Capital Structure Analysis of Joint Venture Banks of Nepal

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Declaration

I hereby, declare that the work reported in this thesis entitled of **Capital Structure Analysis of Joint Venture Banks of Nepal** submitted to the office of Dean Faculty of Management T. U. Kathmandu, is my original work done in the form of partial fulfillment of the requirements for the Masters of Business studies (MBS) under the supervision Asst. Professor Bijay Prakash Sherestha of Saraswati multiple Campus, Lekhnath Marga, Kathmandu.

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VIVA- VOCE SHEET

We have conducted the viva-voce examination of the thesis

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Capital Structure Analysis of Joint Venture Banks of Nepal

And found the thesis to be the original work of the student written in accordance with the prescribed format. We recommend the thesis to be accepted as partial fulfillment of the requirement for **Master's degree of Business Studies (MBS)**

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RECOMMENDATION

This is to certify that the thesis

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Has been prepared as approved by this department in the prescribed format of

Faculty of Management. This thesis is forwarded for examination.

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Abbreviations

AD	Anon Dominic
BS	Bikram Sambat
IMF	International Monitory Fund
FY	Fiscal Year
NIBL	Nepal Investment Bank Limited
AND/N	Agriculture Development Bank Limited
SBI	Nepal SBI Bank Limited
NIC	Nepal Industrial and Commerce Bank Limited
GDP	Gross Domestic Product
USA	United States of America
ATM	Automatic Teller Machine
SCBL	Standard Chartered Bank Nepal Limited
HBL	Himalayan Bank Limited
JVB	Joint Venture Bank
EBIT	Earning Before Interest and Tax
NI	Net Income
PhD	Doctorate of Philosophy
NLL	Nepal Lever Private Limited
PE	Probable Error
C.V.	Coefficient of Variance
NPAT	Net Profit after Tax
TU	Tribhuvan University

Chapter 1

Introduction

1.1 General Background

The commercial bank has been a vital ingredient for economic development. They are intermediaries, which mobilize funds through the prudential of investment portfolios in advanced countries. Whereas in Nepal the role of Joint Venture Banks are still to be realized as an essentials machine of mobilizing internal saving through various banking schemes in the economy. Hence, to uplift the backward economic condition of the country, the process of capital should be expedited. Accumulation, among other prerequisites should be expedited.

Capital accommodation plays an essential role in correlation of the economic growth of nations. Which in turn is basically determined, among their others by saving and investment propensities? But the capacity of the saving in the developing country is quite low with a relatively higher marginal propensity of consumption. As a result developing countries are badly trapped into the various cycle of poverty. The basic problem of these countries is raising the level of saving and thus investments. In order to collect the enough saving, and put them into productive channels. Financial institution lied a bank are necessary. It will be utilize within economic and will either be divaricated abroad or use for unproductive consumption or speculative activities.

Capital structure concept holds a major place in the financial management. Capital structure refers the proportion of debt and equity capital. A perfect balance between debt and equity is required to ensure the trade-off between risk and return to shareholders. Thus optimal capital structure means the capital structure having reasonable

proportion of debt and equity. An optimal financial structure makes better use of society's funds of capital resource, and thus it increases the total wealth of society also. By increasing the firm's opportunity to engage in future wealth – creating investment it increases the economy's rate of investment and growth. (*Ezra: 1969: 92)*

1.1.1 **General Background of Banks in Nepal**

Commercial banks are the supplier of finance for trade, land, and industry, which plays vital role in the economic and financial life of the country. They help in the information of capital by investing the savings in productive areas. Rural people of underdeveloped countries like Nepal need various banking facilities to enhance its economy in moods of the countries; the bands are generally concerted in urban and semi urban sector. They neglect rural sector due to heavy risk and low return, which is infect, the main key to economic development with out it others sector of economy can't be flourished.

The history of the systematic development of Joint Venture Banks in Nepal as compared to other developed countries is of resent origin. In Nepal, efforts are being made to accelerate the pace of economic development after the adaptation of first five – year plan in 1994 Nepal Bank Ltd, the first and oldest bank in modern banking history of Nepal, was established in 1937 AD (*30 Kartik 1994 B.S.*) with 51% Government equity. Nepal Bank Ltd also used to function as Central Bank of the country up to 2012 BS on 2013 BS. Nepal Rastra Bank was established as Central Bank of Nepal under the Nepal Rastra Bank Act 2012. Government initiated some corrective measures to stabilize the economy with the assistance of if standby arrangement in mid 1980s in FY 1985, in subsequently: embarked upon the structured adjustment programs encompassing measures to increase mobilization, strengthen financial sectors, and liberalize industrial

and trade policies (World Bank*: 1992: 381)* Since then several financial institutions and commercial joint venture banks have been established in the process of development and liberalization policy for the economic development of the nation.

In the early 1980s, the government permitted the establishment of foreign joint venture banks in Nepal. As a result, three joint venture banks; Nabil, NGBL and NIBL came into existence by the end of the first half of the 1980s. Henceforth, a number of joint venture banks came into existence. The basic objective to allow Joint Venture Banks to operate in Nepal was mainly to develop the banking sector, to create healthy competition for further development of already existing old banks, and to introduce new technological banks, nine development banks, forty-five co-operative banks, twenty-five non-governmental organizations and a Central Bank. Accordingly, Nepal Rastra Banks has given approval to operate following twenty five commercial banks.

Table 1.1

List of Commercial Banks in Nepal (Rs in '00000')

S.N.	Commercial Banks	Operation Date	Paid up Capital
1	Nepal Bank Limited	1994/07/30	3804
2	Rastria Banijya Bank	2022/10/10	11723
3	Nepal Arab Bank Limited	2041/03/29	6892
4	Nepal Investment Bank Limited	2042/11/26	12039
5	Standard Chartered Bank Limited	2043/10/16	6208
6	Himalayan Bank Limited	2049/10/05	10135
7	Nepal SBI Bank Limited	2050/03/23	8745

8	Nepal Bangladesh Limited	2050/02/02	7438
9	Everest Bank Limited	2051/07/01	8314
10	Bank Of Kathmandu Limited	2051/11/28	6031
11	Nepal Credit & Commerce Bank	2053/06/28	13995
12	Lumbini Bank Limited	2055/04/01	9957
13	Nepal Industrial And Commercial Bank Limited	2055/04/05	9339
14	Machhapuchhere Bank Limited	2057/06/17	9013
15	Kumari Bank Limited	2057/12/21	10700
16	Laxmi Bank Limited	2058/12/21	9132
17	Siddhartha Bank Limited	2059/09/09	8280
18	Agriculture Development Bank	2024/10/17	10778
19	Global Bank Limited	2063/09/18	7000
20	Citizens Bank International Limited	2064/01/07	5600
21	Prime Bank Limited	2064/06/07	7000
22	Sunrise Bank Limited	2064/06/25	7000
23	Bank of Asia Nepal Limited	2064/06/25	7000
24	Development credit bank Limited	2057/10/10	11075
25	AMB Bank Limited	2053/09/11	10000

Source: Nepal Rastra Bank

The commercial banks collect the scattered merger saving and place them into productive channels. They hold the deposit of many persons; government establishments and business units. They make funds available through their lending and investing activities to borrowers, individuals, business firms, and government establishments. In doing so,

they assist both the flows of goods and service s forms the government. They are media through which monetary policy is affected the joint venture banks help to build country's holistic development agenda. They are the keys to help the bank understand better the political and social contexts in which it operates. ‘’it is resources for economic development; it maintains economic confidence of various segments and extends credit to people." (Grywinshki: 1993: 87)

Twenty-five Commercial Banks are active in Nepal at present. All of these banks have been successful in making profit. At the same time, we see a tough competition among them. However, we don't see a growth of investment in the productive areas in the ratio the commercial banks are growing. Since some of these banks do not publish their progress reports on time, Nepal Rastra Bank has been unable to get that information. This has ultimately led to the difficulties in their study.

The number of commercial banks in Nepal is 25 at present and it is on the rise. The old banks are also extending their branches in the newer areas. But almost all these commercial banks are concentrated in the urban areas, and they consider the act of extending their services in the rural areas as unprofitable and risky. Therefore, the people of the rural areas have not been able to benefit from the services of the commercial banks. Though the people of the urban areas have been able to enjoy the facilities of relatively lower interest rates, the people in the rural areas are still burdened with very high interest rates. Initially the commercial invested more in the productive areas such as industries, but now they seem to be focused on less productive areas with short term immediate profit making attempt. The reason behind this is basically that it takes a long time to make profit from investment in the areas that become productive only in the long run.

There is a competition among the commercial banks to attract people showing the immediate short term return. The commercial banks of Nepal have a direct impact in the economy of Nepal. Since these banks have not shown any initiatives to invest in the areas beneficial to the country in the long run considering those areas as risky. The GDP of the country has not shown satisfactory improvement. Similarly the political instability of the country has also made direct impact in the economy of the country. The goal of promoting peace, prosperity and economic success after the constituent assembly election has not been met yet. Insecurity, violence, robbery, theft, instability, strikes and forced donation has been rampant. Due to uncontrolled demands from the laborers' unions, the industries are on the verge of being shut down. Even these unions are controlled and promoted by the parties. All of these reasons have led to the devastation of the Nepalese economy. Though the GDP of Nepal at present is between 5 to 6, the inflection rate and the price hike is on the rise. The import rate of the goods of basic necessity is on the rise and the export rate is decreasing. The export of Nepali garments and carpet which was quite considerable in the past is going down at present. The major reasons of this are the tussle between the investors and the union workers, and the unavailability of investment at a lower interest rate. Moreover, areas like the tourism industry which can affect the economy positively have also been victim of the recent instability. In situation where volume of business is not increasing, but later decreasing, and financial institution are mushrooming, there will be a tremendous pressure on the financial institution for survival. In developed countries, companies merge with each other before being caught by recession, but in Nepal the concept of merger is still very new. After sometime, the banks of Nepal should also start making alliance with each other. They can have alliance in

expensive technologies such as ATM's, credit card communication device, consortium landing, attracting remittance and other fee base income etc. If the alliance works, then the door for merger opens.

1.1.2. A Brief Introduction of Selected Joint Ventures Banks

Commercial banking in Nepal commenced in a formal manner in 1937 which the establishment of Nepal Bank Ltd. From that they forward banking in Nepal has taken many strides forward, wit a myriad of Banks and a multitude of financial products entering the market. The entry of joint venture banks in the kingdom opened the doors to international standard banking service and with it heightened costumer expectations. To meet these whiles some chose to complete price, others choose to complete on serviced delivery and customer satisfaction.

1. **Standard Chartered Bank Nepal Limited**

Standard Chartered Bank Nepal Limited, formerly known as Nepal Grindlays Bank Limited has its head office in Kathmandu and has been operation since 1987. It is a joint venture operation, registered in Nepal, with 50 percent of the shares held by Standard Chartered Grindlays Bank, 33 percent by Nepal Bank Limited, the country's oldest and largest financial institution and 17 percent by Nepalese public.

On 31 July 2000, Standard Chartered Bank concluded the acquisition of ANZ Grindlays Bank Limited from the Australia and New Zealand Banking Group Limited. With this acquisition, 50percent share of Nepal Grindlays Bank Limited (NGBL) previously owned by ANG Grindlays Bank Ltd. leading to the name change of the bank to Standard Chartered Bank Nepal Limited with effect from 16 July 2001.

2. Himalayan Bank Limited

Himalayan Bank Limited was established in 1993 by the distinguished business personalities of Nepal kin partnership with the employee's provident funds and Habib Bank ltd, which is one of the largest commercial banks of Pakistan. It is the First commercial bank of Nepal with maximum shareholding by the Nepalese private sector. The equity participation of HBL is 20 percent by Habib Bank of Pakistan, 51 percent by promoter shareholders, 14 percent by financial institution, and 15 percent by public shareholders. Besides commercial activates, the bank also offers industrial and marchland banking. Hal's policy is to extend quality and personalized service to its customers as promptly as possible. The bank as far as possible offers tailor-made facilities to its clients, based on the unique needs and requirements. To extend more efficient services to its customers, HBL has been adopting innovative and latest banking technology. The bank has very aggressive plan of establishing more branches in different parts of the kingdom in the near future. Since 1999, this bank is providing products and service like, credit card, tele banking, any branches, automated teller machine (ATM), 24-hour banking, etc.

3. Nepal SBI Bank Limited

Nepal SBI Bank Limited commenced its operation since 1994 as a joint venture between the employee's provident funds and the state Bank of India, where the Indian bank holds 50% of the equity. The initial paid up capital in 1994 was 119.95 million. The bank at present scenario of banking sector, and it is implementing required business plans and strategies to face the challenges and to enhance its profit to a reasonable level by the yearend. SBI Bank has the following future plans.

- Technology up-graduation and automation.

- International banking relationships
- Branches expansion.
- New service and areas of investment.

1.2 Statement of the Problems

Although various joint venture Bank are operating in Nepal after the HMG/N adopted the open liberal and market oriented economic police, the financial sectors has not been enough from them to meet the growing resource need to the economy as expected before. Why is so and what are the problems? To answer the question an analysis of their present capital structure is necessary. So, focus of the present study is on the capital structure of Joint Venture Bank in Nepal with special reference to SCBL, HBL and SBI Bank.

Efficient capital structure is the major tool to measure the strength and weakness of the bank. Strong Joint Venture Bank contributes to National economy and also attracts further foreign investment in these sectors. It may be an example to a Newcomer Joint Venture Bank. There fore the present study seeks to explore the answers to the following question.

a. How far SCBL, HBL and SBI Bank have been able to mobilize their resource?
b. How efficiently these banks are managing their capital structure?
c. To what extent these banks have been able to raise their profitability?
d. How does leverage affects the cost of capital in Nepalese situation?

1.3 Objectives Of the Study

It is already stated that commercial banks have played a vital role to uplift the economic development of the country. For that, it must have strong financial position i.e. capital

structure and the way it is financed. The size and type of the capital and asset depends upon the size and the nature of the organization.

The major objective of the study is of analyze, examine and interpret the capital structure of three Joint Venture Banks. To achieve the main objective, following objectives have been set out for the study:

a. To analyze the relation of the capital structure and cost of capital of selected Joint Venture Banks.
b. To study & examine the comparative capital of selected JVBs.
c. To evaluate the profitability position of the banks under study.
d. To provide suggestions and recommendations on basis of analysis to improve the financial weakness of the Joint Venture Banks.

1.4 Justification of the Study

The proper evolvement of JVB is quite essential for the sake of economic development countries like Nepal. The research on related topic is of tremendous value to provide the feedback to the policymakers in systematically plans and policy to face the situation. Beside this study, researches beyond more than last three decades conducted several empirical studies. But no empirical testing has been conduct yet to explore the validity of capital structure of Joint Venture Banks.

1.5 Limitations of the Study

The present and the outcome of the study is an individual effort. Therefore the time and resource constraints has limited the in depth study. This study is limited within following factors:

a. The study is limited to the related variables affecting capital structure of the selected banks.
b. The study is based on secondary data; therefore, the accuracy of result and conclusions highly depends upon the reliability of these data.
c. Analysis evaluated comprising the FY 2060/061 to 2064/065.
d. The evaluation is made through the analysis of financial statement published and presented by the banks.
e. The study has review possible factors affecting Joint Venture Banks.
f. Out of total nine Joint Venture Banks in Nepal only three are taken as sample.

1.6 Significance of the Study

The significance of Joint Venture Banks can scarcely be underestimated. It beneficial to different parties concerned with the Joint Venture Banks as well as other interested parties. Basically, it has beneficial to:

a. The study is helpful to shareholders regarding the capital structure of their banks; the comparison will help them to identify the productivity of their funds.
b. The study is helpful to management of respective banks to go deep into the matters as why their performance is better then of competitors.
c. The study is prescriptive to the policymaker while formulating the policy regarding joint banks.

The customers, financing agencies, stock exchanges and stock trades are interested in the capital structure of banks. By this the customers can have view to which banks they can entrust. The financing agencies can understand where their fund is more secured.

Similarly, stock exchange and stock teasers can observe the relative appeal to the stocks of each bank.

1.7 Organization of the Study

This study includes five chapters, which are as follows:

First chapter is introduction chapter. General background of Commercial Banks, Statement of the Problem, Objectives, Significance, Justification, Limitation and Chapter Plan of the study is included.

Second chapter is review of literature. It includes theoretical framework of Capital Structure, Reviewing issues related to the study are included which are; books, articles, journals, and unpublished thesis, etc.

Third chapter is research methodology. Specially, financial Tools and Techniques as well as Statistical Tools are presented.

Fourth chapter deals the presentation, analysis and interpretation of the study through definite course of research methodology. This chapter also contains major finding of the study.

Fifth chapter is the suggestive framework containing the summary, conclusions and recommendations of the whole research.

Chapter 2

Review of Literature

This chapter is focused on a brief discussion about the abstract regarding the theories of capital structure. In order to accomplish the objective of the study, the chapter includes reviews literature on leverage, its theoretical framework etc. including different views of expertise, assumptions, book and journals, as well major findings of previous studies of the relevant field is included in precise manner.

2.1 Commercial Bank Concept

Commercial banks are those financial institution and giving loans against securities. They provide working capital needs or trade, industry and even to agriculture sectors. Moreover commercial banks also provide technical and administrative assistance to Industries trades and business enterprises.

Under the Commercial Bank Act 1947, the commercial banks are those banks, which provide sort term and long-term dents whenever necessary for trade and commerce. They accept deposits from the public and grant loans in different form, purchase and discount the bill for exchange, promissory notes exchange foreign currency.

A commercial bank is one, which exchange money, deposits money accepts deposits, grants loan and performs commercial banking functions and which is not a bank meant for cooperative, agriculture, and industry of for such specific purpose. (NCB Act: 1974)

The American Institute of Banking has laid down the four major functions of the commercial bank such as receiving and handling payments for its clients, making loan investments and creating money by extension of credit. (AIOB: 1972: 145)

Meanwhile, under the free enterprises system like USA, the interest of the nation as well as that of individual stock holders are supposed to be best served by vigorously profit seeking. But profit is a sole objective of an enterprise and it should not be evaluated just on the basis of the profit earned. Neither the bank nor the community will be best served if the banker unreasonably sacrifices safety is fund or liquidity of his bank is an effort to increase income.(AIOB: 1972:149)

2.1.1 Joint Venture Banks

A joint Venture Banks is the Joining of forces two or more enterprise for the purpose of carrying out specific operations (industrial or commercial investment, production or trade) (Gupta: 1984: 15-24)

Therefore, the major objectives are to join economic forces to achieve some result, which each of the patterns could not achieve separately. For Joint Venture, there should be least two partners. A prerequisite for joint venture is that is should establish a favorable investment climate. In Nepal, three of the dramatic reforms were carried out in 1980s. The measures were allowing the foreign banks to operate as a joint Venture, lifting of central on interest rate and introduction of the action of government's securities. (K.C: 2048: 69-74)

NG's deliberate of following foreign JVBs to operate in Nepal is basically targeted to encourage to run local traditionally commercial banks to enhance their bankable capacity thought competition, efficiency, modernization, mechanization via computerization and prompt customer service. (Shrestha: 1990: 44-55)

Dr. Manohar Krishna Shrestha in his article, "Commercial Banks Comparative Performance Evaluation," concludes that JVBs are new, operationally more efficient having superior performance while comparing with local banks, better performance of

JVBs in due to their sophisticated technology, modern banking methods and skill. Their better performance is also due to the government branching policy in rural areas and financing PEs local banks are efficient and expertise in rural sector, but having number of deficiencies. So, local banks have to face growing constraints of socio-economic of JVBs commanding significant banking business on other spectrum. (Shrestha: 1990: 56)

2.1.2 Role of Joint Venture Banks in Nepal

Joint Venture Banks pose a serious challenge to the existence native banks as an opportunity to modernize themselves and sharpen their competitive zealous. (Sharma: 1988: 37)

1. Introduction Modern Management and Banking Technology in Nepal

The JVBs have invited a new era of banking in this remote Himalayan kingdom by introducing high technology and efficient methods in the banking business. Other areas of expertise are forward cover for foreign exchange transaction by imports and exports, merchant banking inter-bank market for money and securities, arranging foreign currency loans etc. (Chopra: 1990: 1)

After the establishment and technique of these banks other old banks are also introducing computerized banking like Tele-banking, credit card and master card system in urban areas. Now they are planning to follow up some developing techniques applied by international banking sectors.

2. Information to Foreign Investor

The JVBs might be better place to raise resources internationally for viable projects in developing countries like Nepal mainly to their credibility in and easier access to

international markets. It is much easier for Nepalese business to procure international markets.

In past, the political system in Nepal was unstable, so foreign investors were not interested in Nepal. After the restoration of democratic system investors are still hesitating to invest in Nepal due to less political commitment. In this context the publications of JVBs have been playing a vital role for introducing the Nepalese financial rules, regulations, policies and practices to the foreign investors.

3. **Creation of Completive Environment**

Before JVBs were introduced, only two commercial banks were operating in Nepal: Nepal Bank Ltd. and Rastria Banijya Bank. These two banks had low competition between them, and have almost set their customers, working areas and service. Hence, common people, businessman, industry and the country as a whole could not get sufficient benefit.

After arrival of JVBs, they set a fair, healthy and efficient competition in the banking sectors that ended zeal competition of NBL and RBB. As a result, common people, businessman, industry and the nation as a whole benefited deposit and low rate of interest in credit, quick and quality service, efficient financial performance, etc.

4. Contribution to the National Economy

In the present context, NG's adopting liberalized, market oriented and leases-fair economic program, if required efficient modern banking system. Comparatively, Joint Venture Banks follow new banking system in every sector s and agriculture sectors. They play significant role to these sectors as well as contribute in national economy from one

sector. Thus new managerial and banking techniques, healthy, comparative atmosphere, new ideas and philosophy, foreign investment and capital and diversified market concepts transfer to other company. A remarkable point is that the investment of mobilized saving in from of deposit should be directed by the economic need and perspective, not by political need and interest. But in Nepal political pressure seems to be against it, thus there is need to consider this aspect by the political parties. Financial and legal rules, regulation and practices should be clear and transparent to foreign investors.

2.1.3 Objectives of Joint Venture Bank as a Commercial Bank

After the World War II, commercial bank grew in numbers in Asian countries to assist the development of commercial and financial sectors. The reason of economic advancement in most of the European countries is development of commercial bank and banking system in these countries. Commercial banks are operated under the rules, regulations, guidance and directives of the central bank. They are expected to boost up the development pace of the community as will as the whole national economy.

Joint Venture Banks in Nepal are operated under the rules, regulations, supervision control and directives of the NRB. They are also expected to be the mediator of economic development and uplifting the community. For the purpose, commercial banks are expected to mobilize the passive fund towards trade and commerce to provide economic assistant to enterprise, to create saving habits in general public to invest compulsorily in priority sectors as indicated in national plan.

2.2 Review of Books

Capital structure refers to the mix of long- term source of funds such as debenture, long-term debt, and preference share capital and equity share capital including reserves and surplus. (Pandey: 1999: 718) The optimum capital structure may be defended as that capital structure or combination of debt and equity that leads to the maximum value of the firm. (Khan & Jain: 1990: 487) Capital structure is the permanent financing of the firm, represented primarily by long- term credit. Thus a firm's capital structure is only a part of its financing structure. (Weston & Brigham: 1981: 555)

Ezra Solomon expresses the optimum capital structure its implications as: ''optimum leverage can be defined as that mix of debt and equity which will maximize the market value of the claims and ownership interest represented on the credit side of the balance sheet. Further, the advantage of having an optimum does exist, is two–fold: it maximizes the value of the company and hence the wealth of its owners, it minimize the company's cost of capital which in turn increase its ability to final new wealth-creating investment opportunities. Also, by increasing the firm's opportunity to engage in future wealth creating investment it increases the economy's rate of investment and growth.'' (Ezra: 1969: 169)

2.2.1 Capital Structure Theories

Capital structure theories developed so far are clung to the question of existence of the optimal capital structure. Most of the theoretical and empirical debates so far are revolved around the maximization of the value of firms through the judicious composition of its debt and equity fund. Ni and traditional theories of capital structure claims that there is

existence of the optimal capital structure. They contend that proper mix of debt and equity can maximize the value of the firms.

Whereas, NOL approach and MM hypothesis contend that that capital structure is irrelevant to the value and cost of the firm. According to the NOL approach, cost of equity increase linearly as debt increases in the capital structure. The use of debt does not affect the value of the firm as the benefit of debt capital is just offset by the increase in the cost of equity.

Likewise, MM hypothesis states that there is no level optimal capital structure. They support the NOI approach by providing logically consistent behavioral justifications in its favor. Between the two extreme views, we have the middle position or intermediate version advocated by the traditional writers. (Ibid) Thus, there exists an optimum capital structure at which the coat of capital is low. But the logic of this view does not seem very sound. The MM position change when corporate taxes are assumed.

Assumptions and Definitions

The following assumptions are made to grasp the elements of the capital structure and the value of the cost of capital controversy properly. (Van Horn: 1985: 244)

- Firms use only two sources of capital, debt and equity.
- The corporate and personal income taxes do not exist. This assumption is relaxed later on.
- The total assets of the firm are given. The degree of leverage can be changed by selling debt to repurchase shares or selling shares to retire debt.

- Investors have the same subjective probability distributions of future expected EBIT for a given firm.
- The firm has policy of paying 100% dividends.
- The operating earning is not expected to grow.
- The business risk is assumed to be constant and independent of capital structure and financial risk.

In this analysis of capital structure theories, following notations are used:

S = market value of ordinary shares

D = market value of debt.

V = total market value of the firm.

K_d = cost of debt.

K_e = cost of equity.

K_o = overall cost of capital.

EBIT = Earnings before Interest and Taxes or NOL.

2.2.1.1 The Net Income approach

The NI approach is also known as theory of capital structure decision is relevant to the valuation of the firm. This approach contends that value of a firm can be maximizing the proportion of debt in the capital structure can minimize the overall cost of capital. The crucial assumptions of these approaches are: (Pandey: 1999: 678)

The use of debt does not change the risk perception of investors, as a result the equity-capitalization rate (K_e), and the debt-capitalization rate (K_d), remains constant with changes in leverage.

The debt-capitalization rate is less then the equity-capitalization rate. ($K_d < K_e$).

The corporate income taxes do not exist.

The overall cast of capital is measured as:

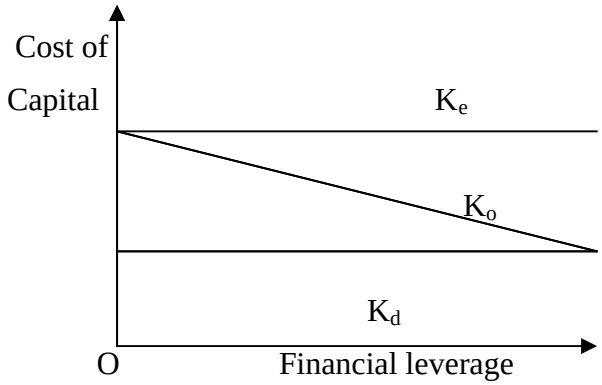
$$K_0 \text{ X } \frac{NOI}{V}$$

$$or, \quad K_0 \text{ X } \frac{EBIT}{V}$$

The overall cost of capital (K_o) can also measured as:

$$K_o = \int K_o \text{ Z } K_d \text{ A} \frac{D}{V}$$

The assumption of the NI approach shows that K_e and K_e are constant and K_d is less then K_e. Therefore, K_o will decrease as D/V increases.



Under NI approach, K_e and K_d are assumed not to change with leverage. When the proportion of debt is increased in the capital structure, it causes overall cost capital to decrease and approach the cost of debt. Thus, the firm will have the maximum value and the lowest cost of capital when it is all most debt-financed, under the NI approach.

2.2.1.2 The Net Operating Income Approach

The NOL approach contends that capital structure is irrelevant to the cost of capital and value of the firm. Thus it is called irrelevancy theory of capital structure. As per this approach the market value of the firm is not affected by the changes in capital structure. The market value of the firm is found out by capitalizing the net operating income at the overall cost of capital, Ko which is a constant.

The market value of the firm is determined as,

$$V = D+S$$

$$\text{or, } V \text{ X} \frac{EBIT}{K_o}$$

Where, K_o, the overall capitalization rate depends on the business risk of the firm. It is independent of financial mix; V will be a constant and independent of capital structure changes.

The Critical Assumptions of Approach are:

- The market capitalizes the value of the firm as a whole. Thus, split between debt and equity is not important.
- The market uses an overall capitalization rate (K_o) to capitalize the net operating income. K_o depends on the business risk.
- If the business risk is assumed to remain uncharged, K_o is a constant.

- 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 (K_e).
- The K_d is a constant.
- The corporate income taxes do not exist.

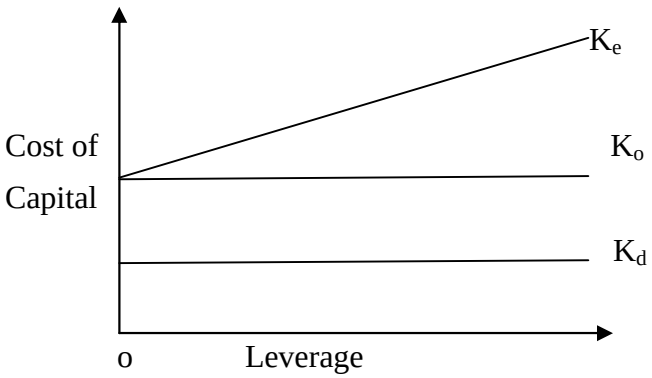
The market value of equity can be determined as,

$$S = V - D$$

The cost of equity can be defined as follows,

$$K_e = K_o + (K_o - K_d)\frac{D}{S}$$

The equation indicates that, K_e increase with leverage continuously, if K_o and K_d are constant.



As average cost of capital, K_o, is constant, this approach implies that there is not any unique optimum capital structure. It means, every capital structure is optimum, as the cost of capital is the same at all capital structure. (Pandey: 1999: 681)

2.2.1.3 The Traditional View

The traditional view, (Ezra: 1969: 92) which is also known as an intermediate approach is a compromise between the net income approach and the net operating approach. This approach contends that overall cost of capital of the firm can be minimized by judicious mix of debt and equity capital. This view clearly implicates that the cost of capital decrease within the reasonable limit of debt and the increase with leverage. Thus, and optimum capital structure exist and it occurs when the cost of capital is minimum or the value of the firm is maximum. This theory carries the clear implication that the cost of debt plus the increased cost of equity, together on a weighted basis, will be less then the cost of equity, which existed on equity before debt financing.

According to the traditional position, the manner in which the overall cost of capital. Reacts to changes in capital of reacts to changes in capital structure can be divided into three stages. (Ezra: 1969: 94)

First Stage: Increasing Value

The first stage begins with the initiation of debt in the total capital. At the beginning, the cost of equity, K_e, remains constant or rises slightly with debt and it does not increase fast enough to offset the advantage of low cost debt. Here the cost of debt, K_d, remains constant or rises negligibly. Thus, the value of the firm, V increases and the overall cost of capital declines with increasing leverage.

Under the assumption that K_e remains constant within the acceptable limit of debt, the value of the firm will be:

$$V= S+D$$

Thus, as long as K_e and K_d are constant the V increases at a constant rate. $(K_e-K_d)/K_e$ as the amount of debt increases.

$$K_o \; X \frac{X}{V} K_e \, fK_e \; ZK_d \, A \frac{D}{V}$$

This implies that, with $K_e > K_d$, the average cost of capital will decline with leverage.

Second Stage: Optimum Value

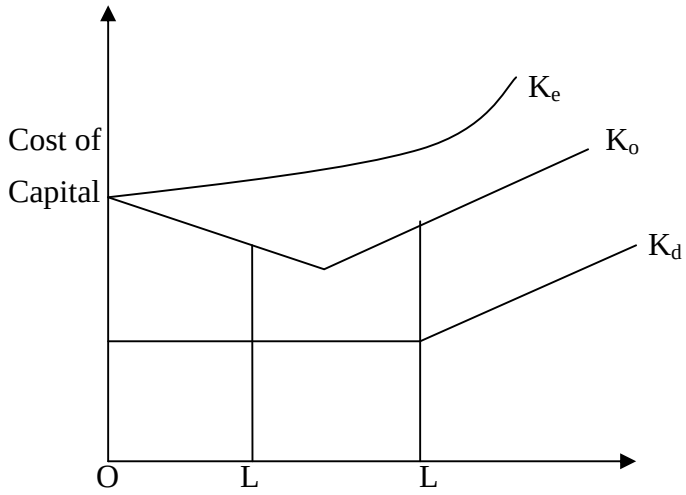
Once the firm has reached a certain degree of leverage, further application of debt will increase the cost of equity due to added financial risk that offset the advantages of low cost debt. Thus, the total market value of the firm remains constant. Within that range or at the specific point, the value of the will be maximized or the cost of capital will be minimized.

Third Stage: Decaling Value

Beyond the acceptable limit of leverage, the value of the firm decreases with leverage or the cost of the capital increases of leverage. This occurs because investors perceive

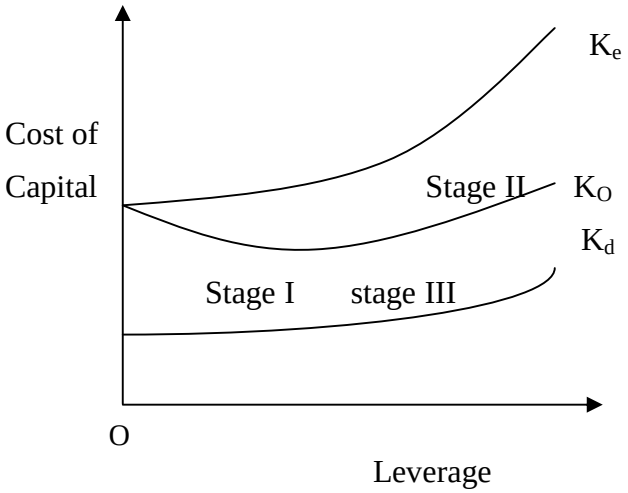
a high degree of financial risk and demand a higher equity capitalization rate, which offsets the advantage of low-cost debt.

The overall effect of above three stages is to imply that the cost of capital is a function of leverage. At first it declines with leverage and after entering a minimum level it starts rising. The relation between cost of capital and leverage is graphically shown in below. Where in the overall cost of capital curve, K_o, is saucer-shaped with a horizontal range. It indicates that there is a range of capital structure in which the cost of capital is minimized. Ke is assumed to increase slowly at first then at a faster rate.



The cost of capital behavior (traditional view)

In below, the cost of capital curve is shown to be U-shaped. Under such a situation there is a precise point at which the cost of capital would be minimized. The precise point defines the optimum capital structure.



The cost of capital behavior (traditional view –a variation)

2.2.1.4 The Modigliani-Miller Approach (Without Tax)

MM theory asserts that capital structure decision is irrelevant and there is no level of optimal capital structure. MM theory states that, in the absence of taxes, the value and overall cost of capital of firm is independent to its capital structure. Further it states that cost of capital is the expected net operating income divided by the total market value of the firm and it is equal to the capitalization rate of a pure equity stream of its risk class. In their

1958 article, they provide analytical sound and logically consistent behavioral justification in favor of their hypothesis and reject any other capital structure theory as incorrect. (Pandey: 1999: 686)

Assumptions

The MM hypothesis can be best explained in terms of their propositions I and II. Their propositions based on certain assumptions, particularly related to the behavior of investor and capital market, the actions of firm and the tax environment can be described as (Pandey: 1999: 687)

- Securities are traded in the perfect capital market situation. This specifically means that: a) Investors are free to buy and sell securities b) No restriction as the firms do; c) They behave rationally and transaction costs do not exist.
- Firms can be grouped into homogeneous risk classes. It is generally implied that firms within same industry constitute a homogeneous class.
- The risk of investors is defined in terms of the variability of the net operating income.
- No, Cooperate income taxes exist.
- Firms distribute all net earnings to the shareholders, i.e. 100% payout.

Proposition I

With given assumptions, MM argue that for firms in the same risk class, the total market value is independent of the debt-equity mix and is given by capitalizing the expected net operating income by the rate appropriate to that risk class. (Pandey: 1999: 687)

Proposition I can be defined as:

$$V \equiv S + D \equiv \frac{X}{K_o} \equiv \frac{NOI}{K_O}$$

Where,

V = the market value of the firm.

S = the market value of the firms ordinary equity

D = the market value of debt.

X = the expected net operating income on the assets of the firm.

K_o = the capitalization rate appropriate to the risk class of the firm.

The case can be stated in terms of the firm's average cost of capital, which is the ratio of the expected earnings to the market value of all its securities. That is:

$$\frac{X}{S + D} \equiv \frac{X}{V} \equiv K_o$$

If Kd and Ke are defined as the expected return on the firm's debt and equity respectively, then, expected net operating income is:

$$X = K_oV = K_eS + K_dD$$

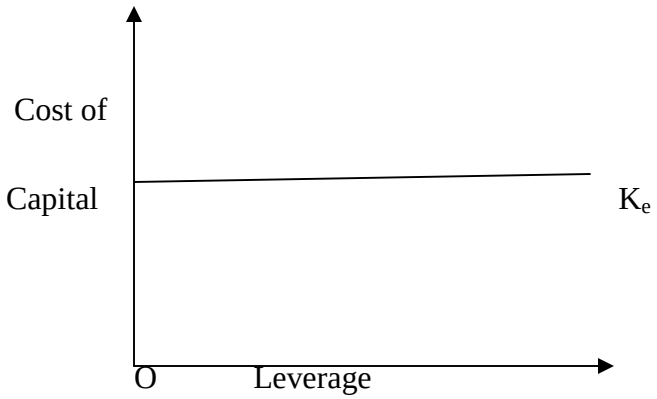
By definition,

$$K_o = \frac{X}{V}$$

$$Ko = K_e \frac{S}{V} + K_d \frac{D}{V}$$

Since, MM conclude that the total market value of the firm is unaffected by the debt-equity mix, if follows that the cost of capital is completely independent of its capital

structure and is equal to the capitalization rate. The cost of capital function, as hypothesized by MM is presented in below:



The cost of capital under M-M proposition

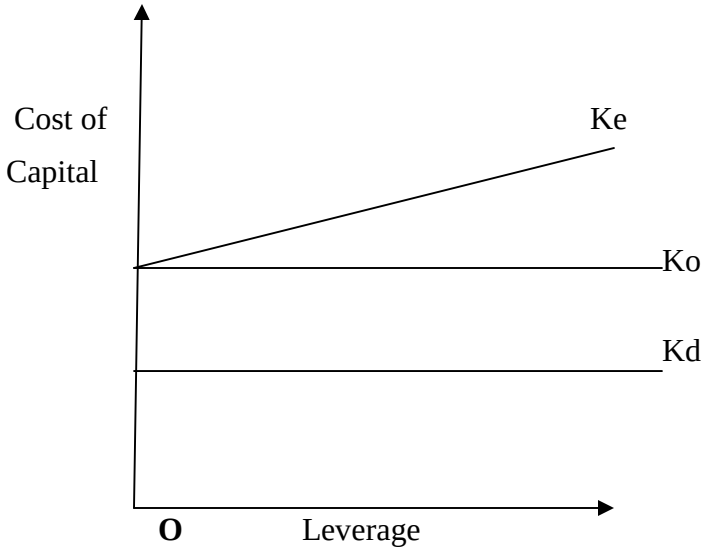
Thus, two firms identical in all respects except to the capital structure have the same value and cost of capital. In this case, arbitrage will take place to enable investors to engage in personal leverage as against the corporate leverage to restore equilibrium in the market. (Pandey: 1999: 688-689)

Proposition II

MMs proposition II, which defines the cost of equity, follows the proposition I. the expected yield on equity can be defined as:

$$K_e \text{ X} K_o \Gamma f K_o \text{ Z} K_d \text{ A} \frac{D}{S}$$

The MM proposition could be valid if Kd remains constant for any degree of leverage. But in practice kd increases with leverage beyond a certain reasonable level of debt. However, MM maintains that even if Kd is increasing, Ko will remain constant. They argue when Kd will increase at a decreasing rate and may turn down eventually. This is shown in the figure below



2.2.1.5 Arbitrage Process of L-U

Debt financing is neither advantageous nor disadvantageous. In other words, the total value of levered firm can't more than that of the unlevered firm and the value of an levered firm can't greater than the levered firms, because the arbitrage process will set in and depress the value of the un levered firm and increase the market price and thereby, the total value of the levered firm. (Khan & Jain: 1990: 11-14) In this process, investors will dispose certain percentage of their holding in levered firm and borrow some percentage of shares of the levered company.

2.3 Types of Leverage

There are three types of leverage, which are identified with the marginal analysis approach to profit planning. All types of leverage are related to the measurement of profit in order to operate the financial activities.

2.3.1 Operating Leverage

Operating leverage is the potential use of fixed operating costs to magnify the effect of change in sale on earning before interest and taxes (EBIT). (Gitman: 1988: 44) Operating leverage refers to the use of fixed costs in the operating of a firm. If there is no

use of fixed cost then the rate of the firm for fixed costs and total costs will be nil. In that situation we can say that the firm has no operating leverage. Actually leverage exists when change in revenue produce a greater change in EBIT. (Hampton: 1994: 157) It measures the percentage change in EBIT due to specific percentage change in level of output. Most of the companies are always active in operating the business activities with the main objective of maximizing the profit. An increasing sales volume is the best way of earning maximum profit. But an increase in sales volume depends upon the firm's capacity as will as the market demand. To fulfill the market demand, the company should invest extra amount as fixed asset. So the operating leverage result from the existence of fixed operating costs in the firm's income stream. (Gitman: 1988: 44)

The measurement of the relationship between percentage change in earning before interest and taxes (EBIT) and the percentage in sales is known as operating leverage. (Dongol & Parajuli: 1998: 321) in other words, the analysis of change in EBIT due to a change in output quantity is described as an operating leverage. A change in fixed operating cost affects the operating leverage significantly. When a firm is highly levered, operating profit will increase at a faster rate for few increases in sales. But the operating profit of a highly levered firm would suffer more loss than the firm with nil or low operating profit when sales volume falls. So the operating leverage is double-edged sword.

It is already clear that the degree of operating leverage is related to the fixed costs of the firm. If the company has a large fixed cost more than its marginal contribution, it should try covering all fixed costs by following some corrective action. When the company reaches its break-even point, a small change in sales causes the large percentage

change in EBIT. Once the company reaches its break-even point, the fixed cost will be equal to the contribution margin. In this situation, when the company has a high degree of operating leverage, a small change in sales brings comparatively a high change in EBIT. So the analysis of operating leverage tells the financial manager about the impact of change in sales, EBIT automatic rise in and that if the change brings a small decline in sales, EBIT must be in negative position and the company may suffer great loss. As a very risky factor, a fluctuated operating leverage may damage the good reputation of the company. So it should try to operate the business activities efficiently above the break-even point in order to avoid the dangerous condition that may damage the efforts of achieving the profitability of the firm. All these information and suggestion can be gained only after the study of operating leverage.

2.3.1.1 Degree of Operating Leverage (DOL)

The degree of operating leverage at any single sales volume can be calculated from a ratio of marginal contribution to EBIT. (Hampton: 1994: 161) The degree of operating leverage at any single sales volume can be calculated from a ratio of operating leverage (DOL) which may be defined as the percentage change in operating profit resulting from a percentage change in sales. (Pandey:1995: 197)

$$DOL \text{ X} \frac{\%\, change\ in\ operating\ profit}{\%\, change\ in\ sales}$$

$$or, DOL \text{ X} \frac{\zeta\, EBIT / EBIT}{\zeta\, Sales / Sales}$$

2.3.1 Financial Leverage

Financial leverage measures the responsiveness of EPS to change in EBIT. (Chandra: 1960: 160) The use of fixed charge source capital along with the owner's equity in the

capital structure is described as a financial leverage. There is the high probability of financial leverage when debt capital is collected in more amounts then the equity for an investment purpose. The capital with fixed interest charges is called debt and the payment of interest as well as principal on debt is an obligation of the firm that must be paid before any remaining profit after taxes is available for shareholders (Weston & Copland: 1990: 567). As rate of equity dividend is not fixed and depends on the dividend policy of the firm, the higher use of debt capital indicates the low profit for the shareholders. From the measurement of the degree of financial leverage, we can analyze the debt capital position in the firm's capital structure. If the financial leverage is more then 1, it indicates that the company is using debt in its capital structure. The ratio should not be less then 1 even if the company is not using debt capital as investment. The ratio must be equal to 1 when the firm uses only equity capital for investment purpose.

Financial leverage is the potential use of fixed financial cost to magnify the changes in earning before interest and taxes (EBIT) on earning per share (EPS) (Gitman: 1988: 44-45). As we know that financial leverage exists when a company uses a debt capital in its capital structure and it results from the presence of fixed financial costs in the firm's income stream.

Normally there are two types of fixes financial cost in the firms income statement. Both charges must be payable unless the amount of EBIT is not available to them. So, sometime the debt capital may be the most risky from of capital for investment. But being a tax deducting capital source, debt is the major source of capital investment. However it should be used in proportion to which the company will be in the condition of high profitability. In that situation, the main problem is about the proportion to which the

company should use the debt capital to earn maximum profit. The main solution to the problem is calculating the financial leverage. Financial leverage is the best way to analyze the appropriate rate of debt capital with which, the company can earn high profit then the cost of capital.

Financial leverage shows up as interest expenses causing additional variability in net income over and above the variability in net income that reflects financial risk. (Weston & Brigham: 1982: 555) When the company wants to expand its capacity, it needs more money to invest in fixed capital. The need of large investment can be fulfilled by equity and debt. When the cost of debt is less then the company may be profitable with debt capital investment. In this way, the profitability of company, by using debt capital can be measured only with the help of financial leverage.

2.3.2.1 Degree of Financial Leverage (DFL)

The degree of financial leverage (DFL) is the numerical measure of the firm's leverage. (Gitman: 1988: 45) When the economic condition is good and the firm's EBIT is increasing, its EPS increases faster with more debt in the capital structure. The degree of financial leverage is defined as the percentage change in EOS due to a given percentage change in EBIT.

$$DFL\ \mathrm{X}\frac{\%change\,in\,EPS}{\%\,change\,inEBIT}$$

$$or, DFL\ \mathrm{X}\frac{\zeta EPS/EPS}{\zeta EBIT/EBIT}$$

2.3.3 Combined Leverage

The combined leverage is the potential use of fixed costs both operating and financial to magnify the effort of change in sales on the firms earning per share (EPS) (Gitman: 1988: 46). The effort on earning per share due to total cost used by firm is described as a combined leverage. The combined leverage also called total leverage, representing the combination of operating and financial leverage. Measure the relationship between Q and EPS. Through the study of the combined leverage, we can analyze the effort of operating and financial leverage on the firms risk by using framework to develop individual concept of leverage. Due to inclusion of all types of fixed costs, this leverage can be viewed as the total impact of the fixed cost in firms operating and financial structure, combined leverage is used to compare charge in revenue with changes in EBT and also change in net income. (Hampton: 1994: 160) When the company has high level of operating and financial leverage, even a small change in sales volume will have dramatic effort on EPS. The operating and financial leverage together is main cause of wide fluctuation in EPS for a given change in sales volume. But swing in EPS will be more pronounced if the company also used high amount of operating and financial leverage. (Pandey: 1995: 197)

2.3.3.1 Degree of Combined Leverage (DCL)

The combined leverage measures the relationship between percentage change in EPS and percentage change in sales. Calculating the effect of total leverage on EPS associated with a given change in sales is described as a combined leverage. The degree of combined leverage is defined as a percentage change in EPS due to given percentage change in sales.

$$DCL \text{ X} \frac{\%\, change\, in\, EBIT}{\%\, change\, in\, sales} \mid \frac{\%\, change\, in\, EPS}{\%\, change\, EBIT}$$

$$\text{X} \frac{\%\, change\, in\, EPS}{\%\, change\, in\, sales}$$

2.4 Review of Previous Research

Many studies have been conducted upon the capital structure op Nepalese corporations. In order to assist this research work, some of the relevant studies have been stated below.

2.4.1 Review of Journal

Mr. Roland Wipporn (1996: 615-635) conducted a study to test the empirical relationship between cost of capital and leverage. He tried eliminating the principle problem of study on the leverage attempted to offer what are hoped to be more fruitful alternative in determining the relationship between leverage and cost of capital. He argued that the leverage either the ratio of debt to equity at book values, both of these measures contains important conceptual basis. He therefore used different measure of leverage. Vix U/E- 25 where, I is the current level of fixed charges, E is the most recent year cash flow operating income determined from a logarithmic regression of income on time over ten years period, 25 is equal to two standard error around the regression line. He also included on certainty variables in his test equation to account for inter firm difference. He therefore has assumed in the past investigation that homogeneity of business risk could be achieved by comparing from the same industry classification.

Mr. Sharma and Rao (1999: 673-677) conducted the test of M-M hypothesis on influence of debt on the value of a firm to a non-regulated industry. The argued that estimate of cost of capital at through this model will be accurate only when their hypothesis on debt and dividends are correct; this is an essential condition for the

employment of this model. For the study purpose, they used sample of 30 engineering equation for three cross-section years, 1962, 1994 and 1995. Calculations of variables were done in exactly the same ways that done by M-M with two exceptions. They experimented with total assets and sales for deflecting the variables and the results were meaningful when fixed of total assets were used as the deflector. They argued that when the growth rate of total assets of fixed assets was used as the growth variable, the results were somewhat inconsistent with economic reasoning. They therefore took the earnings growth rate as the growth variable because this would take into account growth of earnings due both to the utilization of existing capacity and to the additional of new capacity. They included that debt has non-tax advantages also. Thus, this paper support that the investors prefer corporate to personal leverage and, therefore, the value of a firm rises up to a leverage rate considered prudent.

Mr. Rao and Litnberges (2001: 777-782**)** conducted the study of the effort of capital structure on cost of capital in less developed and less efficient capital market (India) and in a highly developed efficient capital market (United State). They used 28 Indian utilities and 77 American utilities. They conducted the study for five cross-section years: 1992-1996. they found that the result for the American utilities are constant to M-M proposition that except for the advantages of debt financing, the cost of capital is independent of capital structure, and the result also up ported that M-M hypothesis that investor are indifferent for the firms dividend policy. In case of India utilities, the result, the results are inconsistent to the M-M approach and support the traditional belief, the judicious use of financial leverage will lower the firms cost of capital and investors have a preference for current dividends. In conclusion, they contended that the M-M approach

after allowing for the tax advantage of debt, the firms cost of capital is independent of capital structure does not appear to be applicable in the case of a developing economy.

Mr. Haim Ben-Shahar (2002: 652) conducted a study "The Capital Structure and the Cost of Capital". In this paper the firm's capital structure was examined in terms of two parameters: the expected rate of return on the firms stocks and standard deviation. The relationship between the firm's capital structure and the efficient opportunity curve of field versus risk was presented, and range of efficient capital structure of the firm was derived. The capital structure theorem was formulated; sating that the firms cost of capital is constant along the range of efficient capital structure and risk as the inefficient range. Since the range of efficient capital structure of interest rates, it followed that the shape of the cost of capital curve is determined by the interest rate is constant any capital structure is determined by the interest rare is constant any capital structure is efficient and that the cost of capital is therefore constant.

Mr. William Jackshon's (2003) study on commercial bank regulation, structure, and performance with reference to empirical analysis using data covering 1644 banks over the period of 1999-2002. Relatively "desirable" banking performance is associated with several traits, including bank asset size, non-bank competition, low cash holding, low labor cost, state nonmember banks status, multi- bank holding company legislation, national bank status, low time deposit and low equity capitalization. Demand levels and temporal variations also significantly affect banking. Moreover, some variables favorably associated with one performance characteristic may tend to be adversely related to another. The study thus suggests that traits associated with relative freedom to associate

with limits on financial competition have generally desirable effects on the performance of the banking industry.

2.4.2 Review of Related Studies

A thesis submitted by **Mr. Ramesh Raj Aryal** (1991) on "An Evaluation of Capital Structure of Bottlers Nepal Ltd.", finds that all the calculations show the bad performance of the company due to the inefficient capital structure management. The company is regarded as highly geared up capital structured company. Thus to design suitable pattern of capital structure for the company, the management must bring about a satisfactory compromise among these conflicting factor of cost, risk, control and timing. He recommended that the company to shift debt capital to equity capital when the company have high earning per share.

A study performed by **Mr. Pramod Dhungana** (1992) entitled. "A Study of JVBs Profitability", fund that the profitability positions of JVBs is satisfactory over the study period by better utilizing of the funds. But, profitability position of NGBL and NIBL are improving trend then NABL, whereas, NABL is employing greater number of employees in it and operating many branches in comparison to NGBL and NIBL.

Mr. Keshar Jung Baral On his Ph. D. research, (1996) "Capital Structure and Cost of Capital in Public Sector Enterprises in Nepal" reached to the conclusion that performance of PEs is very poor and they are not adding the wealth of the society but diluting it, and hindering the development of the country. Further, the huge amount of adjusted losses of manufacturing and trading enterprises is quite below its cost of capital and overall cost of capital in almost fiscal years of the study period. Thus, it can be concluded that capital structure of enterprises in public sector in Nepal more or less is the

out comes of the deliberate decision of HMG/N but not a product of market and public enterprise structure.

Mr. Gopal Prasad Regmi (1998) has conducted "A Study on Capital Structure Management of Necon Air Limited". The study showed that the company as operating with debt capital relatively higher then equity capital. So, he concluded that the company should make a drastic reduction in total debt capital and if it's not possible, they need to issue of more equity shares or convert preference share into equity share. He further added that the company should minimize its operational cost and apply technological based management to strengthen the company's cooperative capability. Apart from these strategies, he suggested that the management should adopt comparative strategy policy to balance with its different investors, as well as, identify and select the best alternative financial from available fund.

From the review of empirical studies conducted in terms of different companies, it is transparent that relationship between capital structure and cost of capital is almost non-existent in the companies. Thus, this study is conducted to analyze the capital structure of selected joint venture banks expecting that will provide useful information for policy implementation.

Mr. Shanty Raj Prashai (1999) has done a study on "Capital Structure of Nepal Bank Ltd." The basis objective of the study is to analyze the interrelationship and trends among some of the component parts of capital and assets structure tools, such as ratio percentage, index, average and coefficient of correlation.

From the study it is known that the bank is composed of its capital with the major portion of deposit. The total assets of the bank are the composition of loan and advance,

cash investment and other assets. Among these all component loan and advance are the major portion. During the study, total assets and capitals are increasing trend. But increasing rate of components is different. So the interrelationship of the components is fluctuating. The average growth rates of net profit, and higher then the growth rate of total expenses. The total income and total expenses are not under control of the bank. And net profit is only 40.64% of the total income. He has recommended that the bank showed total as well as expenditure and suggested that total deposit and investment must also be controlled by the bank. The bank needs to reduce its expenses and control fluctuation in the earnings per share to improve its market price per share.

Mr. Kamal Raj Pathak has carried out a study on "Capital Structure and Profitability: A Comparative Cash Study Between Nepal Indosuez Bank Ltd. and Nepal Grindlays Bank" (1999) The capital structure of both banks are highly levered, so it is difficult for them to pay interest and principal that may ultimately lead them liquidity or bankruptcy. There is no significant relationship between debt and equity ratio in terms of fixed deposit to net worth and overall capitalization rates of the banks. The ROE fluctuations fund to be influenced by the dividend payout ratio and interest margin in NIB Ltd. Both banks very in the case of total assets, number of bank branches volume of transactions. Both the banks are efficient and well established and doing well. He has suggested that NIB Ltd. should expand assets and branches, which many ultimately affect the banks performance and increase the profitability more then ever.

Mr. G. B Tamang has done comparative study about two hotels Yak and Yeti and Soaltee, a comparative study with the analyze, which is entitled "An Impact of Capital Structure on Profitability" (2001). He found that profit is one the measurements

of successful organization in planning its most optimum capital structure to provide maximum return to its shareholders and increase the value of the firm. By analyzing the debt to equity ratio in terms in ling term debt and shareholders equity, both hotels' D/E ratio are not higher according to the standard ratio, which constitute 1:1.

Hotel Yak and Yeti are trying to be levered company, which has practice of increasing the D/E ratio, since 2055/056 by approximately 27% every year. While calculating the correlation coefficient, he found that Hotel Soaltee has negative correlation coefficient and there is safety to lenders last year, which is indicated by the decreasing D/E ratio. Hotel Soaltee does not have financial leverage that is why changes in EBIT are not able to bring change in EPS. Therefore he has suggested that hotel Y and Y to should reduce its equity multiplier and increase the use of assets efficiently, in other to get higher ROE. Both hotels have once higher profit margins. But it is impossible to get high profit margins every time. So they should try to increase assets turnover and redeem the amount of total debt, otherwise such debt would be a burden in terms of paying fixed interest while hotels are not getting high profits. He has also recommended that they should give equal importance to other factors like operating efficiency and assets efficiency, etc and the government also should make effective tourism policy.

Mr. Shambhu Prasad Parajuli has studied "Capital Structure and its Impact on Profitability of Nepal Lever Ltd. (2001). He has analyzed that the appropriate mix of capital keeps a firm sound and healthy. In the long run, liquidity may depend on the profitability of a firm but to achieve long run profitability, it has to depend on its capital structure to some extent. He has used hypothesis to measure the significant relationship between debt and equity.

The NLL's long-term debt seems very high at the time of establishment. But in fiscal years 2055/056 and 2056/057, there is no long-term debt at all. Thus it can be said that the company's management is reluctant toward employing long-term loans. From the du point analysis, it is found that the profit margin and equity multiplier are in decreasing trend, which causes continuous decease in ROE. Now it appears that ROE can be levered up by increasing the amount of debt in the firm. According to different calculations, he has found that performance of NLL is not in satisfactory level. He has recommended the maintenance of a proper capital structure by including the long-term debt.

Mr. Umash Kumar Koirala has studied "A Comparative Evaluation of Capital Structure between Dabur Nepal Pvt. Ltd. (DNPL) and Nepal Lever Limited (NLL)" (2003) According to his study the DNPL highly levered firms and NLL is unlevered since four years. The debt equity ratio, in terms of long-term debt and shareholders equity, of DNPL is higher then NLL.

The capital structure of DNPL is debt based whereas NLL cut off long-term debt financing. So, he has suggested both the companies to change their debt by changing long term debt while financing. So, both the companied are suggested to maintain appropriate debt ratio, which minimizes the cost and maximizes the return of the firm. He further finds that the DNPL is bearing high amount of interest expenses due to higher debt equity ratio and other operating expenses. Similarly, NLL also is bearing high interest expenses even it does not use long terms debt in its capital structure. As a result, the return of the firm is not satisfactory. So, he has recommended both the companies to minimize interest expenses by using cheaper debt as well as other operating expenses to increase the return of the firm.

Mr Degendra Raj Pokheral(2008) has carried out a study on "Analysis of Capital Structure in Selected Joint Venture Banks of Nepal" his study has been under taken only five JVBs. HBL, NB bank, Nabil, SCBL, and SBI to examine and evaluate the financial data, besides, latest financial rate of five fiscal years from 2059/2060 to 2063/2065. All JVBs has used higher percentage of total debt in raising the assets. Higher ratio constitutes that the outsider's claim in total assets of the banks is higher than owner's claim the financial risk of the banks SCBL average of financial leverage which indicates the higher degree of financial risk. Though the banks are highly leveraged, SCBL seems to be more leverage bank in comparison with selected banks. On an average, SCBL has high D/E ratio, which should be reduce as quickly as possible. As well as, other four banks should check their D/E ratio carefully. The ROE ratio has great impact to show the relative performance and strength of the bank ion attractive future investment. Nabil banks earning of 42.01% infers that the banks has been able to utilize shareholders equity inefficient way. The ROE ratio of HBL.SCBL and SBI banks shows them satisfactory return of earning that is most desirable objective has been accomplished likewise; SBI has 12.08% earnings on shareholders equity which is in comparison with other banks slightly low rate of return.

All the above studies are concerned with the research title "Capital Structure". Almost all the rations have been applied to cover the analytical part and fulfill the objectives of the study. Probably this study may be the first of its kind in the area.

Chapter 3

Research Methodology

Research is the systematic inquire for seeking facts and methodology is the method of doing research in well manner. So research methodology means the analyses of specific topic by using proper method. In other words, research methodology is the way to solve systematically the research problem.

This chapter presents the short out line of the methods applied in the process of analyzing the capital structure of the selected Joint Venture Banks. Research **is** a systematic method of finding out solution to a problem whereas research methodology refers to the various sequential steps to adopt by researcher in studying a problem with certain objective in view,

3.1 Research Design

Research is the plan, structure and strategy of investigation conceived so as to obtain answer to the questions and to control variance. (Wolff. & Panta: 1999: 50) It helps the investor to obtain answer to the question of research and also helps him to control the experimental, extraneous and error variance of particular research problem under study. So the formidable problem that fallows in task of defining research is preparation of design of the research project popularly known as research. (Wolff & Panta: 1999: 39)

For the analysis of the capital structure of Joint Venture Banks, analytical as well as descriptive designs are applied to achieve the objective of the research.

3.2 Population and Sample

Population

There are 25 Commercial Banks in Nepal but out of them only 20 banks are listed. Out of them 9 Commercial Banks are established as Jointer Venture in Nepal. So, all the Joint Venture Banks operating in Nepal are considered as the population for the research. Thus, following banks are the population of the study:

1. Nepal Arab Bank Ltd. (Nabil Bank Ltd)
2. Nepal Investment Bank Ltd.
3. Himalayan Bank Ltd.
4. Nepal SBI Bank Ltd.
5. Standard Chartered Bank Nepal Ltd.
6. Nepal Bangladesh Bank Ltd.
7. Everest Bank Ltd.
8. Bank of Kathmandu Ltd.
9. Nepal Credit and Commercial Bank Ltd

Sample

The sample used in this research is purposive in nature. Thus, three Joint Venture Banks cover 33.33% of the population as sample (3/9x100). They are:

1. Himalayan Bank Ltd.
2. Nepal SBI Bank Ltd.
3. Standard Chartered Bank Nepal Ltd.

3.3 Nature and Source of Data

This study is mainly based on the secondary data collected from the different published sources. In additional to the published data, some information are collected from the visit of the concerned banks, conversation with the employees, and the observation of concerned banks, telephonic inquirers, personal visit, inquires by e-mail etc. the major sources of secondary data are: Brochure of concerned banks, published reports from Security Board, economic surveys, and websites of concerned banks. The basic sources of data used are as follows:

1. Annual reports
2. Published materials from concerned JVBs
3. Financial statements of concerned JVBs
4. Related books and journals

3.4 Method of Data Analysis

Mainly financial methods are applied for the purpose of this study. Appropriate statistical tools are also used. Among them correlation analysis regarded as major one used for this research.

3.4.1 Financial Tools

The measuring instrument, which can be used in financial analysis, is known as financial tool. It helps to calculate the relationship between two financial variables on ratio and percentage basis. Analysis of leverage cannot be complete without financial analysis. Due to this reason, this study highly depends upon financial tools like degree of leverage and ratio analysis. Under this analysis, the following calculations are made:

3.4.1.1 Degree of Operating Leverage (DOL)

The degree of operating leverage measures a proportionate change in EBIT as a result of a given change in sales. The operating leverage can be measured more precisely in term of degree of operating leverage (DOL) can be computed as:

$$DOL = \frac{\%\ change\ in\ operating\ profit}{\%\ change\ in\ sales} \qquad DOL = \frac{\Delta EBIT/EBIT}{\Delta sales/sales}$$

3.4.1.2 The Degree of Financial Leverage

The degree of financial leverage measures a proportionate change in EBT as a change in EBIT. The financial leverage exists when the company has debt capital in the composition of capital structure. The extra amount of investment by debt capital can be measured only with the help of financial leverage, which is calculated as:

$$DFl = \frac{\%Change\ in\ EPS}{\%Change\ in\ EBIT} \qquad DFL = \frac{\Delta EPS/EPS}{\Delta EBIT/EBIT}$$

3.4.1.3 The Degree of Combined Leverage (DCL)

The degree of combined leverage measures the relationship between percentage changes in EBT and percentage in sales. Calculating the effect of total leverage on EBT associated with a given change in sales is described as a combined leverage. The degree of combined leverage is defined as a percentage change in EBT due to given percentage change in sales.

$$DCL = \frac{\%change\ in\ EBIT}{\%change\ in\ sales}\ X \frac{\%\ change\ in\ EPS}{\%\ change\ in\ EBIT}$$

$$= \frac{\%\ change\ in\ EPS}{\%\ change\ in\ sales}$$

3.4.1.4 Ratio Analysis

A widely used tool for the financial analysis is ratio analysis. It is defined as the systematic use of ratio to interpret the financial structure so that the strength and weaknesses of a firm as well as historical performance and current financial condition can be determined. Management should be able analyze the financial strength so as to find out the weaknesses of the company and erase them out by making rational decision. In other words, management may have different types of weaknesses, which may be the causes of unsuccessful organization. So the company should use an analytical tool to know about its own situation and take a suitable and corrective action to relive from arising problem. The most useful tool of financial analysis is ratio analyses.

Various ratios can be computed, but ratios, which are directly related with the study of leverage and profitability, are computed and analyzed in this study.

1. Long Term Debt to Total Debt Ratio

It specifies the contribution of long-term debt holders to the total debt of the company. It is calculated by long-term debt divided by the total debt.

$$Long\ term\ Debt\ to\ Total\ Debt = \frac{Long\ term\ Debt\ (LTD)}{Total\ Debt}$$

Higher ratio indicates the higher contribution of long-term debt to the total debt i.e. higher leverage risk and vice versa.

2. Long Term Debt to Shareholders Equity ratio

This ratio also measures the leverage risk of the company. It specifies the contribution of owner to the total capital. It can be calculated by the long-term debt divided by shareholders equity

$$Long\ term\ Debt\ to\ Shareholders\ Equity = \frac{Long\ term\ Debt\ (LTD)}{Shareholder's Equity}$$

Higher ratio indicates the higher contribution of owner then creditors. It also indicates the lower leverage risk and vice versa.

3. Total Debt to Shareholders Equity Ratio

The total debt to shareholders ratio is vital tool to analyze the long-term solvency of the firm. This ratio equals the firm's debt divided by its equity, where debt can be defined as total debt or long-term debt. Thus it is computed as:

$$Total\ Debt\ to\ Shareholder's Equity = \frac{Total\ Debt}{Shareholder's Equity}$$

Higher ratio indicates the comparatively higher contribution of debt holders then shareholders. It also indicates that at the time of liquidation higher portion of total assets will be claimed by the debt holders.

4. Total Debt to Total Assets Ratio

It is commonly known as debt ratio. It specifies the contribution of debt holders to the total assets of the firm. It is measured by using following formula.

$$Total\ Debt\ to\ Total\ Assets = \frac{Total\ Debt}{Toal\ Assets}$$

Higher ratio specifies the higher leverage risk or higher contribution of debt holders to the total assets. Too high ratio leads the carelessness of shareholders to the business activities.

5. Shareholders Equity to Total Assets

This ratio also indirectly measures the leverage risk of the company. It can be computed subtracting debt ratio from 1 or using following formula:

$$Shareholder's\ Equity\ to\ Total\ Assets = \frac{Shareholder's\ Equity}{Total\ Assets}$$

Higher ratio indicates the lower leverage risk and vice versa.

6. Interest Coverage ratio

The interest coverage ratio also known as the time-interest-earned ratio is one of the most conventional coverage ratio used to test the firm's debt-servicing capacity. The ratio show the number of times the interest charges are covered by funds that are ordinarily available for their payment. The interest coverage ratio is thus computed as:

$$Interest\ Coverage\ Ratio = \frac{EBIT}{Interest}$$

Higher ratio indicates the strong debt service capacity of the company and vice versa. Too high ratio refers the unused debt capacity of the company.

7. Profit Margin

It is profitability ratio in relation with sales. It measures the combine effects of debt management, assets management or overall efficiency of the firm to earn to profit. It is the percentage of net profit to the total sales.

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

Higher ratio indicates the higher profitability or efficiency of the company.

8. Return on Total Deposit Ratio

Major financial source of bank is deposit collection and deposits are mobilized for insurance and advance and in other investment to earn profit. This return helps to find the profit earned using total deposits.

Return on total deposits ratio can be formulated as below:

$$Return\ on\ Total\ Deposit = \frac{Net\ Income}{Total\ Deposit}$$

9. Return on Shareholders Equity (ROE)

Return shareholders equity is calculated to see the profitability of owner's investment. The shareholders equity includes paid-up share capital, share premium and reserve and surplus less accumulated losses. The return on shareholders equity is net profit after taxes divided by shareholders equity.

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

Higher ratio is more efficient of management and utilization of shareholder's funds and vice versa.

10. Return Assets (ROA)

A ratio between net profits to assets is known as return on asset. But generally return on asset can express the relationship between net profit after taxes and total assets.

$$ROA = \frac{Net\ profit\ after\ Tax}{Total\ Assets}$$

Higher ratio implies that the available source and tools are employed efficiently.

11. Earning Per Share (EPS)

The income per share of common stock is known as earning per share. This ratio is mostly used in capital structure to known the availability of return for shareholders. The earning per share is calculated by dividing the profit after taxes by the total number of common share outstanding.

$$EPS = \frac{Net\ profit\ Avilable\ to\ Common\ Shareholder's}{Number\ of\ Share\ Outstanding}$$

The increasing EPS means the increasing return for shareholders.

12 Dividends per Share (DPS)

Dividend per share is the earnings distributed to ordinary shareholder's dividend by the number of ordinary shares outstanding:

$$DPS = \frac{Divedend}{Number\ of\ share\ outstanding}$$

13. Dividend-Payout Ratio

The dividend-payout ratio is dividend per share divided by the earning per share. It can be computed as:

$$DPR = \frac{Dividend\ per\ Share}{Earning\ per\ Share}$$

14. Overall Capitalization Rate under NI Approach

The NI approach known as relevant theory of capital structure is already discussed in former chapter. Hence, the formulas used to compute the value of the firm and overall capitalization rate under NI approach is given;

Market value of the firm = market value of debt+ market value of stock.

Or, V=B+S

And,

$$Overall\ Capitalization\ rate = \frac{EBIT}{Value\ of\ the\ Firm}$$

Or, $$Ko = \frac{EBIT}{V}$$

15. Equity Capitalization Rate under NOI Approach

The equity is one of the sources of capital, which has its own cost and it is known as cost of equity. A large amount of equity means the higher amount of cost of equity. The equity capitalization rate under NOI approach can be calculated as:

$$Equity\ Capitalization\ Rate = \frac{EBT}{Market\ Value\ of\ Coman\ Shares}$$

$$Ke = \frac{EBT}{S}$$

3.4.1 Statistical Tools

For the purpose of the study simple statistical tools are used. Mainly financial tools and techniques have been used to show the financial condition of the selected joint venture banks. Hence, statistical tools used in the study are as follows:

3.4.2 Sampling

Firstly random sampling of JVB is done. For the purpose of the study five JVBs are selected out of several banks operating in Nepal. These companies are used as sample of the current position of JVBs in the Nepalese context.

3.4.1.1 Tabulation

The raw data and the findings are shown in tabulated from to show the clear view and to make the comparison easier. Many variables can be shown and the same graph and comparison can be made.

3.4.1.3 Correlation analysis

Correlation analysis measures the relationship between the variables. There are several methods of measuring correlation. In this research, Karl Pearson's methods known as Pearsonian coefficient of correlation is used. Karl Pearson's coefficient of correlation is simply denoted by the symbol 'r'. To interpret the result obtained from calculation of 'r', following general rules are applied:

If the value of r = +1, there is perfect correlation between the variables.

If the value of r = 1, there is no relationship between the variables, i.e. the variables are uncorrelated.

The closer r is to +1 or -1, the closer the relationship between the variables and the closer r is to o, the less close the relationship.

Study of the correlation helps in decision-making. In this research, the correlation between return and net worth is examined by applying the following formula:

$$r = \frac{\sum dx\, dy}{\sqrt{\sum (dx)^2}\sqrt{\sum (dy)^2}}$$

Here,

N = number of pairs of x and y observed

X = Value of loans and advance

Y = value of total deposits

R = Regression correlation coefficient.

3.4.1.4 The Probable Error

The probable error of the coefficient of correlation helps in interpreting its value. With the help of probable error it is possible to determine the reliability of the value of the

coefficient in so far as it depends on the condition of random sampling. The probable error of the coefficient of correlation is obtained as follows:

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

Here,

R = correlation coefficient.

n = number of pairs of observations.

If the value of r is less then the probable error, there is no evidence of correlation, i.e., the value of r is not at all significant. Then, if the value of r is more then six times the probable error, the coefficient of correlation is practically certain, i.e., the value of r is significant.

3.4.1.5 Coefficient of Variation

The corresponding relative measure is known as the coefficient of variation. This measure developed by Karl Pearson is the most commonly used measure of relative variation. It is used to compare the variability of two or more then two series or group. Coefficient of variation is denoted by C.V and is obtained as follows:

$$C.V. = \frac{\pm}{\overline{X}} \times 100$$

Here, ± Xstandard deviation.

$\overline{X}$ = Actual mean or average.

Chapter 4

Presentation and Analysis of Data

4.1 Introduction

This chapter named, as presentation and analysis of data constitute the most crucial part of study. It provides a mechanism for meeting the basic objectives stated earlier in the first chapter of this research. The research has followed the methodology described in third chapter in order to attain the objectives. Thus application of the major variables taken into account for the purpose of the study are total debt and total assets, EBIT and EBT, total debt and net worth, NPAT and shareholders equity, EBIT and interests, net income and net operating income approach, co-efficient of correlation analysis of different variables of selected banks.

The firm should maintain a sound capital structure to run its business operation in this competitive world. Both excessive as well as inadequate capital structure positions are dangerous from the firm's point of view. So, an enlightened management should, therefore, maintain right capital structure to meet its objectives.

The rations of a firm by themselves do not reveal anything. For meaningful interpretation the ratios of firm should be computed with the ratios of similar firms. Such comparison will reveal whether the firm is significantly out of line with its competitors. If it is significantly out of line, the firm should undertake a detailed analysis to spot out the trouble areas. The study which is descriptive is conducted using each of the bank's financial statements for the last five fiscal years. Hence various hypotheses on gauging the effectiveness of the bank are developed and tested using descriptive as well as statistical tools to analyze the compatibility of the banks.

4.2 Analysis of Financial Leverage

Financial leverage shows what portions of the capital assets are financed by outside funds. When successfully employed, this ratio benefits the shareholders by raising their expected return-earning per share. High ratio shows banks success in exploiting debt to be more profitable as well as it also indicates its riskier capital structure.

Table 4.1

Financial Leverage

(Ratio in %)

FY	HBL	SCBL	SBI
2060/061	94.66	93.67	92.58
2061/062	94.46	92.74	93.34
2062/063	94.00	99.32	92.46
2063/064	93.60	92.60	91.63
2064/065	93.05	92.52	91.77
Average	**93.95**	**94.17**	**92.36**
S.D	0.65	2.93	0.69
C.V	0.69	3.10	0.75

Source: Appendix I, II & III

The computation from the Table 4.1 of financial leverage in terms of total debt to total assets reveals that the three JVBs are highly leveraged on five years time horizon. It means the assets of selected banks have been financed more by funds collected from creditors.

Himalayan Bank has the most stable trend among three banks over the study period. On an average, 93.95% of debt capital is used to finance its assets and only 6.05% of shareholders equity is financed to the remaining portion of assets. The average ratio of HBL for the study period is quite similar with five operating years; 94.66%, 94.46%, 94%, 93.60%

& 93.05% in FY 2060/061 to FY 2064/065 respectively. The ranges of ratios are between 93.05% to 94.66% in 2064/065 and 2060/061 respectively. The highest ratio of HBL is 94.66% in 2060/061.

Standard Chartered Bank has the average ratio of 94.17%. In other words, creditors finance 94.17% of banks fund and remaining 5.83% is shareholders claim. The ratio of SCBL has fluctuating trend. In FY 2060/061, it has 93.67%, which decreased in FY 2061/062 to 92.67% in FY 2061/o62 and again increased to 99.32% in FY 2062/063. The ratio again decreased in FY 2063/064 to 92.60% and again decreased in FY 2064/065 to 92.52%. The highest percentage is 99.32% in FY 2063/063 and lowest is 92.52% in FY 2064/065.

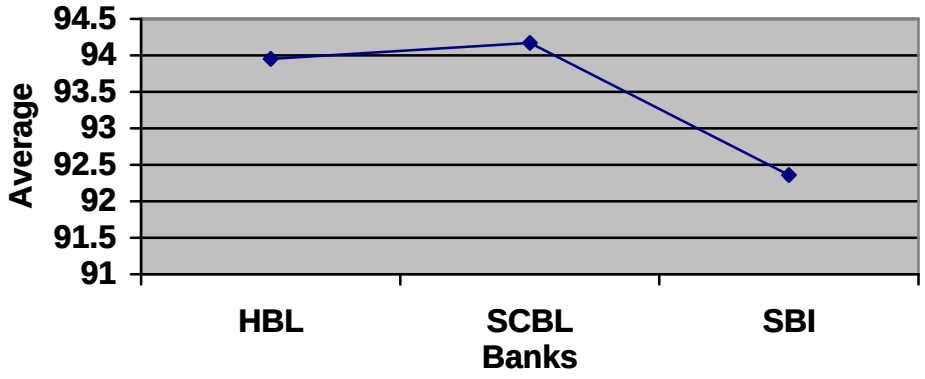
SBI has the lowest average ratio i.e. 92.36% among three banks. SBI has the highest ratio i.e. 93.34% in FY 2062/063, which reveals only 6.66% has been funded by the shareholders. The ratio has fluctuating trend from FY 2060/061 to FY 2064/065, which is 92.58%, 93.34%, 92.46%, 91.63% and 91.77% in FY 2060/061 to 2064/065 respectively.

The ratio of three JVBs is in slightly fluctuating trend. The standard deviation of HBL is 0.65, SCBL is 2.93 and SBI is 0.69. The standard deviation of HBL is 0.65, which is lower than other two banks, and SCBL has highest standard deviation, which is 2.93. In all three banks, the creditors margin of safety is very low which means they have high risk. All the banks are fund using higher debt capital to finance their assets.

The highest C.V. is 3.10 for SCBL and the lowest is 0.69 for HBL. The C.V. is range between 0.69 and 3.10 and the C.V. is 0.69, 3.10 and 0.75 HBL, SCBL and SBI respectively.

Figure 4.1

Total Debt to Total Assets



4.3

Analysis of Debt-Equity Ratio

The debt-equity ratio is the relationship between borrowed funds and owner's capital. It is determined to measure the firm's obligations to creditors in relation to the funds invested by owners. A high debt-equity ratio implies that a proportion of log-term financing is from debt sources that are the firm is using great deal of financial leverage. Long term creditors generally prefer to see a modest debt-equity ratio since it means greater production and a greater stake in the company's future for equity holders.

The total debt includes current account, saving accounts, calls and short deposit, over-draft fixed deposit, loan and advance and borrowing from other banks. Shareholder's equity or net worth includes paid-up capital, reserve and surplus. The D/E ratio of three selected JVBs during the study period was as tabulated below:

Table 4.2

Debt Equity Ratio

(Ratio in %)

FY	HBL	SCBL	SBI
2060/061	17.74	14.81	12.47
2061/062	17.06	12.76	14.01
2062/063	15.68	14.60	12.27
2063/064	14.62	12.51	10.95
2064/065	13.40	12.37	11.15
Average	**15.70**	**13.41**	**12.17**
S.D	1.77	1.19	1.23
C.V	11.27	8.87	10.11

Source: Appendix I, II, & III,

HBL has the highest D/E ratio of 15.70 times among selected banks. The ratio of HBL has ranged between 13.40 to 17.74 times. The average D/E ratio of HBL is 15.7 that mean the debt capital financing is more than 15 times higher than shareholders' equity within the bank. HBL D/E ratio is in decreasing trend i.e. 17.74, 17.06, 15.68, 14.62 and 13.40 times respectively over the five years period. Hence, the decreasing trend of D/E ratio implies that HBL is adopting highly conservative strategy.

Standard Chartered Bank ratio in an average is 13.41 times which states total debt is 13.57 times greater than equity. Thus indicates that SCBL has been highly claimed by creditors. The trend is decreased in its initial 0ne years and increased FY 2062/063 but it is again decreased in last year. Hence, the ratio is 14.81, 12.76, 14.60, 12.51 and 12.37 times from 2060/061, 2061/062, 2062/063, 2063/064 and 2064/065 respectively. The ratio has ranged 12.37 to 14.81 times.

SBI Bank has D/E ratio of 12.17 times on an average the bank has 12.47 D/E ratio in FY 2060/061, 14.01 times in FY 2061/2062 and the ratio lowered down gradually in last two

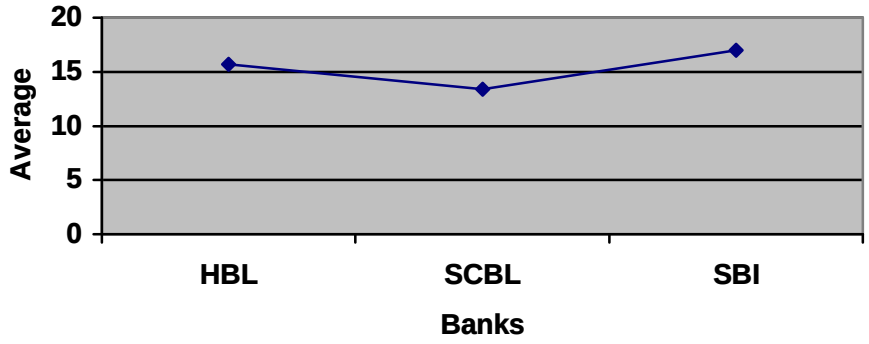
subsequent years i.e. 12,27 and 10.95 times in FY 2062/063 and 2063/064 respectively. But ratio rose to 11.15 times in FY 2064/065.

The ratio of three JVBs is in fluctuating trend. The standard devotion of HBL is 1.77; SCBL is 1.19 and SBI Bank 1.23. The standard devotion of SCBL is 1.19, which is lowest than other two banks and HBL has highest standard devotion, which is 1.77. In all three banks, the creditor's margin of safety is very low which means they high risk. It reveals that all five banks are highly leveraged. Thus, it can be concluded that all the banks have lower rate of shareholder's equity over the claims of creditors.

The highest C.V is 11.27 for HBL and the lowest is 8.87 for SCBL. The C.V. range between 8.87 to 11.27 and the C.V is 11.27, 8.87 and 10.11 for HBL, SCBL and SBI respectively.

Figure 4.2

Debt Equity Ratio



4.4 Analysis of Interest Coverage Ratio

The interest coverage ratio also named as the times-interest earned ratio is used to test the firm's debt servicing capacity. Interest coverage ratio reflects the firm's ability to pay

interest out of earnings. This ratio shows the numbers of times the interest charge are covered by funds by funds that are ordinarily available for their payment.

Too high or too low ratio as well is unfavorable to the banks. Too high ratio implies unused debt capacity or a firm's conservativeness in using debt to its best advantage. Whereas, low ratio imply a danger signal that the firm is using excessive debt and does not have the ability to offer assured payment of interest to the creditors.

Table 4.3
Interest Coverage Ratio

(Ratio in %)

FY	HBL	SCBL	SBI
2060/061	1.86	3.80	1,43
2061/062	1.93	4.13	1.48
2062/063	2.04	4.08	1.60
2063/064	1.96	3.44	1.92
2064/065	2.13	3.53	1.84
Average	**1.98**	**3.80**	**1.65**
S.D	0.10	0.31	0.22
C.V	5.05	8.16	13.33

Source: Appendix I, II, &III

Table 4.3 has been constructed to show the effect of interest coverage ratio of three selected banks over five year's period. It is noticeable that Standard chartered bank has higher average ICR and SBI Bank has lower average of ICR.

The Interest coverage ratio of HBL was 1.86 times in FY 2060/61, which was the lowest ratio over the study period. Then the ratio rose for subsequent tow s, i.e. 1.93, 2.04 times in FY 2061/62 and FY 2062/63 respectively. It indicates that the bank was able to maintain sufficient EBIT to meet the interest obligation only in these years. Again in FY 2063/64 the ratio to 1.96 times but again, it is increase in FY 2064/65, which is 2.13 times, on an average, the ratio was 1.98.

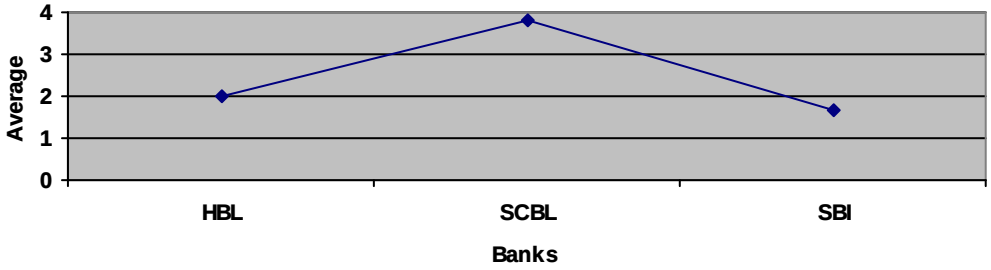
The interest coverage ratio of SCBL was 3.8 times in FY 2060/61, and then it has increased to 4.13 times in FY 2061/62. Therefore, it decreases to 4.08 times and 3.44 times in FY 062/63 and FY 2063/64 respectively. Again, it has increase to 3.53 times in FY 2064/65. On an average the Bank has 3.80 times ICR, which could be consider as right debt service capacity.

The interest coverage ratio of SBI Bank was 1.43 times in FY 2060/61 which was the lowest ratio over the study period. The ratio was increasing trend. The ratios are 1.43, 1.48, 1.60 and 1.92, FY 2060/61, 2061/62, 2062/63, 2063/64, respectively. Again the ratio is decreases 1.84 times in FY 2064/65. The average ratio is 1.65 times of SBI bank.

The computed interest coverage ratio of these banks in above table shows how many times the interest charges are cover by funds that the ordinary available to pay interest charges. Although generalities but what is an appropriate interest coverage ratio is difficult but t higher ratio is preferred desirable. The ratio of these joint ventures banks in fluctuating trend. The standard deviation of HBL is 1.10, SBL is 0.31 and SBI Bank is 0.22 the standard deviation of HBL is 0.10, which is lowest then other two Banks and SBL has highest standard deviation, which is 0.31. Though coverage ratios of banks are positive, the Banks should make effort to improve the prevailing situation by improving their operating efficiency and to reduce amount of debt capital through refunding date simultaneously.

The highest C.V. is 13.33 for SBI Bank and the lowest is 5.05 for HBL. The C.V. is in the range between 5.052 and 13.33, and the C.V. is 5.05, 8.16, and 13.33 for HBL, SCBL and SBI respectively.

Figure 4.3
EBIT to Total Interest Expenses



4.5 Analysis of degree of financial leverage.

It is a already started that financial leverage referred to the use of interest bearing debt and preferred stock along the debt capital. The degree of financial leverage indicates the degree of financial risk, i.e., higher the value of degree of financial leverage, higher the degree of financial risk and vice versa. The degree of financial leverage can be calculated a:

$$DFL\ X\frac{\%\,change\,in\,EPS}{\%\,change\,in\,EBIT}$$

$$or, DFL\ X\frac{EBIT}{EBIT\ ZI}$$

The degree of financial leverage employ by three selected bank has been shown in table 4.4,

Table 4.4

Degree of financial leverage

FY	HBL	**SCBL**	**SBI**
2060/061	0	0	0
2061/062	-0.15	33.33	-1.37
2062/063	1.08	1.28	0.95
2063/064	0.24	-0.32	1.91
2064/065	0.19	-1.82	-6.9
Average	**0.27**	**6.49**	**-1.08**
S.D	0.48	7.51	1.39
C.V	177.78	115.72	321.29

Source: *Appendix I, II &III*

HBL has also fluctuating trend of degree of financial leverage over the study period. The DFL has been -0.15 in FY 2061/62. Which is increase in FY 2062/63 as well as positive that is 1.08 but the DFL is decreases in FY 2063/64 that is 0.24. Again it is decreased which came to 0.19 in FY 2064/65. The average DFL for HBL is 0.27, which is higher than almost year expect the FY 2062/63

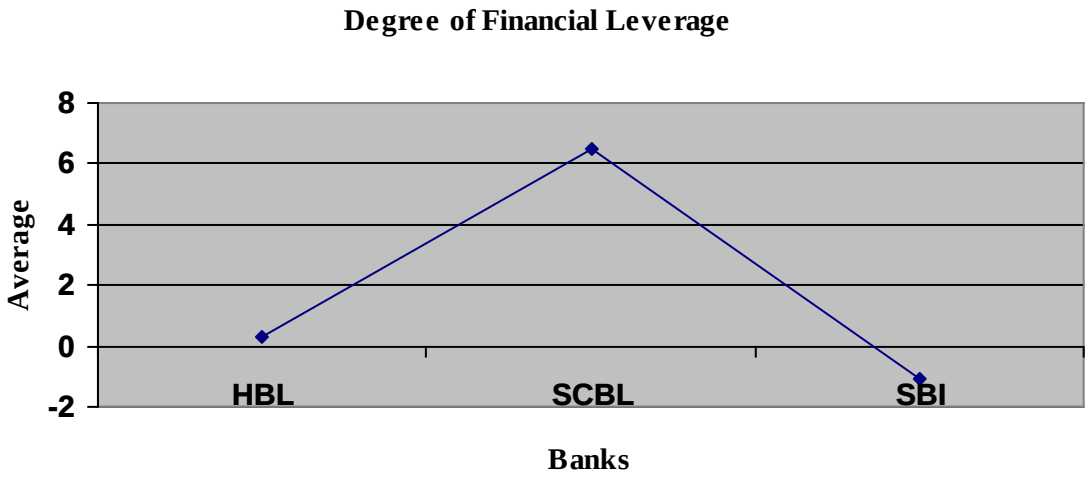
Among selected banks, SCBL has the highest ratio of 6.49 times DFL on an average, which reflect the Bank has higher degree of financial leverage risk. The DFL ratio in 2063/64 and 2064/65 are negative, which is -0.32 and -1.82 in FY 2063/64 and 2064/65 respectively. The DFL has a fluctuating trend. The DFL is increased in FY 2061/62 by 33.33. But it is decrease in FY 2062/63 by 1.28. The ratio of SBL in FY 2061/62 is higher over the study period of all the Banks as SCBL has higher DFL it represents higher financial risk for the bank.

The degree of financial leverage of SBI in FY 2061/62 is -1.37. the DFL of SBI banks for subsequent 5 years is -1.37, 0.95, 1.91 and -6.9 in FY 2061/62, 2062/63, 2063/64 and 2064/65 respectively the average DFL for SBI is -1.08, which is negative the DFL is in fluctuating trend for SBI.

The ratio of these JVBs is in fluctuating trend. The standard deviation of HBL 0.48, SCBL is 7.51 and SBI Bank is 1.39. The standard deviation of SCBL is 7.51, which is highest standard deviation than other two banks, and HBL has lowest standard deviation, which is 0.48. Hence, it can be figured that SCBL bank is the riskier bank in terms of other banks is the degree of financial leverage is very high.

The highest C.V is 321.29 for SBI Bank and the lowest is 115.72 for SCBL bank. The C.V is range between 115.72 and 321.29, and C.V is 177.78, 115.72 and 321.29 for HBL, SCBL respectively.

Figure 4.4



4.6 Return on Total Assets

Return on total assets ratio measures the profitability of bank that explains a firm to earn satisfactory return on all financial resources invested in the banks assets; otherwise its servable is threatened. The ratio explains net income for each unit of assets. Higher ratio includes efficiency in utilizing its overall resources and vice versa. Rate of return on total assets is major tool to judge the operational efficiency of firm. The return on assets ratio of selected banks is as follows:

Table 4.5

Return on Total Assets

(Ratio in %)

FY	HBL	**SCBL**	**SBI**
2060/061	1.06	2.27	0.72
2061/062	1.11	2.46	0.55
2062/063	1.55	2.57	0.90
2063/064	1.47	2.42	1.83
2064/065	1.76	2.46	1.44
Average	**1.39**	**2.44**	**1.09**
S.D	0.30	0.11	0.53
C.V	21.58	4.51	48.62

Source: Appendix I, II and III

The ratio of HBL is 1.06 in FY 2060/061 than it is increased in FY 2060/061 to 2062/063, which is 10.6, 1.11 and 1.55 in FY 2060/061, 2061/062 and 2062/063 respectively. But it is decreased in FY 2063/064, which is 1.47. Again it is increased in FY 2064/065, which is 1.76. The average ratio of HBL is 1.39. The ratio is higher than FY 2060/061 and FY 2061/062. But it is lower than FY 2062/063 to 2064/065.

The ratio of SCBL is range between 2.77 to 2.57 in FY 2060/061 and 2062/063 respectively. The ratios are in fluctuating trend. The ratio are 2.77, 2.46, 2.57, 2.42 and 2.46 in FY 2060/061, 2061/062, 2062/063, 2063/064 and 2064/065 respectively, the average ratio of SCBL 2.44.

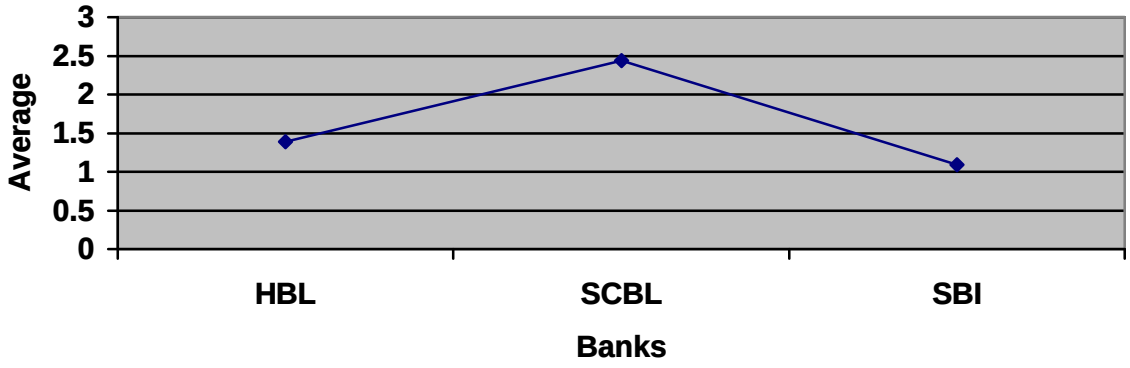
The SBI bank has 0.72 ratios in 2060/061, which is decreased in 2061/062 and that is 0.55. But it is increased in FY 2062/063 to 2063/064 that is 0.90 and 1.83. Again it is decreased in FY 2064/065 that was 1.44. The average ratio of SBI is 1.09.

SBI bank has higher rate than that other banks. The standard deviation is 0.30, 0.11 and 0.53 of HBL, SCBL and SBI respectively. SBI bank has higher ratio, which 0.53 and SCBL has lowest ratio, which is 0.11.

The highest C.V is 48.62 for SBI Bank and lowest is 4.51 for SCBL bank. The C.V is range between 4.51 and 48.62 and the C.V is 21.58, 4.51 and 48.62 for HBL, SCBZL and SBI respectively.

Figure no. 4.5

Return to Total Assets



4.7 Return to Total Deposit Ratio

Return on total deposit ratio assists to identify the banks overall performance as well as its sources in generating profit. The ratio here is calculated in order to diagnosis whether the banks are well efficient or not in mobilizing its total deposit so that corrective action could be forwarded to concerned banks. Higher ratio signifies better mobilization and utilization of deposits and vice versa.

Table 4.6

Return on Total Deposit

(Ratio in %)

FY	HBL	**SCBL**	**SBI**
2060/061	1.19	2.54	0.76
2061/062	1.24	2.77	0.89
2062/063	1.73	2.86	1.10
2063/064	1.64	2.81	2.23
2064/065	2.00	2.75	1.81
Average	**1.56**	**2.75**	**1.36**
S.D	0.34	0.12	0.63
C.V	21.79	4.46	46.62

Source: Appendix I, II, & III

Considering Standard Deviation of Banks, SBI Bank is relatively higher than other banks. Likewise SCBL has the lowest standard deviation. The ratios are 0.3, 0.12 and 0.63 in HBL, SCBL and SBI Bank respectively. The SCBL has highest ratio, which is 2.86 and SBI Bank has the lowest ratio, which is 0.76.

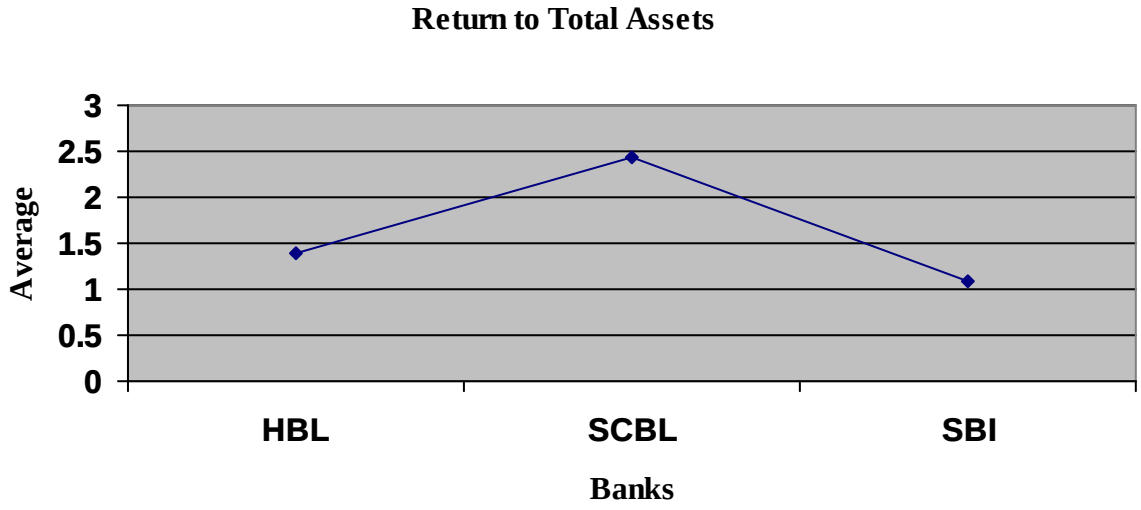
The HBL has the ratios ranged between 1.19 to 2.00 in FY 2060/061 and 2064/065 respectively. The average ratio is 1.56. The ratios are 1.19, 1.24, 1.73, 1.64 and 2.00 in FY 2060/061 to 2064/065 respectively. The ratios are in fluctuating trend.

SCBL has increased trend, the ratios are 2.54, 2.77 and 2.86 in FY 2060/061, 2061/062 and 2062/063 respectively. The ratios has decreased trend in FY 2063/064 and 2064/065, the ratios are 2.81 and 2.75 respectively. The highest ratio of SCBL is 2.86 in FY 2062/063. The average ratio of SCBL is 2.75.

SBI has the fluctuating trend. The ratios of SBI are 0.76, 0.89, 1.10, 2.23 and 1.81 in FY 2060/061 to 2064/065 respectively. The average ratio of SBI is 1.36. Considering ratios of banks, SCBL has relatively higher than other banks. Likewise, SBI has relatively lowest ratio. The ratios are 1.56, 2.75 and 1.36 in HBL, SCBL and SBI.

The highest C.V is 46.62 for SBI bank and lowest is 4.46 for SCBL bank. The C.V. ranges between 4.46 and 46.62, and C.V is 21.79, 4.46 and 46.62.for HBL, SCBL and SBI respectively.

Figure 4.6



4, 8 Analysis of Return on Shareholder's Equity

A return on shareholder's equity is calculated to see the profitability of owner's investment ROE indicates how well the firm has used resources of owners. Management's objective is to generate the maximum return of shareholder's investment in the firm. ROE is therefore the best single measure of the company's success in fulfilling its goal. Thus, this ratio is of great concern to management, which has responsibility of maximizing the owner's welfare. The ratio equals the net profit after taxes divided by the common stockholders' equity.

$$\text{Return on shareholders' equity} = \frac{Net\ profit}{Shareholder's\ Equity}$$

Table 4.7
Return on Shareholder's Equity

(**Ratio in %)**

FY	HBL	**SCBL**	**SBI**
2060/061	19.87	35.96	9.71
2061/062	20.00	33.89	8.33
2062/063	25.90	37.55	12.04
2063/064	22.91	32.68	22.10
2064/065	25.30	32.85	17.64
Average	**22.80**	**24.54**	**13.96**
S.D	2.84	2.11	5.77
C.V	12.46	6.10	41.34

Source: Appendix I, II, & III

The ratio of net profit to shareholder's equity for HBL is 19.87%, 20.005, 25.90%, 22.91% and 25.30% in FY 2060/061, 2061/062, 2062/063, 25063/064 and 2064/065 respectively. The average ratio is 22.80, the ratio ranges between 19.87% to 25.90% in FY 2060/061 and 2062/063 respectively. The ratio of net profit to shareholder's equity HBL is in fluctuating trend, which is decreased in FY 2063/064 by 2.99% but increased in FY 2060/061 to 2062/063 in ratios are 0.13% and 5.00% respectively. But it is increasing in FY 2064/065 to 2.5%.

SCBL has ratios of return on shareholder's equity of 37.55% in FY 2062/063. On average, it has 34.54%, which is higher than FY 2061/062, 2063/064 and 2064/065. The ratio are fluctuating trend, the ratio are decreased from FY 2060/061 to 2061/062. But it increased in FY 2063/064 to 32.68% and again it increased in FY 2064/065 to 32085%. The ratios are 35.96, 33.89%, 37.55%, 32.68% and 32.85% in FY 2060/061 to 2064/065 respectively.

SBI has resisted the range between 8.33% to 22.10% in FY 2061/062 and 2063/064 respectively among five years. The average ratio is 13.96%, which is higher than FY 2060/061 to 2062/063. The ratios are fluctuating trend; the ratios are increased to

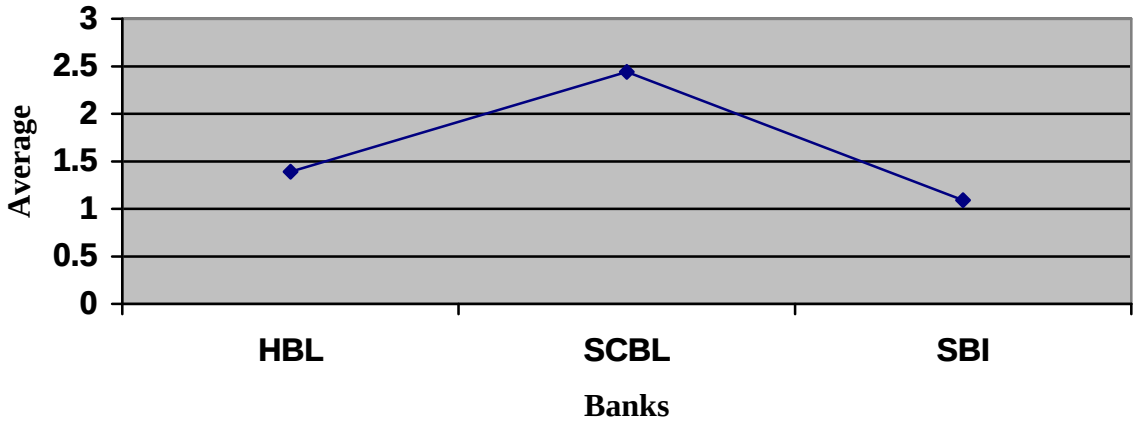
2061/062 to 8.33%. But it has increased FY 2062/063 and 2063/064 to 12.04% and 22.10% respectively. Again, ratios are decreased in FY 2064/065 to 17.64%. The ratios are 9.71%, 8.33%, 12.04%, 22.10% and 17.64% in FY 2060/061 to 2064/065 respectively.

On basis of standard deviation SBI Bank has highest among all, which explain that the variability of return on shareholder's equity is quit higher than remaining banks. Which comparing the ratios of ROE on an average among selected banks, SBI Bank has the higher percentage of return, which is 5.77 and SCBL has lower percentage of return, which is 2.11. The standard deviation for HBL is 2.84. The S.D. is HBL is 2.84, SCBL is 2.11 and SBI Bank is 5.77 respectively.

The higher C.V is 41.34 for SBI Bank and the lower is 6.10 for SCBL. The C.V. is ranges between 6.10 and 41.34, and the C.V. is 12.46, 6.10 and 41.34 for HBL, SCBL and SBI Bank respectively.

Figure 4.7

Return on Shareholder's Equity



4.9 Market Related Ratios

4.9.1 Earning per Share

Earning per share simply shows the profitability of the firm on a per share basis, it does not reflect how much is paid as divided and how much is retained in the business. EPS is one of the most widely used measures of the bank's performance. It is an important index of the bank's performance and investors rely heavily on it for their investment decisions.

In order to see the strength of the share in the market, EPS of selected JVBs is calculated as below:

Table 4.8.1

Earning Per Share

FY	HBL	**SCBL**	**SBI**
2060/061	49.05	143.55	14.26
2061/062	47.91	143.14	13.29
2062/063	59.24	175.84	18.27
2063/064	60.66	167.37	39.35
2064/065	62.74	131.92	28.33
Average	**55.92**	**152.37**	**22.7**
S.D	6.92	18.42	11.05
C.V	12.37	12.09	48.67

Source: Appendix I, II, & III

In comparison among selected banks, SCBL has highest EPS, which is Rs 175.84 in FY 2062/063 and the SBI Bank has lowest EPS in 13.29 in FY 2061/062. The EPS for HBL is fluctuating trend. The amount is Rs 49.05, Rs 47.91, Rs 59.24, Rs 60.66 and Rs 62.74 to FY 2060/061 to 2064/065 respectively. The amount is decreased is first two years but it is increased from 2062/063. The average amount of HBL is Rs 55.92.

The EPS for SCBL is fluctuating trend. The amount is Rs 143.55, Rs 143.14, Rs 175.84, Rs 167.37 and Rs131.92 in FY 2060/061 to 2064/065 respectively. The amount is decreased in first two years but it is increased in FY 2062/063, again it decreased in FY

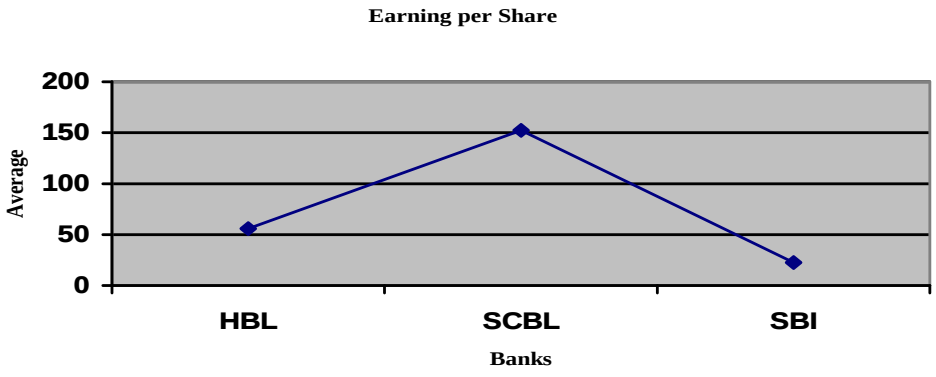
2063/064 and FY 2064/065. The average amount of SCBL is Rs 152.37, which is higher than FY 2060/061, FY 2061/062 and FY 2064/065 but lower than FY 2062/063 and FY 2063/064.

The EPS for SBI Bank is fluctuating trend. The amount is Rs 14.26, Rs 13.29, Rs 18.27, Rs 39.35 and Rs 28.33 in FY 2060/61 to 2064/65 respectively. The amount is decreases in FY 2061/2062 but increases in FY 2062/63 and 2063/64. Again, it decreased in FY 2064/65. The average amount of SBI Bank is Rs 22.7, which is higher than FY 2060/61 to FY 2062/63 and lower than FY 2063/64 and 2064/65.

Regarding standard deviation, EPs of SCBL has higher than other banks, which is 18.42 and HBL has lower that is 6.92. The standard deviation for HBL is 6.92, SCBL is 18.42 and SBI Bank is 11.05 respectively.

The highest C.V is 48.67 for SBI Bank and lowest is 12.09 for SCBL. The C.V. is ranges between 12.09 and 48.67 and the C.V is 12.37, 12.09 and 48.67 for HBL, SCBL and SBI Bank respectively.

Figure 4.8.1



4.9.2 Dividend per Share

Companies generally prefer to pay cash dividends. They finance their expansion and growth by issuing new share or borrowing. Companies like to follow a stable dividend policy since investors generally prefer such policy for certainty reasons. A stable dividend policy does not constitute constant DPS, but reasonably predictable dividend policy.

Table 4.8.2

Dividend per Share

FY	HBL	**SCBL**	**SBI**
2060/061	20.00	220.00	0.00
2061/062	43.16	240.00	0.00
2062/063	65.00	270.00	10.00
2063/064	55.00	210.00	60.18
2064/065	70.00	210.00	0.00
Average	**50.63**	**230.00**	**14.04**
S.D	19.97	25.50	26.16
C.V	39.44	11.09	186.32

Source: Appendix I, II, & III

HBL has distributed Rs 20.00, 43.16, 65.00, 55.00 and 70.00 in FY 2060/061 to 2064/065 respectively. The highest DPS of study period of HBL is Rs 70.00 in FY 2064/065. The average DPS of HBL is Rs 50.63, it is greater than FY 2060/061 and 2061/062 and lowest than FY 2062/063 to 2064/065.the HBL dividend per share is in fluctuating trend.

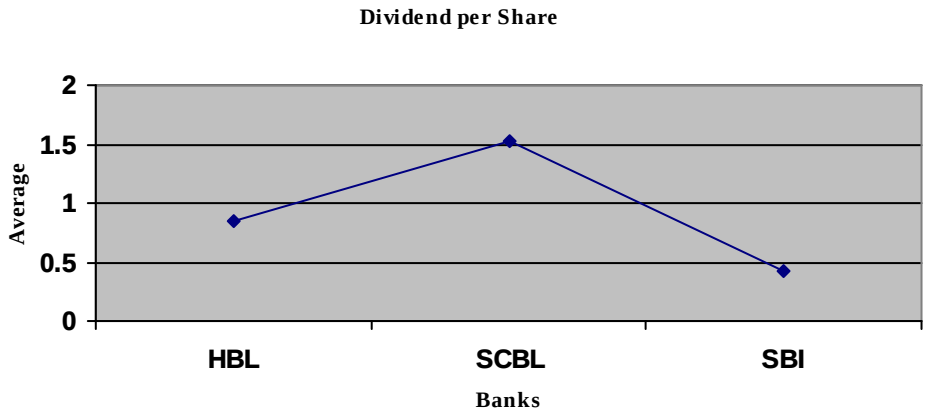
SCBL has distributed Rs 220.00 dividend per share in FY 2060/061. The amount are fluctuating which Rs 220.00, Rs 240.00, Rs 270.00, Rs 210.00 and Rs 210.00 in FY 2060/061 to 2064/065 respectively. The bank could able to distributed dividend amount all the fiscal years. The highest amount is Rs 270.00 in FY 2062/063 over the study period of all banks. The average DPS foe SCBL is Rs 230.00, which is higher than all of the banks.

SBI Bank has canned not distributed dividend in FY 2060/061 and 2061/062, but they can able to distributed dividend form 2062/063 to 2063/064 in Rs 10.00 and Rs 60.18. The bank has not able to paid dividend in FY 2064/065. The average for SBI Bank is Rs 14.04.

The S.D. of three banks is 39.44, 25.50, and 26.14 for HBL, SCBL and SBI Bank respectively. The entire selected banks dividend per share is fund in fluctuating trend. The higher S.D. is 26.14 for SBI bank and the lowest S.D. is 19.97 for HBL.

The highest C.V. is 186.32 for SBI Bank and lowest is 11.09 for SCBL. The C.V. is ranges between 11.09 and 186.32, and the C.V. is 39.44, 11.09 and 189.32 for HBL, SCBL and SBI Bank respectively.

Figure 4.8.2



4.9.3 Dividend payout ratio

The ratio represents the percentage of the profit distributed as dividend and the percentage retained as revenue and surplus for the growth of the bank slow down the growth rate of the firm. It helps to segregate the proportion of dividend and retained earnings. Importance of DPS lays in its ability to state the dividend policy of the concerned banks more obviously which influences the market value of the share.

Table 4.8.3

Dividend payout ratio

FY	HBL	SCBL	SBI
2060/061	0.40	1.53	0.00
2061/062	0.92	1.68	0.00
2062/063	1.10	1.54	0.55
2063/064	0.91	1.25	1.53
2064/065	0.90	1.59	0.00
Average	**0.85**	**1.52**	**0.42**
S.D	0.26	0.16	0.67
C.V	30.59	10.6	158.75

Sources: Appendix I, II and III

The DPR of HBL is 0.40 in FY 2060/061, the ratios for the bank is fluctuating because the dividend distribution is also fluctuating. The ratios are increased in first three years. But the ratios decreased in FY 2963/064 and 2064/065 to 0.91 and 0.90. The ratios are 0.40, 0.92, 1.10, 0.91 and 0.90 in FY 2060/061 to 2064/065 respectively. The average ratio for HBL is 0.85, which is lower than all years ratios expect in FY 2060/061.

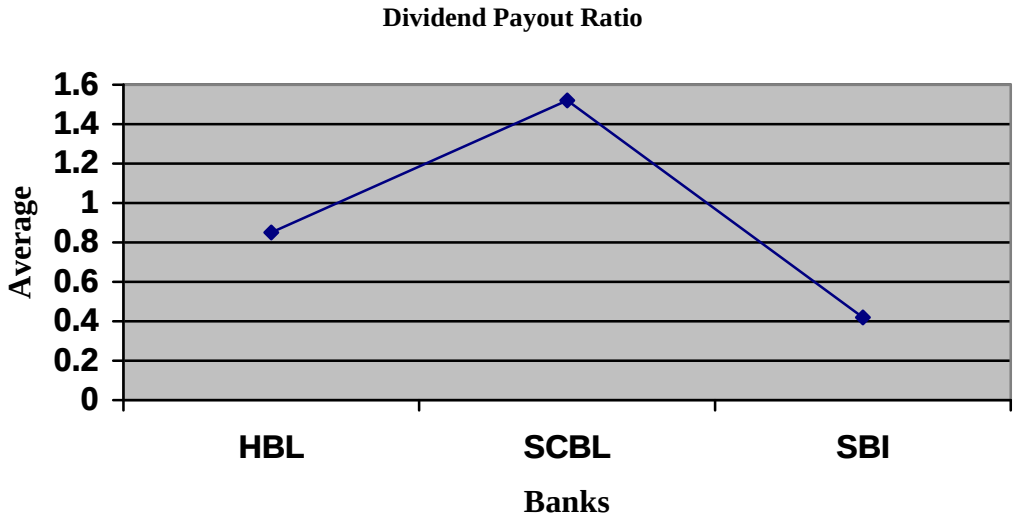
The DPR of SCBL is 1.53 in FY 2060/061, but the ratio is increased in FY 2061/062 to 1.68. But the ratio is decreased in FY 2062/063 and FY 2063/064 to 1.54 and 1.25 in both years. The ratio again increased in FY 2064/065 to 1.59. The ratio is fluctuating for SCBL, which are 1.53, 1.68, 1.54, 1.25 and 1.59 in FY 2060/061 to 2064/065 respectively. The average ratio for SCBL is 1.52, which is lower than all year's ratios except FY 2063/064.

The DPR of SBI Bank is no DPR in FY 3060/061 and 2061/062 and 2064/065 because the bank could not distribute dividend in these years. But the ratio are increasing, the ratios are 0.55 and 1.53 in FY 2062/063 and 2063/064 respectively. The average ratio for SBI Bank is 0.42.

On the basis of S.D. the variability of DPR is higher in SBI Bank that other bank that is 0.67 and the SCBL is lower than other bank that is 0.16. The S.D. is 0.26, 0.16 and 0.67 for HBL, SCBL and SBI respectively.

The highest C.V. is 158.75 for SBI bank and the lowest is 10.60 for SCBL. The C.V. ranges between 10.60 to 158.75, and the C.V. is 30.59, 10.60 and 158.75 for HBL, SCBL and SBI Bank,

Figure 4.8.3



4.10 Analysis of capital structure

The analysis of capacity structure is a concept of vital importance for this study. Here, both NI and NOI approach are considered to analysis the capital structure of the overall capitalization.

4.10.1 Net income (NI) Approach

According to the NI approach, net income is capitalized at an overall capitalization rate to obtain the total market value of the firm. Under this approach, the capital structure decision is relevant to the valuation of the firm, if leverage is increased, the weight

average cost of capital will be decreased and due to this reason, the value of the firm will be increased.

Overall capitalization means the cost of overall capital collected by the company from different sources. In this study, K_o is calculated as per the NI approach, which means K_o is calculating EBIT dividing by value of the firm. Such formula for calculating K_o is as follows:

$$K_o \text{ X} \frac{EBIT}{V}$$

The overall capitalization rate of selected banks under NI approach is shown in

Table 4.9.1

Overall capitalization Rate (K_o) under NI approach

(Ratio in %)

FY	HBL	SCBL	SBI
2060/061	3.26	3.66	4.00
2061/062	3.37	3.62	3.46
2062/063	3.10	3.24	3.35
2063/064	3.22	2.79	3.89
2064/065	3.30	2.27	2.89
Average	**3.25**	**3.12**	**3.52**

Source: Appendix I, II, & III

Over viewing the above calculated over capitalization, rate, SBI bank has on average i.e. 3.52% and HBL and SCBL have lowest rate on average i.e. 3.25 and 3.12.

HBL has 3.25% on an average of overall capitalization rate. The over capitalization rate trend was fluctuating trend over the five fiscal years. The ratios are

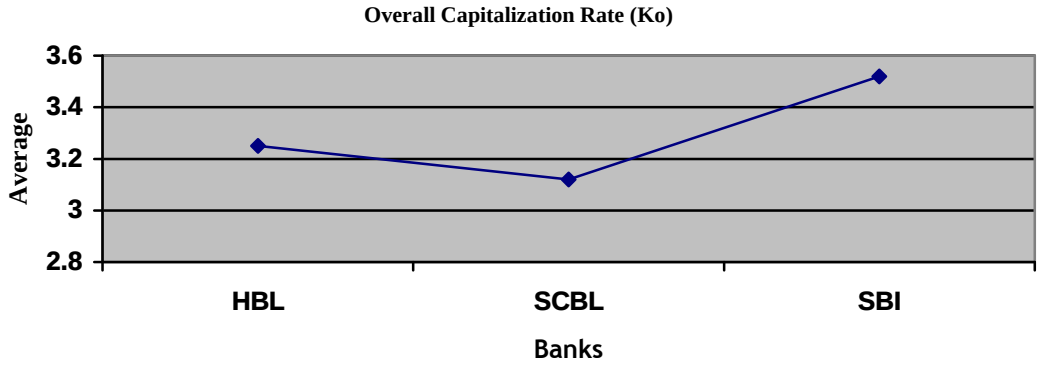
3.26%, 3.37%, 3.10%, 3.25% & 3.30% for FY 2060/61 to FY 2064/65 respectively. Thus, the decreasing trend of HBL's overall capitalization rate indicates that HBL was able to increase the value of the bank and lower the overall capitalization rate by increasing debt proportion in the capital structure. The rate is decreased in FY 2062/63 but the ratio is increase in FY 2060/61 FY 2061/62, 2063/64, 2064/65.

The average overall capitalization rate of SCBL is 3.12%, which is the lowest among the selected banks. The maximum overall capitalization rate is in FY 2060/61 i.e. 3.66%, the ratio decrease trend, the ratio in FY 2061/62 to 3.62% due to increase in market value of the firm and decrease in EBIT. The ratios are 3.66%, 3.62%, 3.24%, 2.79% and 2.27% in FY 2060/61 to 2064/65 respectively.

SBI bank has 3.52 on an average of overall capitalization rate. The overall capitalization rates trend was fluctuating trend over the five fiscal years. The rates for five fiscal years 4.00%, 3.46%, 3.35%,m 3.89%, and 2.89% for 2060/61 to 2064/65 respectively. It has maximum overall capitalization rate 4.00% in FY 2060/61.

Figure

4.9.1



4.10.2 Net operating income (NOI) Approach

The net operating income approach also known as the irrelevancy theory of capital structure implies that the market value of the firm is not affected by the capital structure changes.

The NOI approach is considered to find out analyses the equity capitalization rate of SCBL, HBL, and SBI bank. Thus, table 4.9.2 has been constructed demonstrated the effect of equity capitalization rate under NOI approach.

Table 4.9.2

Equity Capitalization Rate (K_e) under NOI Approach

(Ratio In %)

FY	HBL	SCBL	SBI
2060/061	9.34	11.83	8.36
2061/062	8.83	9.05	8.65
2062/063	7.92	6.60	5.10
2063/064	5.09	4.13	4.98
2064/065	4.73	2.81	2.90
Average	**7.18**	**6.76**	**6.00**

Source: Appendix I, II & III

The equity capitalization rate of HBL ranges between 9.34 % and 4.73%, HBL has decreases trend of equity capitalization rate over the study period. The ratios are 9.34%, 8.83%, 7.92%, 4.09 and 4.73% in FY 2060/61 to 2064/65 respectively. The average ratio of HBL is 7.18%.

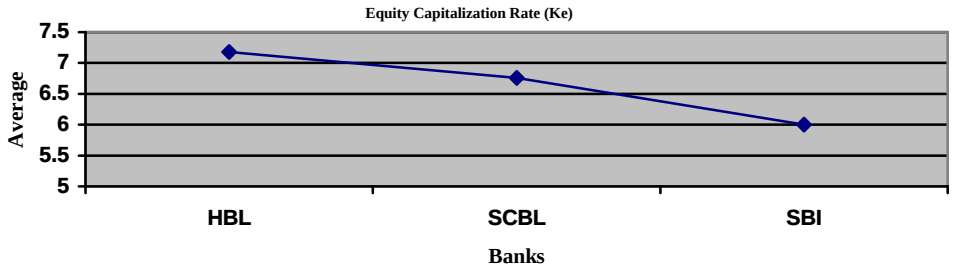
The equity capitalization rate of SCBL has also deceasing trend of equity capitalization rate over the study period, having on an average rate of SBL 6.76%. The ratios are 11.83%, 9.05%, 4.13% and 2.81% in FY 2060/61 to 2064/65 respectively.

Over the viewing above computed equity capitalization rate of SBI bank, equity cost of capital five fiscal years was fluctuating in nature. The average ratio of SBI bank is 6%,

which is lower than all banks over the study period. The ratios are 8.36%, 8.65%, 5.10%, 4.98% and 2.90% in FY 2060/61 to 2064/65 respectively.

Over viewing the above computed equity capitalization rate, the HBL is higher than other banks and SBI is lower than other all banks, which is 7.18% and 6% respectively.

Figure 4.9.2



4.11 Statistical Analysis

The statistical analysis includes various methods of measuring relationship between two or more variables as well as their significance. In this study, different relationship have been calculated with the help of Karl Person's formula of correlation co-efficient and calculating PE for measuring significant correlation.

4.11.1 Coefficient of Correlation between EBIT and Interest Payment.

The relationship between EBIT and Interest payment is evaluated in order to measure debt-servicing capacity of the banks. It is assumed that there is significant relationship between EBIT (Y) is independent variable. The following result is obtained for three selected joint venture banks.

Table 4.10.1
Correlation Coefficient between EBIT and Interest Payment

Banks	r	P.E	6P.E	Significance/Insignificance
HBL	1.025	-0.015	-0.0921	Insignificance
SCBL	0.53	0.22	1.32	Significance
SBI	0.98	0.12	0.072	Significance

Source: Appendix IV, V and VI

The calculation of correlation between EBIT and interest payment is 1.025, shows the positive correlation for HBL. The correlation is insignificance due to the value "r'' which is more than six time the value of PE, which is 1.025. The same time SCBL has positive correlation. The correlation is significance due to the value ''r'' which is more than six times the value of PE, which is 0.53. In this case of SBI Bank the correlation coefficient is significance due to the value ''r'' which is more than six time the value of PE, which is 0.98.

4.11.2 Coefficient of Correlation between Overall Cost of Capitalization (Ko) and D/E Ratio

The relation between Overall Cost of Capitalization (K_o) and D/E ratio is evaluated that there is significant relationship between D/E ratio (Y) is independent variable. The following result is obtained for three selected joint venture banks.

Table 4.10.2

Coefficient of Correlation between Overall Cost of Capitalization (K_o) and D/E Ratio

Banks	r	P.E	6P.E	Significance/Insignificance
HBL	0.086	0.30	1.8	Significance
SCBL	0.58	0.20	1.20	Insignificance
SBI	-0.044	0.67	4.04	Significance

Source: Appendix VII, VIII and IX

The calculation of correlation coefficient between Overall Cost of Capitalization (K_o) and D/E Ratio is 0.086, shows the positive correlation for HBL. But the correlation is significant due to the value ''r'' which less than the value of PE, which is0.086. At the same time SCBL has the positive correlation. The correlation is insignificant due to the value ''r'' which is higher than the value of PE, which is 0.58. In this case of SBI Bank

has the negative relation and the correlation coefficient is significant due to the value ‘’r’’ which is less than the value of PE, which is -0.044.

4.12 Major Finding of the Study

From the presentation and analysis of the data, the following findings are down out.

- Financial leverage shows that the Standard Chartered Bank has the most stable trend among three banks over the study period. It has 94.17% on an average of debt capital. Himalayan Bank has the average ratio of 93.36%. SBI Bank has the lowest average ratio i.e. 92.36% the ratio of three JVBs is in slightly fluctuating trend. The Standard deviation of HBL is 0.65, which is lowest than other two banks and SCBL has highest standard deviation which is 2.92. The highest C.V. is 3.10 for SCBL and the lowest is 0.69 for SBI Bank.
- The debt equity ratio of HBL has ranged between 13.40 to 17.74 times. The average D/E ratio of HBL is 15.70 times, which is highest ratio of all selected banks. SCBL ratio in average is 13.40 times. SBI Bank has D/E times on an average, which is lowest than all selected banks. The ratio of JVBs is in fluctuating trend. The highest C.V.is 11.27 for HBL and lowest is 8.87 for DCBL. The standard deviation of HBL is 1.77, which is highest than other two banks and SCBL has lowest standard deviation, which is 1.19.
- The interest coverage ratio of HBL on an average was 1.98 times. SBI Bank has lowest interest coverage in an average, i.e.1.65 times. SCBL has 3.80 times, which is highest interest coverage ratio. Standard deviation of HBL is 0.10, which is lowest than other two banks and SCBL has highest standard

deviation, which is 0.31, the highest CV. is 13.33 for SBI Bank and the lowest is 5.05 for HBL.

- The HBL has fluctuating trend of degree of financial leverage over the study period. The average DFL for HBL is 0.27, which is lowest than other banks. The SCBL has the highest ratio of 7.51 times DFL on an average. The average DFL for SBI Bank is -01.08 times. The highest c.v is 321.29 for SBI Bank and the lowest is 115.72 for SCBL.
- Return on total assets of HBL is 1.39 on an average. The average ratio of SBL is 2.44, which is higher than other two banks. The average ratio of SBI Bank 1.09, which is lower than other selected banks. The standard deviation for SCBL has lowest ratio which is 0.11 and the SBI bank ha higher ratio, which is 0.53. The highest C.V. is 48.62 for SBI Bank and lowest C.V. is 4.51 for SCBL
- The average ratio of return on total deposit is 1.56 for HBL. The average ratio of SCBL is higher than other banks and the average ratio is 2.75 for SCBL the average ratio of return on total deposit is 1.36, which is lower than other banks. The standard deviation for SBI Bank has higher ratio, which is 0.65 and SCBL has the lower ratio, which is 0.12. The highest C.V. is 46.62 for SBI Bank and lower is 4.46 for SCBL.
- The ratio of net profit to shareholders equity for HBL is 22.80% on an average. SCBL has the average ratio is 34.54, which is higher than other banks. SBI Bank has the average ratio is 13.96%, which is lower than other banks. Standard deviation of SBI Bank has the higher ratio of return, which

is 5.77 and SCBL has lower of return, which is 2.11, the highest C.V is 41.34 for SBI Bank and the lowest is 6.10 for SCBL.

- The cost of overall capital for HBL has 3.25 on as average of overall capitalization rate. SCBL's overall capitalization rate is 3.12 in average rate, which is lower than other banks and SBI Bank has the average ratio is 3.52, which is higher than other banks.
- The equity capitalization rate of HBL on an average is 7.18%, which is higher than other banks. On an average SBI Bank has 6%, which is lower than other banks. The SCBL has the average ratio is 6.76%.

Chapter 5

Summary, Conclusion & Recommendations

5.1 Summary

This concluding chapter deals with the findings in a logical and rational manner to the problems of research within the frame work stated in introduction chapter. The relevance of the related rations to the capital structure and their contribution to analysis are described in this chapter. Similarly, this chapter is also related with the findings and conclusions deride from the stud of the selected joint venture banks in Nepal. This chapter is composition of three sections firstly, the summary of the study; secondly, conclusion of the e study; and lastly, some practical recommendations are suggested to help to solve the problems observed on the basis of findings,

Basically, the entire research work has focused on the comparative study on Capital Structure of Joint Venture Banks. For the study, three Joint Venture Banks are selected i.e. Himalayan Bank Limited, Standard Chartered Bank ltd, Nepal State Bank of India Bank Ltd, are taken as sample and analyzed their capital structure.

Five fiscal years secondary data, i.e. from the year 2060/61 to 2064/65 are taken for the study. The general objective of this study is to analyze the Capital Structure of Selected Joint Venture Banks. To meet the general objective, the other specific objective is formulated as follows.

- To analyze the relationship of the capital structure and cost of capital of selected Joint Venture Banks.
- To analyze the comparative capital structure of selected JVBs in terms of financial and statistical tools.

- To analyze the profitability position of banks.
- To provide suggestions and recommendations on the basis of analysis to improve the financial weakness of JVMs.

The first chapter consists of framework of the study as well as profile of selected joint venture banks. Similarly, second chapter is a review of the issues related with abstracts of capital structure. The possible valid uses of ratios and mechanics-financial and statistical tools and techniques are briefly reviewed in chapter three research methodologies. Lastly, fourth chapter consists of analytical framework of data and findings that is considered as the important part revealing the performance of selected banks.

5.2 Conclusions

It's a renowned fact, whether we like it or not, the globalization of joint venture banks is a reality. The growth and increasing integration of the world economy has been paralleled buy expansion of global banking activities. Nepal, though a developing country, couldn't deny the fact that JVBs has luring potentiality, which is responded by extending loans and developing new, highly innovative financial techniques that laid the foundation for totally new approaches to financial techniques that laid the foundation for totally new approaches to the provision of banking services. On the basis of entire study, some conclusion has been deduced.

This study particularly deals with conclusion about "capital structure Analysis of joint venture Banks of Nepal." The analysis of capital structure is very significant in project appraisal of the stiff competition. Thus, this study is mainly an effort to confer general account of joint venture banks in terms of ratios related wit capital structure on the basis of financial statement.

Many joint venture bands are operating in Nepal as commercial and merchant banks. The growth is still going on as so many new banks are coming into existence after this study. So JVBS are operating with higher technology and new efficient methods in banki9ng sector.

But this study has been undertaken only three JVBs viz. HBL, SCBL, and SBI to examine and evaluate the financial data. Besides, latest financial statements of five fiscal years from 2060/61to 2064/065 have been conferred for the purpose of the study. This has been mainly conducted on the basis of secondary data that are processed and analyzed.

All JVBs has used high percentage to total debt in raising the assets. The higher ratio the higher ratio constitutes that the outsider's claim in total assets of the banks is higher than owner's claim. The financial risk of the banks SCBL average degree of financial leverage constitutes 6.49 times which indicates the higher degree of financial risk. Though the banks are highly leverage, SCBL seems to be more leveraged banks in comparison with selected banks. On an average SCBL constitutes 13.41 times of D/E ratio, which should be reduced as quick their D/E ratio carefully.

The Average ROE of JVBs i.e. HBL, SCBL and SBI Bank are 22.80%, 34.54% and 13.96% respectively. The ROE ratio has great impact to show the relative performance and strength of the bank in attractive further investment. SCBL's earning of 34.59% infers that the bank has been able to utilize the shareholder's equity in efficient way.

The Roe ratio of HBL and SBI Bank shows they have satisfactory return of earning that is most desirable objectives of a business. The ratio of ROE reflects the

extent to this objective has been accomplished. Likewise, SBI has 13.96% earning on shareholders equity, which is in comparison with other banks slightly low rate of return.

ICR shows that the all banks are able in paying interest. In comparison SCBL is operating efficiently in terms of ICR. HBL and SBI Bank should make effort to retire excessive debt to have comfortable coverage ratio.

Earnings per share of all selected banks fluctuating trend, the SCBL has the higher EPS so investors are attracted to buy the share. Hence, the banks are suggested to collect the funds thought issuing shares.

The NI approach implies that proportion of higher leverage consequently increases the value of the banks. This approaches is well acquainted with this study is the value of the banks has increased in accordance to the increasing portion of leverage. The Ko of three banks is positive even though the rate of return has fluctuating trend the figures show that most of these banks have been cautious about loans and advances. The operating profits of all provide sector commercial banks have gone up, so has the provision for loan loss. IN short the banking sector in Nepal is somehow doing well even though it has to face a number of hurdles during the past few years.

5.3 Recommendation

In conclusion derive from finding of the study JVBs have a lack of theoretical and practical knowledge with regard to capital structure theories. Nepalese investors are not attracted by the theories. JVBs in Nepal have concerned their business with big businessman and industrialist their clients are mostly big manufacture carpet and garment exporters, multinational companies, large scale industries, NGO as well as INGO, travel

agencies, cargo agencies, etc. therefore, the JVBs is suggested to open their doors to the small depositors and entrepreneurs.

The capital structure of all the selected banks is highly leveraged. The proportion of debt and equity capital decided keeping in mind the efforts of tax advantages and financial distress. The banks, when it is difficult to pay interest and principle, ultimately lead to liquidation or bankruptcy. For such, the banks should reduce the high uses of debt capital.

Return ratios like, return on total assets, return on total deposits and return on shareholder's equity are slightly satisfactory in the selected banks.

Having geared up capital structure position and insufficient returns indicates the week aspects of the banks. All the selected banks are suggested to use the resource into most profitable sector and be more concerned to get better return and be careful about their financial condition so that their returns would not be depressed anymore.

Additionally banks are required and recommended to expand assets and branches, which ultimately affect the bank capital structure and expected to increase the profitability more than the present. All the banks very in case of total assets, number of bank branches and their volume of transaction.

The saving from rural communities is neglected by JVBs, without which they can't contribute most to the economic development of the country. So, JVBs recommended being corporative and should expand branches by covering all the five development regions of the including rural areas to achieve geographically balanced approaches. The study recommends that the savings that are out of the banks domain especially in the rural areas could be capture by reaching them through expansion of

branches and by providing quality of service. The competition from the informal sector and other financial institutions can then be handled. This will ultimately benefit the country as well as banks themselves.

It is visible that JVBs are granting significant role in the modern banking system to uplift the economical development of the nation but they are not playing merchant banking role. Hence JVBs are suggested to play the role of financial intermediately merchant banking like underwriting of securities, broker's development of capital market and supportive role to security exchange center which will consequently be helpful for the upliftment of nation.

Similarly, JVBs are basically not concentrated to mobilize their deposit funds in productive areas. So, there are proposed to come forward to match government obligation by financing the priority sector development programs,

Nepalese shareholders are very much concerned about the payment of cash dividend by the joint venture banks rather than their financial statement. As such, banks are suggested to pay cash dividend consistently. Especially SBI is weak in paying cash dividend.

Dividend payout ratio should be determined considering the shareholder's expectation and the growth requirements of the banks. A higher payout attracts both the existing and potential investors leading to increase in market price of the share, which consequently leads to the strengthened financing capability.

The banks should give continuity in providing both conceptual and practical training to the staff to enhance their knowledge, skill and competency level, there should remain consistently vigilant in enhancing their more and motivation. The bank has to

enhance effectiveness, efficiency and proper coordination of its departmental tasks by continuously reviewing its structural design in accordance with the need of the changing time and situation.

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Appendix I
Himalayan Bank Ltd.

Rs. in million

Years	**Total Debt**	**Total assets**	**Shareholders equity**	**EBIT**	**EPS**	**Interest charge**	**NPAT**	**No of share**	**Value of firm**	**EBT**	**Market value of share**	**dividend**	**Total deposit**
2060/061	23493.23	24817.4	1324.17	912.12	49.05	491.54	263.05	5362500	27997.73	420.58	4504.5	107.25	22010.33
2061/062	26302.94	27844.69	1541.75	1084.5	47.91	561.96	308.28	6435000	32223.14	522.54	5920.2	277.73	24814.01
2062/063	27694.21	29460.39	1766.18	1321.22	*59.24*	648.84	457.46	7722000	36188.41	672.38	8494.2	501.93	26490.09
2063/064	31372.64	33519.14	2146.5	1464.81	60.69	747.41	491.82	8108100	45481.54	717.4	14108.9	445.94	30048.42
2064/065	33662.4	36175.53	2512.99	1772.69	62.74	832.74	635.87	10135125	53729.95	948.84	20067.55	709.46	31842.79

Appendix II
Standard Chartered Bank Ltd.

Rs. in million

Years	Total Debt	Total assets	Shareholders equity	EBIT	EPS	Interest charge	NPAT	No of share	Value of firm	EBT	Market value of share	dividend	Total deposit
2060/061	22146.32	23642.06	1495.74	1049.4	143.55	275.81	537.8	3746404	28683.79	773.59	6537.47	824.26	21161.44
2061/062	20199.26	21781.68	1582.42	1049.31	143.14	254.13	536.24	3746404	28984.58	795.18	8785.32	899.14	19363.47
2062/063	24013.21	25767.35	1754.13	1236.46	*175.84*	*303.2*	658.76	3746404	38155.89	933.26	14142.68	1011.53	23061.03
2063/064	26480.34	28596.69	2116.35	1420.15	167.37	413.06	691.67	4132548	50862.37	1007.09	24382.03	867.84	24647.02
2064/065	30843.24	33335.79	2492.55	1665.1	131.92	471.73	818.92	6207840	73242.79	1193.37	42399.55	1303.65	298744.00

Appendix III
Nepal SBI Bank Ltd.

Rs. In million

Years	Total Debt	Total assets	Shareholders equity	EBIT	EPS	Interest charge	NPAT	No of share	Value of firm	EBT	Market value of share	dividend	Total deposit
2060/061	7813.77	8440.41	626.64	365.45	14.26	255.92	60.85	4268759	9124.28	109.53	1310.51	0.00	7966.64
2061/062	9656.36	10345.37	689.01	383.62	13.29	258.43	57.39	4318656	1103.11	125.19	1446.75	0.00	6456.53
2062/063	12053.47	13035.84	982.37	534.53	*18.27*	334.77	117.00	6402361	15971.71	199.76	3918.24	64.02	10653.40
2063/064	12737.91	13901.2	1163.29	791.27	39.35	412.22	254.91	6477984	20356.02	379.05	7618.11	389.85	11445.29
2064/065	15772.80	17187.45	1414.64	837.76	28.33	454.92	247.77	8745278	28986.92	382.84	13214.12	0.00	13715.39

Appendix IV

Coefficient of correlation between EBIT (X) and interest payment (Y) for HBL

FY	x	y	dx= x-A	dy= y-A	$(dx)^2$	$(dy)^2$	dx.dy
2060/061	9.12	4.91	-4.09	-1.58	16.7281	2.4964	6.4622
2061/062	10.84	5.62	-2.37	-0.87	5.6169	0.7569	2.6619
2062/063	13.21	6.49	0	0	0	0	0
2063/064	14.64	7.47	1.43	0.98	2.0449	0.9604	1.4014
2064/065	17.72	8.33	4.51	1.84	20.0340	3.3856	8.2984
	65.53	32.82			44.4239	7.5993	18.8239

Correlation co-efficient (r) = $$\frac{\sum dxdy}{\sqrt{\sum (dx)^2}\ \sqrt{\sum (dy)^2}}$$

$$= \frac{18.8239}{\sqrt{44.4239}\ \sqrt{7.5993}}$$

Therefore (r) = 1.025

Calculation of probable error

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

$$= \frac{0.6745\ (1 - 1.025^2)}{\sqrt{5}}$$

= - 0.015

6P.E. = 0.092

Appendix V

Coefficient of correlation between EBIT (X) and interest payment (Y) for SCBL

FY	x	y	dx= x-A	dy= y-A	$(dx)^2$	$(dy)^2$	dx.dy
2060/061	10.49	2.75	-1.87	-0.28	3.4996	0.0784	0.5236
2061/062	10.49	2.54	-1.87	-0.49	3.4996	0.2401	0.9163
2062/063	12.76	3.03	0	0	0	0	0
2063/064	14.20	4.13	1.84	1.10	3.3856	1.210	2.024
2064/065	16.65	4.71	4.29	1.26	18.4041	1.587	5.4054
					28.7835	3.1161	8.8693

Correlation co-efficient (r) = $$\frac{\sum dxdy}{\sqrt{\sum (dx)^2}\ \sqrt{\sum (dy)^2}}$$

$$= \frac{8.8693}{\sqrt{28.7535}\ \sqrt{3.1161}}$$

Therefore (r) = 0.53

Calculation of probable error

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

$$= \frac{0.6745\ (1 - 0.53^2)}{\sqrt{5}}$$

= 0.22

6P.E = 1.32

Appendix VI

Coefficient of correlation between EBIT (X) and interest payment (Y) for SBI

FY	x	y	dx= x-A	dy= y-A	$(dx)^2$	$(dy)^2$	dx.dy
2060/061	3.65	2.56	-1.70	-0.79	2.89	06241	1.34
2061/062	3.84	2.58	-1.51	-0.77	2.2801	0.5929	1.1627
2062/063	5.35	3.35	0	0	0	0	0
2063/064	7.91	4.12	2.56	0.77	6.5536	0.5929	1.9712
2064/065	8.38	4.55	3.03	1.20	9.1809	1.44	3.633
					20.9046	3.2499	8.1099

Correlation co-efficient (r) = $$\frac{\sum dxdy}{\sqrt{\sum (dx)^2}\ \sqrt{\sum (dy)^2}}$$

$$= \frac{8.1099}{\sqrt{20.9046}\ \sqrt{3.2499}}$$

Therefore (r) = 0.98

Calculation of probable error

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

$$= \frac{0.6745\ (1 - 0.98^2)}{\sqrt{5}}$$

= 0.012

6P.E = 0.072

Appendix VII

Coefficient of correlation between Overall Capitalization Rate (x) and D/E ratio (y) for HBL

FY	x	y	dx= x-A	dy= y-A	$(dx)^2$	$(dy)^2$	dx.dy
2060/061	3.26	17.74	0.16	2.06	0.0256	4.2436	0.3296
2061/062	3.37	17.06	0.27	1.38	0.0729	1.9044	0.3726
2062/063	3.10	15.68	0	0	0	0	0
2063/064	3.22	14.62	0.12	-1.06	0.0144	1.1236	-0.1272
2064/065	3.30	13.40	0.20	-2.28	0.04	5.1984	0.456
					0.1529	12.47	0.119

Correlation co-efficient (r) = $$\frac{\sum dxdy}{\sqrt{\sum (dx)^2}\ \sqrt{\sum (dy)^2}}$$

$$= \frac{0.119}{\sqrt{0.1529}\ \sqrt{12.47}}$$

Therefore (r) = 0.086

Calculation of probable error

$$P.E. = \frac{0.6745\,(1 - r^2)}{\sqrt{n}}$$

$$= \frac{0.6745\,(1 - 0.086^2)}{\sqrt{5}}$$

= 0.30

6P.E = 1.8

Appendix VIII

Coefficient of correlation between Overall Capitalization Rate(X) and D/E Ratio(Y) for SCBL

FY	x	y	dx= x-A	dy= y-A	$(dx)^2$	$(dy)^2$	dx.dy
2060/061	3.66	14.81	0.42	0.21	0.1764	0.0441	0.0882
2061/062	3.62	12.76	0.38	-1.84	0.1444	3.3856	-0.6912
2062/063	3.24	14.60	0	0	0	0	0
2063/064	2.79	12.51	-0.45	-2.09	0.2025	4.3681	0.9405
2064/065	2.27	12.37	-0.97	-2.23	0.9409	4.9729	2.1631
					1.4642	12.7707	2.4926

Correlation co-efficient (r) $= \dfrac{\sum dxdy}{\sqrt{\sum (dx)^2}\ \sqrt{\sum (dy)^2}}$

$= \dfrac{2.4926}{\sqrt{1.4642}\ \sqrt{12.7707}}$

Therefore (r) = 0.58

Calculation of probable error

P.E. $= \dfrac{0.6745\,(1 - r^2)}{\sqrt{n}}$

$= \dfrac{0.6745\,(1 - 0.58^2)}{\sqrt{5}}$

= 0.20

6P.E = 1.20

Appendix IX

Coefficient of correlation between Overall Capitalization Rate(X) and D/E Ratio(Y) for SCBL

FY	x	y	dx= x-A	dy= y-A	$(dx)^2$	$(dy)^2$	dx.dy
2060/061	4.00	12.47	0.65	0.20	0.4225	0.4	0.13
2061/062	3.46	14.1	0.11	1.47	0.0121	3.0276	0.1914
2062/063	3.35	12.27	0	0	0	0	0
2063/064	3.89	10.95	0.54	-1.32	0.2916	1.7424	-0.940896
2064/065	2.89	11.15	-0.46	-1.12	0.2116	1.2544	0.5152
					0.9378	6.0644	-0.104296

Correlation co-efficient $(r) = \dfrac{\sum dxdy}{\sqrt{\sum (dx)^2}\ \sqrt{\sum (dy)^2}}$

$= \dfrac{-0.104296}{\sqrt{0.9378}\ \sqrt{6.0644}}$

Therefore $(r) = -0.044$

Calculation of probable error

$P.E. = \dfrac{0.6745\,(1 - r^2)}{\sqrt{n}}$

$= \dfrac{0.6745\,(1 - (-0.044)^2)}{\sqrt{5}}$

$= 0.67$

$6P.E = 4.$