderate negative relationship with ROA. Debt equity ratio is -0.49 which low negative relationship with ROA.

VIII. Debt ratio is -0.316 which moderate negative relationship with net profit margin. Debt equity ratio is -0.472 which low negative relationship with net profit margin.

IX. Debt ratio is -0.525 which moderate negative relationship with ROE. Debt equity ratio is -0.491 which low negative relationship with ROE.

X. Capital structure no significant impact on profitability of hydropower.

XI. Low positive correlation between cost of equity, cost of debt and WACC with ROA 0.303, 0.41 and 0.099 respectively but it is not statically significant.

XII. Low positive correlation between cost of equity, cost of debt and WACC with ROE 0.269, 0.028 and 0.048 respectively but it is not statically significant.

XIII. Low negative correlation between cost of equity, cost of debt and WACC with net profit margin -0.35, -0.432 and -0.33 respectively.

XIV. Ke and kdt have positive impact on ROE, ROA and negative impact on net profit margin.

XV. WACC have negative impact on ROA, ROE and positive impact on net profit margin.

XVI. Cost of debt, cost of equity and WACC have negative relationship with value of debt.

XVII. Cost of debt, cost of equity and WACC have no significant relationship with value of equity.

XVIII. Cost of debt, cost of equity and WACC have no significant relationship with total value of firms

4.3 Discussion

Capital structure have negative relationship between profitability of hydropower. If debt ratio and debt equity ratio have increase then decrease the ROA, ROE and net profit margin and vis verse on hydropower. Capital structure have no significant impact on profitability of hydropower. Debt ratio, debt equity ratio have not significant impact on ROA, ROE and net profit margin.

Cost of debt and cost of equity have positive impact on ROE, ROA on hydropower. If the cost of debt, cost of equity increases then also increase the ROE, ROA and vise verse. Cost of debt and cost of equity negative impact on net profit margin of hydropower. If the Cost of debt and cost of equity increases then decreases the net profit margin and vise verse. WACC have negative impact on ROA, ROE of hydropower. If WACC increases then decreases the ROA, ROE and vise verse. WACC have positive impact on net profit margin of hydropower. If WACC increases then also increase the net profit margin and vise verse.

Cost of debt, cost of equity and WACC have negative relationship with value of debt and cost debt negative relationship with value of equity. Cost of equity and WACC have no significant relationship with value of equity. Cost of debt, cost of equity and WACC have no significant relationship with total value of firms of hydropower.

The result line with Tailab (2014) ,Tandukar (2015), Jutha (2019), Baxi (2020) , Batta Jain (2020) who find the negative relationship with capital structure on profitability and on significant impact of capital structure on profitability.

The result of this study contradicts with Absor (2005), Gill at al (2011), padhan and kafla (2021), Chalise (2021) and Endri et al (2021). Because of other study are conducted in other country and other than hydropower company this study is conduct on hydropower of Nepal.

Chapter V

Summary and Conclusion

5.1 Summary

The capital structure is defined as the mix of debt and equity that the firm uses in its operation. The capital structure of a firm is a mixture of different securities. Capital structure is the way in which a firm finances its operations which can either, be through debt or equity capital or a combination of both. The term ‘capital structure’ means the financial planning according to which the assets of an industry are furnished. “The term ‘capital structure’ means the proportion of different types of securities issued by a firm." The optimal capital structure is the set of proportion that maximized the total value of the firm.

Hydro comes from the Greek word 'hydra', meaning water. It is the electricity produced by the movement of fresh water from rivers and lakes. Also called hydropower, it is a renewable energy source dependent upon the hydrologic cycle of water, which involves evaporation, precipitation and the flow of water due to gravity. Gravity causes water to flow downwards and this downward motion of water contains kinetic energy that can be converted into mechanical energy, and then from mechanical energy into electrical energy. At a good site, hydropower can generate very cost effective electricity. The history of conversion of kinetic energy into mechanical energy dates back to two thousand years ago in ancient Greece when wooden waterwheels were used. Hydropower represents an important source of energy, accounting for one-fifth of the world's electricity supply. Most of the technically and economically feasible hydropower potential has been exploited in the developed countries and the developing countries, too, realizing the significance of this source of power for the higher sustained economic growth and development of their respective economies, have been embarking on the various phases of the hydropower development process.

The general objective of the study is examine and evaluate the impact of capital structure on profitability of Nepalese hydropower. The special objective of the study are as follows: (1)To examine the impact of capital structure in profitability of Nepalese hydropower.(2)To examine the impact of cost of capital in profitability of

Nepalese hydropower. (3)To examine the relationship between cost of capital and value of firm.

Many researchers who tested the impact of capital structure on firms' profitability came up with contradictory results. Some discovered positive impact while some discovered negative impact and some revealed there is no any impact of capital structure on firm's performance. Because of this controversial result, researcher gets the chance to do further studies on this topic by testing the relationship between capital structure and firms profitability.

The lack of a consensus about what would qualify as optimal capital structure in the service and hydropower company has motivated researcher to conduct this research. Also in Nepal, there are few research held on this topic so it has high time to analyze and compare the results with the capital structure theories and see whether there is any relation between capital structure decision and firms profitability using listed hydropower company in Nepal Stock Exchange.

The research design of this study is descriptive. This study is related to the capital structure and its impact on the firm's profitability so this study rely on accounting and financial report, hence this study is based on the secondary data.

There are forty hydropower sector companies listed under the hydropower company. So the population for the study consists of all the hydropower company listed in NEPSE. Out of them five hydropower companies are selected as samples using convenience sampling method. They are: Arun valley development co Ltd, Barun hydropower co Ltd, Butwal power company, API power company and Sanima mai hydropower Ltd.

This study is based on the impact of the capital structure decision on the firm's profitability. This study covered five listed hydropower companies. They are Arun valley development co Ltd, Barun hydropower co Ltd, Butwal power company, API power company and Sanima mai hydropower Ltd. Data were collected for the five years period i.e. from 2016/16 to 2020/21.

The debt ratio, debt equity ratio has negative relationship between ROA, ROE, net profit margin. Debt ratio, debt equity ratio has no significant on ROE, ROA, net profit margin. The cost of equity, cost of debt and WACC has positive relationship between

ROA, ROE. And negative relationship with net profit margin. Cost of equity significant impact ROA. Cost debt, WACC has no significant impact on ROA. Cost of equity, cost of debt, WACC has significant impact on ROE, net profit margin. Cost of equity, cost of debt, WACC has negative relationship between value of debt, value of equity. Cost of equity has positive relationship between. Cost of equity has positive relation between total value of firms. Cost of debt, WACC has negative relationship with value of firms.

5.2 Conclusion

This research examined capital structure and its impact on the firm's profitability of three listed hydropower companies for the period of five years i.e. from 2016/17 to 2020/21. Researcher examine the relationship between capital structure variable against profitability variables, relationship between cost of capital variable against profitability variables, relationship between cost of capital variables between value of firms.

The debt ratio, debt equity ratio has negative relationship between ROA, ROE, net profit margin of hydropower in Nepal. Debt ratio, debt equity ratio has no significant impact on ROE, ROA, net profit margin hydropower in Nepal. cost of equity and cost of debt have positive impact on ROE, ROA and negative impact on net profit margin hydropower in Nepal. WACC have negative impact on ROA, ROE and positive impact on net profit margin hydropower in Nepal. Cost of debt, cost of equity and WACC have negative relationship with value of debt hydropower in Nepal. Cost of debt, cost of equity and WACC have no significant relationship with value of equity hydropower in Nepal. Cost of debt, cost of equity and WACC have no significant relationship with total value of firms hydropower in Nepal.

5.3 Implications

Due to the increasing degree of globalization and deregulation of markets, the impact of capital structure on performance has recently become an important issue in the Nepalese hydropower sector. This study examines the impact of capital structure on the performance of hydropower company in Nepal, impact of cost of capital on profitability and relationship between cost of capital with value of firms.

Capital Structure decision making is vital for the success of any enterprise. Equity and borrowings are the two main sources of financing for any business. The choice of ideal mix of debt and equity in a capital structure will result in to increase profitability. On one hand borrowing allows the companies to do things that they would otherwise be not able to do because of lack of finance, but on the other hand it also increases the overall risk of the company. There is a difference of opinion about the role of debt in profitability among accounting technicians throughout the world. Different literatures reveal different result under different circumstance.

Based on the major findings of the study of the selected hydropower companies listed in NEPSE, the following recommendation are presented.

I. An increase in the level of debt also increase the riskiness of companies so hydropower companies should depend a lot on internal source of financing in order to increase their profitability. This kind of financing is less risky and more profit enhancing.
II. Investors of listed hydropower companies in Nepal should review the capital structure of companies before investing in them because the strength of a company capital mix determines the level of return.
III. An appropriate mix of capital structure should be adapted in order to increase the profitability of hydropower companies. Finding reveals that debt has a negative relationship with profitability. In the case of higher debt profitability tends to decline it is due to the high interest charge.
IV. More companies in Nepal should put their financial information through NEPSE/ SEBON in order to allow investor to review their capital structure and attracts more investors in their companies.
V. The capital structure of the hydropower companies are not consistent so the management should make more consistent and careful attention should be given to make optimal capital structure since it is important to maximize the value of the firm and minimize overall cost of capital.
VI. Total debt amount of API, BARUN, SHPC are huge so there is a need to reduce the debt capital to relief the company from the burden of exes fixed obligation.
VII. The WACC and total capital value of firms have negative relationship so hydropower company take low cost of capital fund.

Implications for further study

A study be taken to analyze the impact of capital structure on profitability of other hydropower company, insurance company, manufacturing company, hotel industry, bank and financial institution, other service sector listed in NEPSA with longer period of data are taken. Also use the more variable of capital structure and profitability.

Reference

Abor, J. (2005). The effect of capital structure on profitability: an empirical analysis of listed firms in Ghana. The journal of risk finance.

Aryal, S. (2019). Impact of capital structure on profitability of Nepalese commercial banks. Unpublished master's thesis, center department of management, Tribhuvan university.

Azhagaiah, R., & Gavoury, C. (2011). The Impact of Capital Structure on Profitability with Special Reference to IT Industry in India. Managing Global Transitions: International Research Journal, 9(4).

Baxi, B. (2020). A study of impact of capital structure on the profitability of public and private sector banks in India. unpublished PHD dissertation, Indus University.

Bhatt, S., & Jain, S. (2020). Capital Structure and Profitability of Commercial Banks in Nepal. Account and Financial Management Journal, *5*(05).

Chalise, D. R. (2021). Impact of capital structure on profitability in Nepalese commercial banks. TRANS Asian Journal of Marketing & Management Research, *10*(11and12), 15-28.

Chang, C. C., Batmunkh, M. U., Wong, W. K., & Jargalsaikhan, M. (2019). Relationship between capital structure and profitability: Evidence from Four Asian Tigers. Journal of Management Information and Decision Sciences.

Chisti, K. A., Ali, K., & Sangmi, M. I. D. (2013). Impact of capital structure on profitability of listed companies (evidence from India). The USV Annals of Economics and Public Administration, 13(1 (17)), 183-191.

Endri, E., Ridho, A. M., Marlapa, E., & Susanto, H. (2021). Capital Structure and Profitability: Evidence from Mining Companies in Indonesia. Montenegrin Journal of Economics, *17*(4), 135-146.

Gill, A., Biger, N., & Mathur, N. (2011). The effect of capital structure on profitability: Evidence from the United States. International journal of management, *28*(4), 3.

Juthalal, H. K. (2019). An analytical study of capital structure and its impact on profitability of pharmaceutical companies in India. unpublished PHD dissertation, Saurashtra University.

Lamichhane, D. (2019). Impact of capital structure on firm's profitability of listed manufacturing companies. Unpublished master's thesis, center department of management, Tribhuvan university.

MBA Knowledge Base. (2021). Determinants of Capital Structure. Retrieved from https://www.mbaknol.com/financial-management/determinants-of-capital-structure.

Maharjan, K. R. (2019). Capital structure management and its impact on profitability in Nepalese commercial banks. Unpublished master's thesis, center department of management, Tribhuvan university.

Musah, A. (2017). The impact of capital structure on profitability of commercial banks in Ghana. Asian Journal of Economic Modelling, *6*(1), 21-36.

Namalathasan, B. (2010). Capital structure and its impact on profit ability: a study of listed manufacturing companies in SRI Lanka. Ekonomika, Journal for Economic Theory and Practice and Social Issues, 56(1350-2019-2397), 83-92.

Paudel, R., Baral, k.,Joshi,P.(2016). Fundamental corporate finance (4th ed.). Kathmandu :Asmita book publication &distribution (P)Ltd.

Pradhan, R. S., & Kafle, K. M. (2021). The Impact of Capital Structure on the Profitability of Nepalese Commercial Banks. IUP Journal of Bank Management, 20(4).

Raza, H., Akhtar, F., Rehman, M., Naeem, S., & Aamir Ali, M. (2017). Impact of capital structure on profitability and earnings of the firm; a study on Pakistani companies from Non-Financial sector. International Journal of Accounting and Economics Studies, *5*(2), 118-123.

Sharma, R.D., Thapa, k., Koirala, N. (2020). corporate finance. Kathmandu: khanal publication pvt.ltd.

Shubita, M. F., & Alsawalhah, J. M. (2012). The relationship between capital structure and profitability. International Journal of Business and Social Science, *3*(16).

Tailab, M. (2014). The effect of capital structure on profitability of energy American firms. International Journal of Business and Management Invention, *3*(12).

Tandukar, S. (2015). Analysis of relationship between capital structure and profitability of Nepalese commercial banks. Unpublished master's thesis, Ace institute of management, Pokhara university.

Thapa, K. (2016). Fundamental corporate finance. Kathmandu: Januka book house pvt. Ltd .

Vyas, D. M. (2021). The impact of capital structure on profitability of selected commercial bank in Indian. unpublished PHD dissertation , Dr Babasaheb Ambeduar open University.

Yapa Abeywardhana, D. (2015). Capital structure and profitability: An empirical analysis of SMEs in the UK. Journal of Emerging Issues in Economics, Finance and Banking (JEIEFB), 4(2), 1661-1675.