A STUDY ON CAPITAL STRUCTURE MANAGEMENT OF COMMERCIAL BANKS IN NEPAL

(With special reference to EBL, HBL, NSBI Bank and NIB)

A Thesis

Submitted by:

Anjan Raj Regmi

Nepal Commerce Campus

Roll No. 331/065

Exam Roll No. 251618/067

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Phone: 4107040, 4107044
4107045, 4107048
P.O. Box No.: 2465
E-mail:info@ncc.edu.np

TRIBHUVAN UNIVERSITY

Faculty of Management

NEPAL COMMERCE CAMPUS

NEW BANESHWOR, KATHMANDU, Nepal

Ref.

RECOMMENDATION

This is to certify that the thesis:

Submitted By

Anjan Raj Regmi

Entitled

A STUDY ON CAPITAL STRUCTURE MANAGEMENT OF COMMERCIAL BANKS IN NEPAL

(With special reference to EBL, NIBL, NSBI & HBL**)**

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

.....	.....	.....
(Mr. Nischal Risal)	*Prof. Dr. Sushil Bhakta Mathema)*	*(Mrs. Jyoti Pandey)*
Thesis Supervisor	**Head of the Research Department & Thesis Supervisor**	**Campus Chief**

Date: ……

Phone: 4107040, 4107044
4107045, 4107048
P.O. Box No.: 2465
E-mail:info@ncc.edu.np

TRIBHUVAN UNIVERSITY

Faculty of Management

NEPAL COMMERCE CAMPUS

NEW BANESHWOR, KATHMANDU, Nepal

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VIVA-VOCE SHEET

We have conducted the viva-voce examination of the thesis presented by

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and found the thesis to be the original work of the student written according to the prescribed format. We recommend the thesis to be accepted as partial fulfillment of the requirements for Master of Business Studies **(**M.B.S.**)**

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Chairperson, Research Committee: ……

Thesis Supervisor: ……

External Expert: ……

(*Member***)**

Date: ……

DECLARATION

I hereby declare that the work reported in this thesis entitled “A STUDY ON CAPITAL STRUCTURE MANAGEMENT OF COMMERCIAL BANKS IN NEPAL" (With special reference to EBL, NIBL, NSBI & HBL) submitted to Nepal Commerce Campus, Kathmandu is my original work done in the form of partial fulfillment of the requirements for the Master of Business Studies (M.B.S.) under the supervision and guidance of Mr. Nischal Risal, Nepal Commerce Campus, Kathmandu.

…….....

(Anjan Raj Regmi)

Researcher

Nepal Commerce Campus,

Kathmandu, Nepal

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…….....

(Anjan Raj Regmi)

Researcher

Date: ……

Nepal Commerce Campus,

Kathmandu, Nepal

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ABBREVIATIONS

%	Percentage
&	And
A.D	Anno Domini
A/c	Account
BOK	Bank of Kathmandu Ltd
B.S	Bikram Sambat
B/S	Balance Sheet
CV	Coefficient of variation
DFL	Degree of financial leverage
DPS	Dividend Per Share
EBIT	Earning before interest & tax
EBT	Earning Before Tax
EPS	Earning Per Share
FY	Fiscal Year
HBL	Himalayan Bank Limited
LBC	Lord Buddha College
MBS	Master of Business Studies
M-M	Modigliani and Miller
NIBL	Nepal Investment Bank Limited
NOI	Net Operating Income Approach
NSBI	Nepal State Bank of India
P/E	Price Earning
ROA	Return on Assets
ROE	Return on Equity
ROSE	Return on Shareholder's Equity
SD	Standard Deviation
WACC	Weighted average cost of cost

CHAPTER-I
INTRODUCTION

1.1 Background of the study

Nepal is one of the countries in the world in terms of rich and unique in natural resources and attributes like it's bio-diversity, socio-cultural, cultural heritage, manifested in its architecture, temples, sculptures, monuments etc. Besides from this, it is also abundantly gifted with natural resources like mountains, green forests, many perennial rivers and source of minerals. The pace of the development in Nepal is slow resultant of various factors like illiteracy, lack of finance, landlocked position, poor resources mobilization and its utilization, weak infrastructure development, institutional weaknesses, poor economic policy and unstable eco-political environment. For this to overcome, the process of capital accumulation among other perquisites should be enhanced. The economic development of nation is on initial stage. Nepal has adopted mixed and liberal economic policy with the implicit objective to help both the state and private sector. For the economic growth and development, government has now initiated various economic policies such as industrial policy, foreign investment policy, privatization policy and trade and transit policy.

Industry is very crucial factor for economic progress and plays the role of the lubricant for economic prosperity of the country. The industrial development is not old as the process started with the establishment of Biratnagar Jute Mill and Industrial Council in 1936 A.D. There after industrial growth accelerated with establishment of the Morang Cotton Mill in 1941, the Morang sugar mill in 1946, the Ragupati jute mill 1946 etc. The industrial growth took high speed before the Second World War. The year 1956 is said to be "Golden Year". Various writers have defined the word "Bank" is different ways. "A commercial bank is dealer in money and in substitutes for money, such as cheque or bill of exchange. It also provides a variety of financial service". Commercial bank as a financial institution transfers monetary sources from savers to users. Finance is needed to perform a firm's production marketing and other

function. Commercial banks are to lend money to merchant, house owners, farmer's industrialist and to hold government bonds. Commercial bank can mainly undertake measures such as organizational reforms of banks, maximum utilization of resources and increase in non-cash reserve transactions to reduce the spread between interest rate on deposit and credit.

They deploy funds raised from different resources in to different assets with primary objectives of profit generation. They also pay an important role for economic development and poverty alleviation of the country through providing credit facilities, quality banking service to a people both business community as well as common man. Today there are altogether 30 banks operating in the country and most of them are joint venture banks. Capital structure is the composition of the debt and equity securities and is considered as financial decision undertaken by the financial manager. The financial manager must strive to obtain the best financing mix or optimum capital structure for his firm. The firm attains capital structure where the debt-equity proportion maximizes the market value of the shares. The uses of debt affect the return and risk of the equity shareholder; it increases the return on equity fund and at the same time it also increases risk. A proper balance must be strike between the risk and return in order to maximize the market value of shares (Pandey, 1995).

Since the path breaking seminal paper by Modigliani and Miller (1958), the issue of capital structure has generated great interests in finance literature. It has provided a substantial boost in the development of the theoretical framework within which various capital structure theories have been developed. Based on very restrictive assumptions of perfect capital markets, homogenous expectations, no taxes and no transaction costs, Modigliani and Miller concluded that financial leverage does not affect the firm’s market value. In short, capital structure is irrelevant to the value of firm, or value of levered firm and value of unlevered firm will be equal if they are identical in every respect except capital structure.

The study of capital structure attempts to explain the mix of securities and financing sources used by corporations to finance real investment (Myers, 2001). In general, a firm can choose among many alternative capital structures. It can issue either equity or debt capital or a large amount of debt capital and little amount of

equity capital and vice versa. It can arrange lease financing, use warrants, issue convertible bonds and other hybrid securities. The firm can issue dozens of distinct securities in different combinations; however, the rational attempt is to find the particular combination, which maximizes overall market value of the firm.

In respect to set an optimal capital structure, the practices of firms are different. There are so many firm specific and external variables, which affect capital structure management. One of the most perplexing issue facing financial managers is the relationship between capital structure and the stock prices. That is why there are various theories of capital structure that try to explain this cross-sectional variation.

The presence of favorable tax treatment of interest payments and bankruptcy costs associated with increasing debt lead to the notion of an ‘optimal’ capital structure which maximizes the value of the firm and respectively minimizes its average cost of capital. Using debt capital provides tax shield on interest payment or interest is tax-deductible expenses. Therefore, relaxing their earlier assumption of ‘world without tax’ Modigliani and Miller (1963) proposed that firms should use as much debt capital as possible in order to maximize their value. Increasing debt in one hand increases the debt-tax shield but by the same time bankruptcy cost also increases. It is the optimal level where the debt-tax shield trade offs the bankruptcy cost and maximizes the value of the firm. Therefore the tax has been thoroughly investigated as a factor that determines the capital structure.

Besides the tax and bankruptcy cost aspects of capital structure management, there are also some other approaches that attempt to contribute to the explanation of the capital structure determination. These approaches examine the debt level determination from the perspective of asymmetric information. Myers and Majluf (1984) assumed that managers do act in favor of the interest of existing shareholders. As a consequence, they refuse to issue undervalued shares unless the value transfer from ‘old’ to new shareholders is more than offset by the net present value of the growth opportunity. This leads to the conclusion that new shares will only be issued at a higher price than that imposed by the real market value of the firm. Therefore, an announcement of new equity issue is directly interpreted as bad news, in the sense that current investors possess overvalued shares. Indeed, the prediction that an

announcement of a stock issue will immediately drive the firm's market price drown was confirmed by several studies (Asquith and Mullins, 1986; Masulis and Korwar, 1986). Furthermore, debt holders face less risk in the case of potential misevaluation of the firm, because debt has the prior claim on assets and earnings, whereas equity is the residual claim. This means that announcements of debt issues should have a smaller downward impact on stock price than announcements of equity financing. Thus, if a firm is able to issue debt, then any attempt to sell shares will reveal that the shares are overvalued. Summing up, their 'pecking order' theory suggests that firms will initially rely on internally generated funds, that is, undistributed earnings, where there is no existence of information asymmetry, and then they will turn to debt if additional funds are needed and finally they will issue equity to cover any remaining capital requirements. Thus, according to the pecking order theory, firms that are profitable and therefore generate high earnings are expected to use less debt capital than those that do not generate high earnings. Several researchers have tested the effects of profitability on firm leverage. Friend and Lang (1988) find a significantly negative relation between profitability and debt/asset ratios. Rajan and Zingales (1995) compare the profitability-leverage relation for various countries. They find a significantly negative correlation between profitability and debt/asset ratios for Japan, the United States and the United Kingdom.

In this way, the pecking order hypothesis states that there is no well-defined target debt ratio. Firms are said to prefer retained earnings as their main source of funds from investment. Next in order of preference is less risky debt, and last comes risky external equity financing. It is so because the existence of the asymmetric information problem between insider and outsider investors. Debt ratios change when there is an imbalance of internal cash flow, net of dividends, and real investment opportunities while the factors considered in the tradeoff model are regarded as the second-order. In other words, the pecking order theory is based on the assumptions that managers are better informed about the firm's investment opportunities than outsiders, and that corporate manager's act in the best interest of existing shareholders. Myers and Majluf (1984) show that, under these assumptions, firms will sometimes forego positive-net present value projects if accepting them requires

issuing new equity at a price that does not reflect the true value of the firm's investment opportunities. This helps explain why firms value financial slack (for example, cash and marketable securities) and unused debt capacity.

These theories examine the determinants of capital structure from different aspects and conclude in different outcomes as far as the choice of the determination of the level of financial leverage is concerned. In the meanwhile, empirical evidence has sometimes proven to be inconsistent to a particular theory that they examine. The most striking example is that of the empirical testing of the pecking order theory, where various researchers have concluded in different, inconsistent conclusions (Myers, 1984; Harris and Raviv, 1991).

To sum up, there is no universal theory of capital structure yet. Several useful conditional theories exist that attempt to approach the determination of optimal capital structure Researchers have been trying to test and develop different capital structure theories through empirical studies. This study is one more attempt in this direction.

1.2 Commercial banking scenario in Nepal

Commercial bank means a bank which operates currency exchanges transactions, accept deposits, provides loan performs dealing relating to commerce except the banks which have been specified for the cooperative, agriculture, industry or other similar specific objectives. There are 30 commercial banks in Nepal.

1.3 History of bank

When, where and how the modern banking actually came in existence cannot be pointed out. But from the different historical facts it reveals that some banking activities have been carried out since the time immemorial. At that time merchants, money lenders, goldsmiths, etc performed the banking transactions. Later the transactions started increasing and they become the activities of money exchange securing the valuable goods, deposit money, lending money and so on. Banking has a long history. The origin of bank is not a new phenomenon. The terms in banking such as pledges, deposits, rate of interest, loans etc can be found in the ancient Hindu Epic Manu Smriti. Even in 300 B.C. It was in exercise in India, china, Arabia, Greece, Persia and Egypt even though the procedures of banking were not organized. On the span of time, it has been expanding. For all these types of activities written receipts

began to be used and the modern banking started. In the historic age sources say that goldsmiths and money lenders contributed to large extent in the growth of banking system. They used to store peoples gold charging nominal charges issued receipts to the depositors, which was good for payments. Later, they started advancing money changing interest on it. So the goldsmiths and money lenders started performing the functions of modern banking i.e. accepting deposits and advancing loans. However, the modern banking originated in Italy.

The word "bank" was derived from the Italian word "Banco" which means accumulation of money or stock. Bank as a formal institution was originated from Italy. The bank of Venice which was established in 1157A.D. was the first bank in the history of banking and it was established to finance the monarch in the wars. The Bank of Barcelona, Spain which was established in 1404A.D. was the second bank in the World and then The Bank of Genoa was set up in 1407 A.D.

The first central bank through was the bank of England which was established in 1844 A.D. Banking has come to the present advanced from through various stages. Some sorts of banking activities have been carried out since the time immemorial. Traditional forms of banking were traced during the civilization of Greek, Rome and Mesopotamia. With large banking firms established in Florence, Rome, Venice and other Italian cities the banking activities spread throughout the Europe and it slowly spread throughout the world.

1.4 Banking Industry in Nepal

The specific date of beginning of money and banking transaction in Nepal is unknown. The banking functions were carried out in unorganized sectors. It is found that minted coins, copper coins, silver coins, and gold coins were introduced by different kings. It has gone through different stages; during the Prime minister ship of Randip Singh around 1872 AD. "Tajarath Adda" was introduced which brought reforms in economic and financial sector. The main purpose of "Tajarath Adda" was to provide credit facilities to the general public at a confessionals rate. However the installment of "Kausi Toshakhana" as a banking agency during the regime of king Prithvi Narayan Shah could also be regarded as the first step towards banking in Nepal. Institutional development of modern banking in Nepal had begun from early

1990s. with the establishment of Nepal bank Limited in 1994 BS holding 51 % of Government equity, the new era of banking sector had started in Nepal. As a central bank, Nepal Rastra Bank was established in 2013 BS under the provision of Nepal Rastra Bank Act 2012, with the objectives of helping in the development of monetary and financial sector by understanding various functions.

Another step was added when Rastriya Banijya Bank was established in 1966(2022 B.S) under the Banijya Bank Act 1965(2021B.S). Likewise, Agriculture Development Bank was established in 1965(2024 B.S) with the objective of supporting the agriculture sector and increasing the life standard of those people who are involved in agriculture.

The banks opened before the decade of 1980s were by the government. No private sector was permitted to open banks in Nepal. The process of development adopted liberalized economic policies to develop the financial sector. In early 1980s, to meet the needs of healthy competition in the financial system, Nepal allowed the entry of foreign banks as joint ventures with up to maximum of 50 % equity participation. With the arrangement of financial liberalization process of the government, the whole financial industry went through drastic change with credit institutions mushrooming in the country. It has brought crucial change and big milestones in its services during these short spans.

In the liberal financial system, the role of central bank as guardian of financial system comes to be more significance it. The recent experience of south East Asian countries have shown that in the case of weak monitoring and supervision financial crisis is likely to occur immediately. Taking this fact into consideration, it is essential to make financial system health and strong while enhancing the monitoring and supervising capacity of central bank in coming day. Government of Nepal budget for the year (FY 2005) provides the following justification for allowing the setting up of joint venture banks in the following words. "At present the financial institutions of the country have neither been effortful to mobilize resources. On the one hand, the major part of their commercial loan is concentrated among the few individuals where as the small trade entrepreneurs are facing difficulties to receive loan to the other. The only solution to this problem is to encourage competition in the banking sector. Therefore a

policy of allowing new commercial banks under joint venture with foreign collaboration has been adopted. This will promote competition among banks where by the client will get improved facility. In addition, the share of the new banks will also be sold to the general public and in distributing the share. It will be ensured that the ownership is spread out to the maximum intent possible.

As a pre-condition to economic liberalization, the Foreign Investment and Technology Transfer Act, 1981 came into existence. The government allowed private sectors to open banks. Joint venture projects were also allowed. Many joint venture commercial banks and financial institutions were established. As a result, Nepal Arab Limited was established as a first joint venture commercial bank in 1985 under the provision of Commercial Bank Act, 1974 and Company Act 1965. Then Nepal Indosuez Bank Limited was established in 1985 and Nepal Grind lays Bank Limited in 1986. In 2001, the name of Nepal Grindlays Bank Limited has been changed into Standard Chartered Bank Nepal Limited and Nepal Indosuez bank Limited has been changed into Nepal Investment Bank in 2002, which has no foreign share now. Nepal SBI Bank Ltd. Also was formed in joint venture. It was established in 2050(1993). This bank was established with the joint investment The State Bank of India and Nepal. Himalayan bank limited was established in 2049(1992). This bank was established in joint participation of the Habib Bank of Pakistan. Nepal Bangladesh Bank Limited was established in 2051(1994). The bank was formed in joint venture of the international finance investment and commerce Bangladesh. Everest bank was established in 2051(1994) under the commercial Bank act and Company Act 2021(1965). It is joint venture of Punjab National Bank of India and Nepal promoter. Bank of Kathmandu limited was established in 2051(1994) under joint investment of The Siam commercial Bank Thailand. Nepal Credit and Commerce bank of joint investment of Nepal investors and the Srilanka investors but Srilankan investors have sold their shares to NB group of Nepal and it name has been change into Nepal Credit and Commerce Bank Limited. Under the commercial bank act and the company act other banks was established such as Lumbini Bank, NIC Bank, Kumari Banks, Machhapuchare Bank, Laxmi Bank, and Siddhartha Bank Ltd.

After the restoration of multiparty democracy, the newly formed government adopted liberalized policies aimed at accelerating economic growth and considerably reducing state interference in business. The governments encourage foreign and private investment by offering attractive incentives and facilities including 100% foreign ownership in all but few sectors. This help to create conductive business environment for banking. As a result, additional commercial banks came into existence. When the internal violence shows green signal to manage and Nepal Rastra Bank make ease for rules and regulations, many few commercial banks are coming existence and existing development banks and financial institutions are upgrading them as commercial banks. At present there are 30 commercial banks registered and operating in Nepal.

Table No: 1.1
List of Commercial Bank in Nepal

1	Nepal Bank Ltd.	1937/11/15
2	Rastriya Banijya Bank Ltd.	1966/01/23
3	Agriculture Development Bank Ltd.	1968/01/02
4	Nabil Bank Ltd.	1984/07/16
5	Nepal Investment Bank Ltd.	1986/02/27
6	Standard Chartered Bank Nepal Ltd.	1987/01/30
7	Himalayan Bank Ltd.	1993/01/18
8	Nepal SBI Bank Ltd.	1993/07/07
9	Nepal Bangladesh Bank Ltd.	1994/06/05
10	Everest Bank Ltd.	1994/10/18
11	Bank of Kathmandu Ltd.	1995/03/12
12	Nepal Credit and Commerce Bank Ltd.	1996/10/14
13	Lumbini Bank Ltd.	1998/07/17
14	Machhapuchhre Bank Ltd.	2000/10/03
15	Kumari Bank Ltd.	2001/04/03
16	Laxmi Bank Ltd.	2002/04/03
17	Siddhartha Bank Ltd.	2002/12/24
18	Global Bank Ltd.	2007/01/02
19	Citizens Bank International Ltd.	2007/06/21
20	Prime Commercial Bank Ltd	2007/09/24
21	Sunrise Bank Ltd.	2007/10/12
22	NIC Asia	16/03/2070
23	DCBL Bank Ltd.	2008/05/25
24	NMB Bank Ltd.	2008/06/05
25	Kist Bank Ltd.	2009/05/07
26	Janata Bank Nepal Ltd.	2010/04/05
27	Mega Bank Nepal Ltd.	2010/07/23

28	Civil Bank Ltd.	2010/11/26
29	Century Commercial Bank Ltd.	2011/03/10
30	Sanima Bank Ltd.	2012/03/15

Source: NRB

1.5 Function of Commercial Bank

The main function of commercial banks includes:

I. Accepting deposits in the forms of current.
II. Saving and fixed deposits, providing short, medium and long term loans.
III. Acting as an agency in transfer of money, make payment on commission basis for the cheque, draft, bill of exchange etc by the customer.
IV. Buying and selling shares and debentures of any company and government bonds.
V. Collecting interests on debenture and government bonds, dividend on shares and funds from other banks for its customers.
VI. Making payments on insurance premium, rent, income tax, school fees, and telephone bills to the concerned offices on behalf of customers.
VII. Carrying out the foreign currency exchange, and
VIII. Helping in foreign trade etc.

Moreover, other functions include: to protect the precious jewelries; to provide travelers cheque, to underwrite the debentures; to issue credit card, debit card, master card, visa and etc; to create credit on the specific basis and expand credit and so on.

1.6 Profit of concern Banks

1.6.1 Nepal SBI Bank Limited

Nepal SBI Bank Limited is joint venture of State bank of India and Nepali promoters. Nepal SBI Bank Ltd. Was registered under The Company Act 1964 in 1993.The bank is managed by state bank of Indian under the joint venture and technical services agreement sign between it and Nepali promoters viz. Employees provident fund and agriculture development bank Nepal. The State Bank of India is holding 55% share of total investment. The bank started its operation with authorized

capital of Rs. 2,000,000,000, issued capital of Rs. 1,869,303,258 and paid up capital of Rs.1, 869,303,258.

The main objective of the bank is carrying out modern banking business in the country under commercial bank act 1974. The bank provide loan to agriculture, commercial and industrial sectors. The bank started its banking operation on 1994. Presently it has 56 branches serving inside and out of the valley.

Table No. : 1.2

Share Subscription of NSBI

Bank of India, India(foreign ownership)	55%
Employees Provident fund	15%
General Public	30%

Source: Annual Report of NSBI Bank Limited.

The following facilities are being provided by the bank:

- International trade and banking guarantee
- Any branch banking
- Conventional banking facilities
- 365 days banking(available at few branches only)
- Remittance, etc.

1.6.2 Everest Bank Limited (EBI)

Everest Bank Limited (A joint venture with Punjab National Bank India) has been established with the objective of expanding professionals banking services to various sections of society in the kingdom of Nepal and there by contributes in the economic development of the country. The bank has come into formal operations from 18th October 1994 (Kartik 2051BS). EBL is a joint venture with Punjab National Bank (PNB) one of the largest commercial bank in India having over 6,000 branches and more than 300 foreign correspondents around the globe. PNB has a century old tradition of successful banking and is known for its financial strength and will laid down modern banking system and procedures. As a joint-venture partner, PNB has

been providing top management support to EBL under Technical Service Agreement. EBL is currently operating with 53 branches in various part of the kingdom of Nepal. EBL operated with the objectives of providing the full range of quality banking service to both the business community and the common man.

Table No. : 1.3

Current capital structure of Everest Bank Limited

Capital as on 2012/13	NPR
Authorized capital	2,000,000,000
Issued Capital	1,761,126,410
Paid up Capital	1,601,126,410

Source: Annual Report of Everest Bank Limited

The following activities and services are provided by EBL including normal functions.

- SWIFT transfer
- T.T. transfer
- L.C. facilities
- Deposit Locker
- Drawing arrangement
- International trade and bond guarantee

1.6.3 Nepal Investment Bank Ltd. (NIBL)

Nepal Investment Bank Limited (NIBL) previously Nepal Indosuez Bank Ltd. was established in 1986 as a joint venture between Nepalese & French Partners. The French partner (holding 50% of the capital in NIBL) was Credit Agric ole Indosuez, a subsidiary of one of the largest banking group in the world. With the decision of Credit Agric Ole Indosuez to divest a group of companies comprising of banker, professionals, industrialists and businessman has acquired on Baisakh 2059 BS the 50% shareholding of credit Agricola Indosuez in Nepal Indosuez Bank Ltd.

The name of the bank has changed to Nepal Investment Bank Ltd. (NIBL) upon approval of bank's annual general meeting, Nepal Rastra Bank and company registrar's office with the following shareholding structure.

- A group of companies holding 50% of the capital.
- Rastriya Banijya Bank (RBB) holding 15% of the capital
- Rastriya Beema Sansthan (RBS) holding 15% of the capital

- The remaining 20% being held by the general public (this means that NIBL is company listed on the Nepal Stock Exchange (NEPSE).

Table No. : 1.4

Capital Structure of NIBL

Capital as on 2012/13	NPR
Authorized capital	4,000,000,000
Issued Capital	3,768,007,700
Paid up Capital	3,768,007,700

Source: Annual Report of NIBL

The main objective of the bank is to provide loans and advance to agriculture, industries and commerce to provide modern banking and financial services. Currently NIBL operates with 44 branches serving its customers in different parts of the kingdom.

1.6.4. Himalayan Bank Limited (HBL):

HBL was established in 1992 AD. It is established to maintain the economic welfare of the general people to facilitate loan for agriculture, industry and commerce to provide the banking service to the country and the people. The founder stockholders own 51% of share, Habib Bank of Pakistan 20%, Karmachari Sanchaya Kosh 14% and general public 15% of the total capital structure, the bank has Rs. 3 Billion authorized and Rs. 2 Billion issued capital and Rs. 2 Billion paid up capital. It is the first joint venture bank having domestic ownership more than 50%. The branch currently operates with 44 branches in different parts of the country.

Table No. : 1.5

Capital Structure of Himalayan Bank Limited

Capital as on 2012/13	NPR
Authorized capital	4,000,000,000
Issued Capital	2,760,000,000
Paid up Capital	2,760,000,000

Source: Annual Report of Himalayan Bank Limited.

1.7 Capital Structure of Commercial Banks:

Every business firm or bank requires the initial funds for its sound operation. Capital is the life blood of the business. A business firm or enterprises cannot run their business without capital. Enterprises whether they are government owned or privately

owned have to make pertinent capital structure decision in identifying exactly how much capital is needed to run their operation smoothly.

The required is generated usually by two means: equity and debt, equity provides the ownership of the firm to the shareholders. On the other hand, debt is a fund borrowed with fixed charges to be paid periodically to the debtor, the term capital structure refers to the proportion of debt and equity capital or the composition of long term sources of finance, such as preference capital debentures, long term debt and equity capital including services and surpluses (i.e. retained earnings and excluding short term debts).

Firstly, it should be decided the meaning of capital structure. This would be capital structure, which results in a low overall cost of capital for the company, that is low, and then the discounted value of future cash flows generated by the company is high resulting in a high overall company value. The objective is therefore to find the capital structure that gives the lowest overall cost of capital and consequently, the highest company value.

The capital structure decision affects the total value of the firm. The proper balance between debt and equity is necessary to ensure a tradeoff between risk and return to the shareholders. The capital structure of the bank should be such that leads to the value maximization. The optimal capital structure, i.e. the capital structure with reasonable proportion of debt and equity minimizes the opportunity cost of capital and maximizes the shareholder's wealth.

1.8 Focus of the Study

As we have started above the meaning and importance of the capital structure of financial institution. The main purpose of this study is to evaluate the capital structure of the private commercial banks. The capital structure decision is a major decision, which affects the overall cost of capital, total value of the firm and earnings per share.

This study is based upon the study of overall cost of capital structure by using various relative measurement tools. It considered earnings per share, dividend per share, return on total assets etc. optimal capital structure plays vital role in every organization. So, this study tries to evaluate the optimality of their capital structure

using various financial variables for the purpose of comparative evaluation. Hence the focus of this study mainly deals with the affects of the capital structure on the growth and profitability of the firm and the extent to which the capital structure policy is followed by the commercial banks.

1.9 Statement of the problems

Capital structure concept is not taken seriously by the Nepalese companies. Therefore optimal capital structure does not exist at all. Among all listed commercial bank in the stock exchange very few are using the debt capital and contrary to this some of the companies are ruined by the excess burden of the cost of debt capital. Generally every company has its own policy in determining capital structure for operating business activities. Some of the business use only equity capital some use only debt and some business use both debt and equity capital. Therefore determination of capital structure largely depends upon the company policy and cost of capital.

The literature on corporate finance has contributed significant progress since the seminal works of Modigliani and Miller (1958). Theoretical advancement, particularly development of capital structure models based on tax balancing and asymmetric information, and more recently, on product-market and corporate control considerations (Harris and Raviv, 1981), has managed to shed some light on the financing behavior of corporations. Many researchers have tested the validity of the modern theory of finance. Numerous studies have also investigated the capital structure of firms in various sectors of the economy.

Since the capital structure of firm is determined by firm specific variables as well as external macroeconomic variable, most of the studies are based on firm specific variables. Based on the capital structure theories tax shield, assets structure, profitability, firm size, growth, risk, liquidity, industry class and product uniqueness are the firm specific key attributes which determine the capital structure. Therefore the leverage of the firm is the function of tax shield, assets structure, profitability, firm size, growth, risk, and product uniqueness (Titman and Wessels, 1988; Ozkan, 2001; Gaud *et al.*, 2005).

Leverage = *f* (tax, assets, profitability, size, growth, liquidity, risk, product)

The existing researches on the capital structure have been largely confined to the US and few other developed countries. Although the capital structure issue has received great importance in these countries, it has remained neglected in developing countries due to different economic and legal constraints. However the economic liberalization and reformation processes since 1980's in developing countries now have less institutional barriers. Research in this field will contribute to signify the importance of capital structure to value maximization objective of the firm. This study attempts to shed some light on the capital structure issues in Nepalese context. It is a case of capital structure in less developed countries. Including capital structure determinants, the issue is to analyze capital structure practices of Nepalese companies. More specifically, this study deals with following issues:

The present study had tried to analyze and examine the practice of capital structure in the commercial banks in Nepal. This study specially deals with the following problems:

- What types of capital structure policies the Nepalese companies have followed?
- What factors affected capital structure?
- What is the relationship of leverage with different financial indicators (Ratios)?
- To what extent the capital structure theories can explain capital structure choice of Nepalese firms?
- How far commercial banks have been able to use their resources?
- How efficiently these banks are managing their capital structure?
- How much is the profitability?

1.10 Objectives of the study:

The major objective is to examine determinants of the capital structure choice in Nepalese context. The specific objectives are as follows:

I. To examine the current capital structure of sample commercial banks.
II. To analyze the mix of debt and equity of sample banks.
III. To analyze relationship between capital structure, cost of capital and profitability.

IV. To find out factors affecting capital structure management decision.

1.11 Significance of the study:

First of all, it is the fact that this study is undertaken to apply the theoretical concept and knowledge of financial management to the practical aspect as a partial fulfillment of the requirement of Master of Business Study (MBS) under faculty of Management, Tribhuvan University. This study would contribute an overall look at the coming up new capital policies to be taken by the bank and the factors that should be taken in consideration while preparing the next year's policy. The bank which would be included in as sample would likely see the point of their weakness and significance of this study on their future plan.

This study is also important for owners, creditors and potential investors to maker, stakeholder of the banks and other those having investment on capital structure decision. Among outsiders, mainly the customers, financing agencies, stock exchange and stock traders are interested in the performance of banks and the customers both can identity to which bank they could go. The financial agencies can understand where the funds are more secured and stock exchange, stock broker can find the relative worth of each bank. It will be valuable property for the library use and the study will be used as a pilot work for the future research.

1.12 Limitations of the study:

Each study is conducted under some constraints and limitations. Likewise this study is also limited by some common constraints. This study is prepared for partial fulfillment of MBS degree which has to be finished within a short span of time and under different strains. Some of the basic limitations are as follows:

1. This study is based on published financial documents like: Balance sheet, profit and loss account, other related journals and books etc. (2008/09 - 2012/13)
2. This whole study is based on data of five year (2008/09-2012/013) period.
3. This study is based on secondary data collected from bank and their websites.

4. This study is limited to related variables affecting capital structure of the sample banks.
5. The lack of sufficient resources and time is the limitation of the study. The study is to fulfill for business studies (MBS) program which has to be conducted within the prescribed time.

1.13 Organization of the study

This research study has been divided into five chapters. They are as follows:

Chapter- I

The first chapter contains the introduction part of the study. It gives earlier history of concern title and some related term as well. It has introduction of commercial bank as well as sample banks. General background of the study commercial banking scenario in Nepal, statement of the problem objective of the study, signification of the study , limitation of the study, organization of the study are arranged.

Chapter-II

The second chapter deals with review of literature which presents some principles, theoretical aspects, some pilot studies made under some report, journals and relevant studies on the topics of this thesis. It also reviews the major relevant studies with fund mobilization of a commercial joint venture bank.

Chapter –III

Similarly, the third chapter explains the research methodology including research design, nature and resource of data, sample size, date collection procedure, tabulation, analysis and interpretation of data, period covered of research and review of literature.

Chapter –IV

The fourth chapter deals with presentation and analysis of data through a definite course of research methodology. This chapter is to analysis different financial ratios and statistical analysis related to capital structure and fund structure of this sample bank.

Chapter –V

The fifth chapter discusses summary of the study and suggestion as well as recommendations. Besides this bibliography and appendices are also included.

CHAPTER–II
REVIEW OF LITERATURE

2.1 Introduction

Capital structure is one of the most controversial issues in corporate finance and it has been receiving due attention of researchers since the prominent work of Modigliani and Miller (1958). Based on their theoretical framework, so many theories of capital structure have been developing. The empirical studies in this regard have been contributing significantly. This chapter briefly reviews the literature, which provides basic foundations to this study. The various approaches employed in this study are derived from different literature surveyed in this chapter.

The purpose of literature review is thus find out what research studies have been to conducted in ones field of study, and what remains to be done. Review of literature provides foundation to the study. The literature survey also minimizes the risk of pursuing the dead end in research. To make meaningful research study conceptual review has been done through the study of various books, journals and articles and researches conducted by the previous researches in the field of capital structure is research work, thesis and dissertation etc. So, this chapter 'literature review' has been divided into the following sections.

- Conceptual review
- Theoretical review
- Review of related studies

2.2 Conceptual review

In this section ,various books are reviewed those are written by the different writers that make clear about the concept, definitions, composition and assumptions of capital structure, theories and approaches of capital structure and checklist of factor effecting capital structure are reviewed. It helps to assess new idea by examining views of different writers and scholars.

2.2.1 Conceptual framework

The capital structure refers to the composition of firm's capital with different sources of funds, particularly to the long-term funds/capitals. However, the term capital structure and financial structure have been used interchangeably in finance literature, a line of technical difference is there, that is, the financial structure comprised of the total combination of equity capital, preferred capital, long-term debt and short-term debt/liabilities, whereas, the capital structure excludes the short-term debt/liabilities. For its investment project, the firm can choose either of the sources or combination of different sources in different forms but the underlying question arising in this regard is which source or the combination is better to maximize the value of the firm, the ultimate objective! Therefore, the capital structure should be examined from the viewpoint of its impact on the value of the firm. The optimal capital structure is that combination of debt and equity, which maximizes the value of the firm. In this respect, the capital structure can be interpreted in terms of target capital structure to strike a balance between risks and returns for maximizing the value of the firm. Using more debt raises the riskiness of the firm’s earnings stream. However, a higher debt ratio generally leads to a higher expected rate of return. The higher risk tends to lower a stock price, but a higher expected return raises it and drives toward equilibrium.

In broader perspective, the sources of the firm's capital can be classified into two basic categories, that is, equity and debt. Both of these capitals hold inherent properties. In one hand, the equity capital provides investors to control over the firm as owners. However the firm may not able to use only equity financing because the rational objective is to maximize the value of the firm. The cost of new equity would come across higher than existing one and since the risk pattern on equity is higher, the higher expected rate drives to sell equity in lower price in the market. On the other hand, the debt capital provides investors a certain fixed return and right to first claim over the liquidation. Raising debt capital is also advantageous to the firm in numerous ways. Firstly, interest is tax deductible, which lowers the effective cost of debt. Secondly, debt holders are limited to a fixed return (the coupon amount), so stockholders do not have to share profits if the business does have excess profit.

Thirdly, debt holders do not have voting rights, so the stockholders can control a business however they are investing less money than would otherwise be required.

Therefore, the crux of the capital structure theories lies between and among these two basic sources of capital, equity and debt, and interests of three major stakeholders of the firm, stockholders, managers and the debt holders respectively.

The financial manager is concerned with determining the best financial mix of capital structure where the optimal financing mix would exist, in which market price per share could be maximized (Pandey, 1988).

Capital structure of the firm is the permanent financing represented by long term debt, preferred stock and shareholder's equity. Thus, a firm's capital structure is only part of its financial structure (Weston and Brigham, 1978).

Capital structure is made up of debt and equity securities which comprise a firm's finance of its assets. It is the permanent financing of a firm represented by long term debt plus preferred stock plus net worth (Kulkarni; 1983).

The term 'capital structure' means the proportion of different types of securities issued by a firm. The optimal capital structure is the set of proportion that maximizes the total value of the firm (Schall and Haley; 1983).

The two principal sources of long term financing are equity and debt capital. The composition of these two long term financing is known as capital structure. Under normal condition, the earning per share can be increased using higher leverage. But leverage also increases the financial risk of the share holder (Gautam and Thapa; 2060).

Capital structure is one of the most complex areas of financial decision making due to its interrelation with other financial decision variables. The success and failures of the enterprise depends or the ability of top management to make appropriate capital structure decision.

A sound or appropriate capital should have following features:

A. Return:

The capital structure of the company should be most advantageous. Subject to other consideration, it should generate maximum return to the shareholders without adding additional cost to them.

B. Risk:

The use of excessive debt threatens the solvency of the company. To the point debt does not add significant risk it should be used otherwise its use should be avoided.

C. Flexibility:

The capital structure should be flexible. Flexibility as company can raise helps to grab market opportunity as company can raise required funds wherever it is needed for profitable investment opportunities. It also when funds from debt and preferred stock are no more required in the business.

D. Capacity:

The capital structure should be determined within the debt capacity of the company, and this capacity should not be exceeded .The debt capacity of a company depends on its ability to generate future cash flows.

E. Control:

Control power is one of the most concerned part of the management. Management always wants to maintain control over the firm. The capital structure should involved minimum risk of loss control of the company. Issue of excess equity shares to new investors may bring threats to the control by the existing manager. The term capital denotes the long-term fund of the firm. All of the items on the liabilities side of the firm's balance sheet, excluding current liabilities are sources of capital. The total capital can be divided into two components: debt and equity capital.

I. Debt Capital:

It includes all long term borrowing incurred by the firm. Debentures, bonds, long term loan etc are major sources of debt or borrowed capital. A firm employs subtotal amount of debt capital of tax deductibility to interest payment, flexibility, and lower effective cost. However excess amount of debt exposes high risk.

II. Equity Capital:

It consists of the long term fund provided by the firm's owners, the stockholders. In other words, equity capital includes common stock, paid in capital or share premium, reserve and surplus and retained earnings. Joint Stock Company

cannot be established with any equity financing. Preferred stock is neither purely a debt nor equity.

2.3 Theories of Capital Structure

The two principal sources of the long term financing are equity and debt capital. The composition of these two long term financing is known as capital structure. Under normal economic condition, the earning per share can be increased using higher leverage. But leverage also increases the financial risk of the shareholders. As a result, it cannot be said whether or not the value of the firm will increase with leverage. In other words, a great deal of controversy has been developed on whether the capital structure affects value of the firm or not. Traditionalists agree that capital structure is relevant factor for valuation of the firm. Further they say value of the firm can be maximized by adopting optimal capital structure. Modigliani and miller, on the other hand argue that in perfect capital market, it does not affect value of the firm. The major theories of capital structure are as follow (Pandey, 1999).

Capital Structure is an important subject, especially for firms. A bad capital structure is more expensive than a good capital structure. Firms raise investment funds in a number of different ways. A firm's mix of these different sources of capital is referred to as its capital structure.

Basically, the theories of capital structure are distinguished into 6 different groups.

- Traditional theory
- Modigliani- Miller theorem
- Trade off theory
- Free Cash Flow theory
- Pecking Order theory
- Stakeholder theory

2.3. I Traditional Theory

The first theory is called the "traditional theory". Supporters of this theory believe that the lowest weighted average cost of capital (WACC) will maximize the firm's market value. This means the existence of an optimum relation between debts and equity but it is very difficult to reach that point. Although it is cheaper to finance with debt, this theory certainly rejects to finance all with debt because after a certain

level of debt the risk of non-payment increases. In this case shareholder and debt financiers demand a higher compensation.

2.3. II Modigliani –Miller Theorem

Modigliani and Miller's (1958) seminal paper on corporate capital structure is founded upon a number of restrictive assumptions. Based on the assumptions of perfect capital market, no taxes, homogeneous exceptions and homogeneous risk class, riskless debt, and perpetual cash flows, Modigliani and Miller concluded that value of the firm is independent to the leverage of the firm (MM Proposition I).

That is, the *market value of any firm is independent of its capital structure and is given by capitalizing its expected return at the rate ∂k appropriate to its class*. By the same token, *the average cost of capital to any firm is completely independent of its capital structure and is equal to the capitalization rate of a pure equity stream of its class*. Under the Proposition II, they further state that *the expected yield of a share of stock is equal to the appropriate capitalization rate ∂k for a pure equity stream in the class, plus a premium related to financial risk*. That is, the expected rate of return on the stock of any company belonging to the same class is a linear function of leverage.

Therefore, from the composite picture of MM Propositions I and II, holding its underlying assumptions, the value of the firm and the firm's overall cost of capital are independent of its capital structure. Hence, the capital structure is irrelevant.

2.3. III Trade off Theory

The trade-off theory of the capital structure suggests that a firm’s target leverage is driven by three competing forces: taxes, cost of bankruptcy (financial distress), and the agency conflict. Therefore, the firm seeks debt level that balances the tax advantages of additional debt against the costs of the possible financial distress and agency conflict. Therefore, a firm sets target leverage ratio and gradually moves toward it.

Taxes: After five years of their original work, in 1963, the Modigliani and Miller published second article (Modigliani and Miller, 1963) introducing the corporate tax, that is, relaxing the early assumption of ‘no tax world’. Incorporating corporate taxes, they concluded that leverage would increase a firm's value because interest on debt capital is tax-deductible expenses. The increasing leverage ratio

linearly increases the value of the firm. Hence, under the corrected version of MM Proposition I, the value of levered firm is equals to the value of unlevered firm in the same risk class plus the gain from leverage that is the value of tax saving as a result of interest payment on debt capital.

Miller (1977) extends his work, deriving an expression for the gain from leverage when different tax rates are applied to corporate profit, personal earnings from stocks and personal interest earnings. He shows that the incentive to finance

completely through debt disappears under a variety of tax regimes. He states that even in a world in which interest payments are fully deductible in computing corporate income taxes, the value of the firm, in equilibrium will still be independent of its capital structure'. In his paper, Miller also suggests that clientele effects (whereby firms attract those investors that suit their degree of leverage) may reduce or negate the tax related gains from leverage for any single firm.

Bankruptcy Costs: The use of debt in one hand provides the debt tax shield but by the same time the higher level of use of debt increases both bankruptcy and financial distress cost. The works of Stiglitz (1972), Kraus and Litzenberger (1973) and Kim (1978) are regarded as prominent in bankruptcy cost aspect of capital structure theory. According to them, when a firm raises excessive debt to finance its operations, it may default on this debt. As the proportion of debt in the capital structure is increased, the probability of bankruptcy also increases. However, it is not bankruptcy *per se* that is the problem. If the bond payments are not met when they become due and the bond defaults, the firm is simply transferred to the bondholders. However, there are 'dead weight' costs that arise in the case of corporate bankruptcy which come in form of direct and indirect deadweight costs. Direct out-of-pocket expenses for the administration of the bankruptcy process (legal fees and management time) are relatively small compared to the market values of the firms. However, there are economies of scale with respect to direct bankruptcy costs. While they seem of less important for large firms, they can be substantial for small firms. Indirect bankruptcy costs can be significant for both large and small firms (Warner, 1977). Once the firm runs into financial distress, it is obvious that the firm's investment policy changes, which results in a reduction of firm value. Most obvious, the firm may

decide on shortsighted cutbacks in research and development, maintenance, advertising, and educational expenditures that ultimately result in lower firm values. Besides, bankruptcy hampers conduct with customers. They are usually lost because of both fear of impaired service and loss of trust.

Agency Costs: In search of optimal capital structure, beside the tax and bankruptcy cost aspect, Jensen and Meckling (1976) explore on the agency cost aspect. They use the agency cost to argue that the probability distribution of cash flow provided by the firm is not independent of its ownership structure. Their theory of corporate ownership is based on the assumptions that the firm size and outside financing are constant. Hence the actual value of the firm is the function of the agency cost incurred.

Jensen and Meckling (1976) identify two types of conflicts because of the incentive problem associated with issuance of new debt and new external equity. They argue that the conflicts between shareholders and managers arise because managers hold less than 100% of the residual claim. Consequently, they do not capture the entire gain from their profit enhancement activities, but they do bear the entire cost of these activities. Conflict between debt holders and equity holders arise because the debt contract gives equity holders an incentive to invest sub optimally. The consequences of this conflict are overinvestment (risk shifting), underinvestment (assets substitution) problem and residual claim.

The risk shifting or bondholder expropriation hypothesis asserts that stockholders have the incentive to exploit bondholders once the debt is issued. Managers, whose ultimate responsibility is to the stockholders, are likely to make investments that maximize stockholder wealth rather than total firm value. In particular, because equity can be viewed as a call option, managers tend to accept risky negative net present value (NPV) projects in which the value decrease consists of a decrease in the value of debt and a smaller increase in the value of equity. This is known as the overinvestment problem. The underinvestment problem refers to the tendency of managers to avoid safe positive net present value projects in which the value increase consists of an increase in the value of debt and a smaller decrease in the value of equity. Myers (1977) demonstrates that there is a rational basis for this

shortsightedness when stockholders have no chance to receive any proceeds of a valuable project when the debt comes due. Hence, the firm will refuse to accept good investment opportunities *ex post*, reducing the firm value *ex ante*.

2.3. IV Free Cash Flow Theory

In the contrary of the trade off theory, in which a firm survives after a maximization of the market value, the free cash flow theory presumes that there are enormous conflicts of interest between shareholders and stakeholders. This implies that manager's decisions don't always maximize the market value of the firm (Jensen, 1986).

A free cash flow is the balance of money, when all projects (with positive net present values) are financed. Debt reduces the agency costs of free cash flow by reducing the cash flow available for spending at the discretion of managers (Jensen, 1986). Debt also reduces the freedom of decisions, because of firm is forced to pay at certain times interest and payoffs. There will always be risk that a firm won't be able to pay interest and payoffs in future times. This risk causes managers to lead and organize a firm more efficient.

2.3. V Pecking Order Theory

Pecking order is also known as a ladder of class structure of financing. It was first suggested by Myers and Majluf (1984). It is also known as pecking order theory for capital structure. This theory is preference theory because the fund sources are selected in preference.

The first preference to given to the internal financing that is retained earnings. It is because it avoids the outside scrutiny of suppliers of capital and there is no flotation costs associated with the use of retained earnings. The next preference is also given to the straight debt. As explained in the previous sections it is good signal to the investors and help to raise the market price. Moreover, debt results in less intrusion into management by suppliers of capital and flotation costs are less than those with other types of external financing. Next in order of financing preference is preferred stock which has some of the feature of debt. This is followed by the various hybrid securities, like convertible bonds. Finally, the least desirable security to issue is

straight equity. It is not only a method of financing but it also likely to have an adverse signaling effect.

This story is mainly a behavioral explanation of why certain companies finance the way they do. It is consistent with some rational arguments, such as asymmetric information and signaling, as well as floatation costs. The sequence of investment resources is restricted by problems caused by asymmetrical information between managers and potential investors. The following assumptions are made by this theory (Myers, 1984).

1. Firms prefer internal ways to finance projects.
2. Firms adapt their target dividend payout ratios to available investment resources.
3. Internal resources of a firm are fluctuating because of unpredictable fluctuations of profitability.
4. When firms need extra resources, they prefer the safest way of getting funds; this means that firms prefer debt to convertible stock and common stocks.

This result of this pecking order theory is that a firm doesn't have a certain target debt ratio. The target ratio is dependent on the way a firm financed its projects in the past. This theory also pays attentions to cost of asymmetrical information and costs of bankruptcy.

When this cost exists, a firm doesn't always choose to finance projects with a positive net present value. Not a positive net present value determines whether a firm finance a project or not, but the way in which a firm is able to finance their projects.

Baskin researched the validity of this theory in 1989 and he made the following conclusions;

The accumulated evidence in favor of the pecking order hypothesis is now substantial. Now it is possible to provide pecking order behavior with a rational basis and there seems no longer any reason to ignore the manifest empirical evidence.

2.3. VI Stakeholders Theory

Cornell and Shapiro (19870 assumes that not only investors have an interest in a firm. There are different groups of non- investor stakeholders and some of them

have a lot of influence in the financial policy of a firm. Or as Cornell and Shapiro wrote: Financial structure may also depend on a firm's net organizational capital and on the nature of its stakeholders (Cornell and Shapiro 1987).

Examples of non-investors stakeholders are customers, employees and suppliers. Non investor's stakeholder holds implicit claims. Implicit claims are non written promises and rights, such as the right to provide services to customers or job security for employees.

2.3.1. Approaches to Capital Structure

- Traditional Approach
- Net Income Approach
- Net operating income approach
- Modigliani- Miller Approach

All the above approaches are based on some common assumptions, which are as follows:

Basic assumptions and definitions: (Weston and Brigham, 1992)

1. Only two types of capital structures are employed long term debt and common equity.
2. There is no tax on corporate income
3. The ratio of debt to equity for a firm is change by issuing debt to repurchase stock or issuing stock to pay off debt. In other words a change in capital structure is effected immediately. In this regard, we assume no transaction cost.
4. The firm has a policy of paying 100% of its earning in dividends. Thus, we abstract from the dividend decision.
5. The expected value of the subjective profitability distribution of expected future operating earnings for each company are the same for all investors in the market.
6. The operating earnings of the firm are not expected to grow. The expected value of the profitability distributions of expected operating earnings for all future periods are the same as present operating earnings (Van Horne, 2002)

7. There are only two sources of funds under by a firm: Perpetual risk less debt and ordinary shares.
8. The dividend payout ratio is 100. That is the total earning is paid out as dividend to the shareholders and there are no retained earnings.
9. The total assets are given and not change. The investment decisions are in other words to be constant.
10. The total financing remains constants. The firm can change its degree of leverage (Capital structure) either by selling shares and use the proceeds to retire debenture or by raising more debt and reduce the equity capital.
11. The operating profit (EBIT) is not expected to grow.
12. The firm has perpetual life (Khan and Jain; 1999)

S = total market value of the stock. (Equity)

B = total market value of the bonds (Debt)

I = Interest payments

Debt,

$$Cost\ of\ Debt = Kd = \frac{Interest}{Debt} = \frac{I}{B}$$

$$Value\ of\ Debt = B = \frac{Interest}{Kd} = \frac{I}{Kd}$$

Equity or common stock,

$$cost\ of\ Equity\ capital = Ks = \frac{D1}{P0} + g$$

Where,

$d1 = Next\ Dividend$

$P0 = Current\ Price\ per\ share$

$g = Expected\ growth\ rate$

Overall or Weighted Average cost of capital

$$K = Kd(B/V) + Ks(S/V) = \frac{Kd(B)}{B+S} + \frac{Ks(S)}{B+S}$$

The total value of the firm is thus,

$$V \text{ X} B \Gamma S \text{ X} \frac{I}{Kd} \Gamma \frac{EBIT \text{ Z} I}{Ks}$$

2.3.1. I Traditional Approach

"The traditional capital structure theories, which is taken as middle ground position is known as intermediate approach. It is a compromise between the net income approach and the net operating approach. According to this view, the value of firm can be increased or the cost of capital can be reduced by a judicious mix of debt and equity capital, and that an optimum capital structure exists for every firm. This approach very clearly implies that the cost of capital decreases within the reasonable limit of debt and then increases with leverage. Thus, an optimum capital structure exists, and it occurs when the cost of capital is minimum or the value of firm is maximum.

The statement that debt funds are cheaper than equity funds carries the clear implication that the interest rate of debt plus the increased yield on the common stock, together on the weighted basis will be less than yield (cost of equity) which existed on the common stock before debt financing (Barges, Alxender, 1963). That is the weighted average cost of capital will decrease with the use of debt up to a limit.

According to the traditional position, the manner in which the overall cost of capital reacts to changes in capital structure can be divided into three stages (Soloman, Ezra, 1963).

First Stage: Increasing Value

The first stage starts with the introduction of debt in the firm's capital structure. In this stage, the cost of equity (Ks) either remains constant or rises slightly with debts because of the added financial risk. But it does not increase fast enough to offset the advantage of low cost debt. In other words, the advantage arising out of the use of debts is so large that, even after allowing for higher cost of equity, the benefit of the use of the cheaper sources
of the funds are still available. As a result the value of the firm (V) increases as the overall cost of capital falls with increasing leverage.

During this cost of debts (Kd) remains constant or rises only modestly. The combined effect of all these will be reflected in increase in market value of the firm and decline in overall cost of capital (k).

Second Stage: Optimum Value

In the second stage, further application of debt will raise cost of debt and equity capital so sharply as to offset the gain in net income. Hence, the total market value of the firm would remain unchanged. While the firm has reached a certain degree of leverage, increase in it has a negligible effect on the value of the firm or overall cost of capital of the firm. The increase in the degree of leverage increases the cost of equity due to the added financial risk that offset the advantages of low cost debts. Within the range of such debts level or at a specific point, the value of the firm will be maximum or the cost of capital will be minimum.

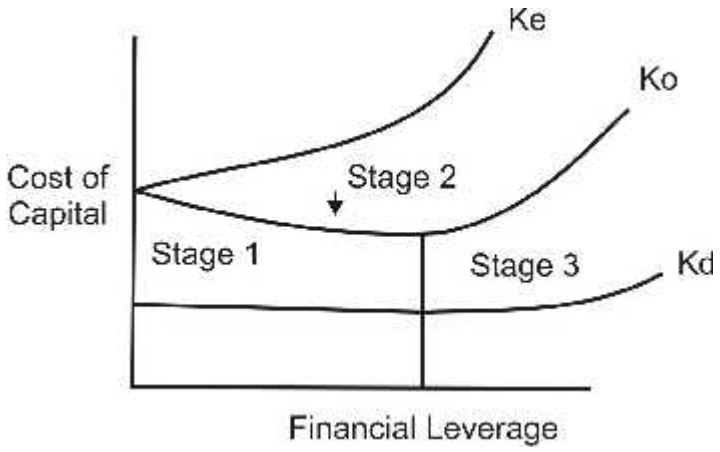
Third Stage: Declining Value

Beyond the acceptable limit of leverage, the value of the firm decreases with the increase of the leverage or the overall cost of capital increases with the additional leverage, this happens because investors perceive a high degree of financial risk, which increases the cost of equity by more than enough to offset the advantage of low cost debt.

The overall effect of these three stages is to suggest that the cost of capital is a function of leverage i.e. first falling and after reaching minimum point or range it would start rising. The relation between cost of capital and leverage is graphically shown in figure below.

Figure 2.1

Effect of leverage on Cost of Capital under Traditional Theory



In the above figure, it is assumed that K_e rise at an increasing rate with leverage, whereas K_d is assumed to rise only after significant leverage has occurred. At first, the weighted cost of capital, K_0, declines with leverage because the rise in K_e does not entirely offset the use of cheaper debt funds. As a result, K_0 declines with moderate use of leverage. After a point, however the increase in K_e more than offset the use of cheaper debt funds in the capital structure, and the K begins to rise. The rise in K_0 is supported further once K_d begins to rise. The optimal capital structure is point X; thus the traditional position implies that the cost of capital is no independent of capital structure of the firm and that there is an optimal capital structure.

Thus, with an increase in the ratio of debt to equity, overall cost of capital will decline and market price of equity stock as well as value of firm will rise (David Durand, 1959).

The converse will hold true if ratio of debt to equity tends to decline. The approach assumes no change in the behavior of both stockholders and debt holders as to the required rate of return on response to a change in the debt-equity ratio of the firm. They want to invest since debt holder are exposed to less or degree of risk, assumed of a fixed rate of interest and are given preferential claim over the profit and assets ,the debt holders required rate of return is relatively lower than that of equity

holders. So, the debt financing g is relatively cheaper then equity. From this reason, at constant cost of equity (Ke) and cost of debt K_d; the overall cost of capital with the increase proportion of the debt in the capital structure. This suggests that higher the level of debt, lower the overall cost of capital and higher the value of firm, it means that a firm attends optimal capital structure when it uses 100% debt financing. Running a business with 100% debt financing, however, is quite uncommon in the real world. The firm can achieve optimal capital structure by making judicious use of debt and equity and attempt to maximize the market price of its stock.

2.3.1. II Net Income Approach (NI Approach)

In sum, as per NI approach, increase in ration of debt to total capitalization brings about corresponding increase in total value of firm and decline in cost of capital. On the contrary, decrease in ratio of debt to total capitalization causes decline in total value of firm and increase cost of capital. Thus, this approach is appeared as relevancy theory. This approach is based on the following assumptions:

1. The cost of equity and debt remain constant to the acceptable range of leverage.
2. The corporate income taxes do not exists
3. The cost of debt rate is less than the cost of equity.
4. The increasing leverage brings about no deterioration in the equity of net earnings so long as borrowing is consigned to the amount below the acceptable limits. Graphically, the effect of leverage on the firm's cost of capital and total market value of the firms is shown below.

Figure 2.2

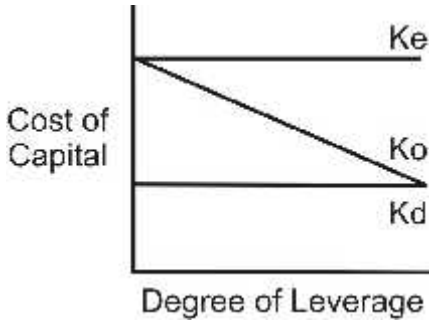
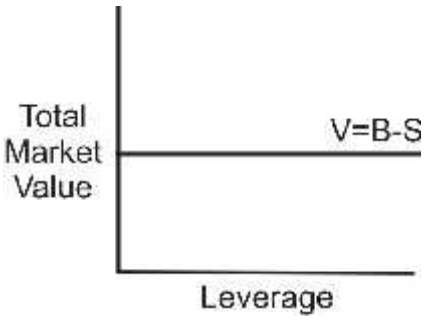


Figure 2.3



The effect of leverage on the capital structure

Continuous decrease in K0 with the increase in debt-equity ratio, since any decrease in K0 directly contributes to the value of the firm; it increases with the increase in the debt-equity ratio (figure 2.3). Thus the financial leverage, according to the NI Approach is an important variable in the capital structure decision of a firm. Under the NI approach, a firm can determine an optimal capital structure. If the firm is unleveled the overall cost of capital will be just equal to the equity capitalization rate.

In brief, the essence of the net income approach is that the firm can lower its cost of capital by using debt. The approach is based on the assumptions that the use of debt does not change the risk perception of the investors. Consequently, the interest rate of debt and the equity capitalization rate remain constant to debt. Therefore, the increased use of debt results in higher market value of shares and as a result, lower overall cost of capital (Ko).

2.3.1. III Net Operating Income Approach (NOI)

NOI approach is another behavioral approach suggested by Duran David. This approach is diametrically opposite from the NI approach with respect to the assumption of the behavior of equity holders and debt holders. The essence of this approach is that the leverage/ capital structure decision of the firm is irrelevant. The overall cost of capital is independent of the degree of leverage; any changes in leverage will lead to change in the value of the firm and the market price of the shares. Net operating approach is slightly different from NI approach, unlike the NI approach in NOI approach, the overall cost of capital and value of firm are independent of capital structure decision and change in degree of financing. Leverage does not bring about any change in the value of firm and cost of capital.

The main difference between NI and NOI approach is the base that investors use to value the firm. Under NOI approach, the Net operating income, i.e. the earning before interest and tax (EBIT), instead of net income is taken as the base. Like the NI approach, the NOI approach also assumes a constant rate of Kd, which means that the debt holders do not demand higher rate of interest for higher level of leverage risk. However, unlike the assumption of NI approach, NOI approach assumes that the equity holders do react to higher leverage risk and demand higher rate of return for higher debt- equity ration. This approach says that the cost of equity increases with the debt level and the higher cost of equity offset the benefit of cheaper debt financing resulting no effect at all on overall cost of capital.

The NOI approach is based on the following assumptions:

1. The market capitalizes the value of the firm as a whole. Thus, the split between the debt and equity is not important.
2. The market uses an overall capitalization rate, K to capitalize the net operating income. K depends on the business risk. If the business risk is assumed to remain unchanged, K is constant.
3. The use of less costly debt funds increases the risk of shareholders. This cause the equity-capitalization rate to increase. Thus, the advantages of debt are offset exactly by the increase in the equity capitalization rate, Ks.
4. The debt capitalization rate, Kd is constant.
5. The corporate income taxes do not exist.

The function of Ks under NOI approach can be expressed in equations as follows:

$$Ks = K + (K - Kd)B/s$$

The relationship between financial leverage and K, Ks and Kd has been graphically depicted in the following figures.

Figure 2.4

Effect of leverage on cost of capital

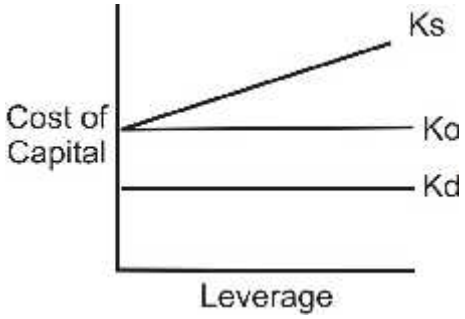
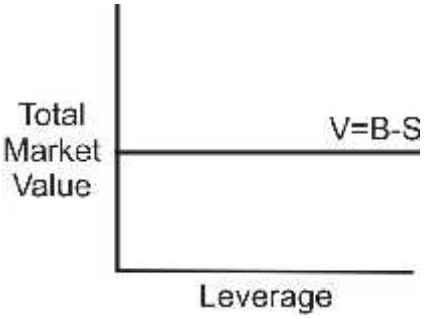


Figure 2.5

Effect of leverage on total market value of the firm



In the figure 2.4 above, it is shown that the curve Ko and Kd are parallel to the horizontal X-axis and Ks are increasing continuously. This is because K and Kd remain constant under all the circumstances but the Ks increases with the degree of increase in the leverage. Thus, there is no single point or range where the capital structure is optimum. We know obviously from the figure 2.4 under that NOI approach, as low cost of debt is used, it advantage is exactly offset by increase in cost of equity in such a way that the cost of capital remain constant. By this, value of the firm also remains constant. At the extreme degree of financial leverage, hidden cost becomes very high hence the firm's cost of capital and its market value are not influenced by the use of additional cheap debt fund (Gitman Lawrence, 1988).

2.3.1. IV Modigliani and Miller Approach's (M-M Approach)

Modigliani and Miller (MM) in their original position advocate that the relationship between leverage and the cost of capital is explained by net operation income approach. They make a formidable attack on the traditional position by offering behavioral justification for having the cost of capital. Ko remains constant throughout all degree of leverage. (Van Horne, 2000).

The approach concludes that the total market, value of a firm and the cost of capital are independent (exclusive of tax considerations) of the capital structure. This model is identical with the net operating income approach. (Jain, 1997:53)

The crucial assumptions of M-M proposition as Propounded are: (Pandey, 1985)

1. Capital markets are perfect. Information is costless and readily available to all investors. There are no transactions costs, and all securities are infinitely divisible. Investors are assumed to be rational and to behave accordingly.
2. The average expected future operating income of a firm are represented by subjective random variables. It is assumed that the expected values of the probability distribution of all investors are the same. The M-M illustration implies that the expected value of the probability distributions of expected operating earnings for all periods are the same as present operating earnings.
3. Firms can be categorized into "equivalent return" classes. All firms within a class have the same degree of business risk. As we shall see later this assumption is not essential for the proof.
4. The absence of corporate income taxes is assumed. M-M removes this assumption later.
5. Firms distribute all net earnings to the shareholders i.e. 100% pay out. MM in 1958, proposed the theory without taxes and layer, they relaxed the theory with tax consideration. So,

   M-M Theory (without taxes)

   M-M Theory (with taxes)

The definitions of some technologies/ notions, used in M-M- theory is given below:

Terminology:

- Levered firm: A firm that uses some percentage of debt in its capital structure is called levered firm.
- Unlevered Firm: All equity financed firms are known as un levered firm.
- Risk Premium: Risk premium is that expected additional return by the equity holder for making a risky investment. In other words, it is the additional return demanded by the equity holders due to inclusion of debt capital in firm's capital structure.

Notation

Ke(U) = The equity capitalization rate of an un levered firm.

Ke(L) = The equity capitalization rate of levered firm.

Kd = The debt capitalization rate.

Ko(U) = The overall capitalization rate of an Un levered firm.

Ko(L) = The overall capitalization rate of an levered firm.

V_u = Value of a un levered firm.

V_L = Value of a levered firm

T = the corporate tax-rate.

Bt = Present value of tax shield benefits of debt/ present value of interest tax shield.

I. M-M without Taxes

M-M have restated and amplified the NOI approach. MM argue that, in the absence of tax, a firm's market value and the cost of capital remain invariant to the capital structure change. In their 1958 article, they provide analytically sound and logically consistent behavior justification in favor of their hypothesis and reject any other capital structure as incorrect. (Modigliani and Miller, 1969)

Proposition I

Given the above assumption, MM argues that for 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 the risk class (Ibid, 268). This is their proposition I. In equation this can be expressed as follows:

$$Value\ of\ the\ Firm\ \mathrm{X}\ Market\ Value\ of\ Debt(B)\ \Gamma\ Market\ Value\ of\ Equity(S)$$

$$= \frac{Expected\ Net\ Operating\ Income}{Expected\ Overall\ Capitalization\ Rate} = \frac{EBIT}{EBT}$$

For an un levered firm,

$$Vu = \frac{EBIT}{Ks}$$

Where, K= Ks in case of unlevered firm

Proposition I can be expressed in terms of the firm's overall capitalization rate, K, which is the ratio of Net Operating income to the market value of all its securities. That is:

$$K = \frac{NOI}{S + B} = \frac{NOI}{V}$$

K can be also be expressed as:

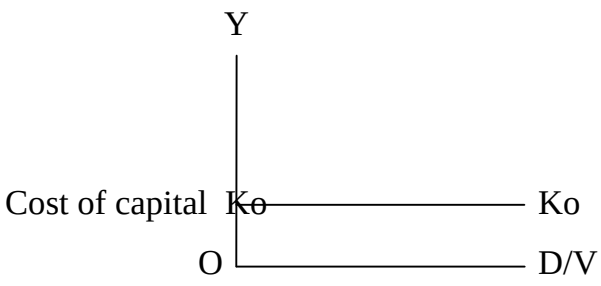
$$K = \frac{Ks(S)}{S + B} + \frac{Kd(B)}{S + B}$$

It means K is the weighted average of the expected rate of return of equity and debt capital of the firm since the cost of capital is defined as the expected net operating income divided by the total market value of the firm and since MM conclude that the total market value of the firm is unaffected by the financing mix, it follows that the cost of capital is independent of the capital structure and is equal to the capitalization rate of a pure equity stream of its class. (Pandey I.M. 1981)

The overall cost of capital function as hypothesis by MM is shown is figure below:

Figure 2.6

Cost of capital under MM Hypothesis



Financial Leverage

Thus two firms identical in all respects except for their capital structure cannot command different market values nor have different cost of capital. But if there is a

discrepancy in the market values or the cost of capital, arbitrary will take place, which will enable investors to engage in personal leverage to restore equilibrium in the market. (I.M. Pandey, 1981)

Proposition II

MM proposition II, which defines the cost of equity, follows from their proposition me and shows the implications of the net operating approach. The proposition II state that the cost of equity rise proportionately with the increase in the financial leverage in order to compensate in the form of premium for bearing additional risk arising fromm the increasing leverage (Pradhan, 1992). The equation for the cost of equity can be derived from the definitions of the average cost of capital.

$$K = \frac{Ks(S)}{S+B} + \frac{Kd(B)}{S+B}$$

$$Ks = \frac{K(B+S)}{S} - \frac{Kd(B)(B+S)}{(S+B)S}$$

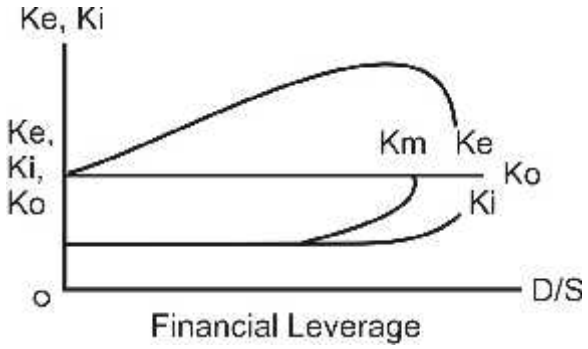
$$Ks = K + (K - Kd)\frac{D}{S}$$

$$Ks = K + (K - Kd)\frac{B}{S}$$

The above equation states that for any firm in a given risk class the cost of equity, Ks, is equal to the constant average cost of capital, K, plus a premium for the financial risk, which is equal to debt-equity ratio times the spread between the constant average cost of capital and the interest rate. As their proportion of debt increases, the cost of equity increases continuously even though K and KD are constant, the crucial part of the MM hypothesis is that K will not rise even if very excessive use of leverage is made. This conclusion could be valid if Kd remains constant for any degree of leverage. But in practice Ks increases with leverage beyond a certain acceptable level of leverage. However, MM maintains that even if Ks are a function of leverage, K will remain constant as Ks will increase at a decreasing rate to compensate. This can be shown as:

Figure 2.7

Behavior of Ko, Ki and Ke under MM Hypothesis



It is clear from the figure that Ks will increase till the marginal rate of interest (Kim) is below the cost of capital. As soon as the marginal rate of interest cuts the cost of capital, Ks will start falling.

2.3.2 Leverage

The term leverage may be defined as the use of that source of funds in the business for which the firms to pay fixed charges, irrespective to the earning of firm. There are two types of leverage: Financial leverage and operating leverage. Leverage associated with investment activities is called operating leverage and associated with financial activities is called financial leverage.

2.3.2.1 Financial Leverage

Financial leverage is the ratio of total debt to total assets or the total value of the firm (Weston and Brigham, 1981). The use of fixed sources of funds, such as debt and preference capital along with the owners' equity in the capital structure is described as financial leverage (Waterman and Martin, 1963). Financial leverage refers to the response of shareholders income to change in earning before interest and tax and is created by debt or preferred stock financing with fixed interest and dividend payment. (Lawrence D. Schell and Haley, 1983)

The debt is risky as well as more advantageous in the context of earning. The use of debt and preferred stock financing provide the income advantage over the common stock financing of the firm under the favorable condition and they increase the risk too. Leverage is employed by the company to earn more. The surplus will increase the return on equity. Since the interest and principle payments are the contractual obligation to the firm. It is risky in the viewpoint of the shareholders.

2.3.3 Factors Affecting Capital Structure

Capital structure of different types of firms varies widely. There are no hard and fast rules about what percentage of capitalization should be represented by bonds and debentures and what should be of equity shares and preference factors affecting capital structure revolve principally around the adequacy and stability of earnings. Following are factors which affect the capital structure.

1. Cost of Capital: The Impact of financing decisions on the overall cost of capital should be evaluated and the criteria should be to minimize the overall cost of capital or to maximize the value of the firm (Pandey; 1988).
2. Assets Structure: Firms whose assets are suitable as securities for loans tend to use debt heavily. Borrowed capital should not exceed a reasonable percentage of fixed assets (Batty; 1963).
3. Flexibility: The Company's desire for flexibility in future financing decisions also affects the capital structure of the company. Therefore the company should compare the benefit and cost of attending the desired degree of flexibility and balance the properly. (Schwartzman and Ball; 1977).
4. Control: If management has voting control over the company and is not in a position to buy any more stock, debt, may be a choice for a new financing. On the other hand, management group that is not concentrated abut voting control may decide to use equity rather than debt.
5. Profitability: The firms with very high rate of return on investment use relatively little debt. Their rate of return enables them to do most of their financing with retained earnings.
6. Taxes: Interest is deductible expenses while dividends are not deductible. Hence the higher a firm's tax rate, the greater is the advantage is using debt.
7. Interest rate: This affects the choice of securities to be offered to investors. High interest rate makes financing costly. When funds are obtained easily and cheaply, there is greater attitude for choice of types of security to be used.
8. Operating leverage: The Company with a high level of earnings before interest and taxes can make a profitable use the high degree of leverage to increase return on the shareholder's equity.

9. Flotation costs: Flotation cost is incurred only when the funds are raised. The cost of floating a debt is less than cost of floating and equity issue. This may encourage a company to use debt than issue equity shares.
10. Market condition: Conditions in the stock and bonds market undergo both long and short term changes which can have an important bearing on a firm's optimum capital structure.
11. Growth rate: Faster growing firm's must rely more heavily one external capital. Other factors are stability of sales, cash flows ability of a company, nature of industry and capital requirements etc.

2.3.4 Optimal Capital Structure

The overall cost of capital is minimized; theoretically at least. When the firm reaches its optimum capital structures it strikes a balance between the risk and return and thus maximizes the price of the stock.

- There is no such thing as the model capital structure for all business undertakings. One way of planning the capital structure is to make it fit into a model complied from a number of different experiences that may have been drawn from the historical ratio of the firm. (Kuchal; 1977).
- Optimum capital structure can be properly defined as that combination of debt and equity that attains the stated managerial goals maximization of the firm's market value, and which minimizes the firm's cost of capital. As the existence of an optimum capital structures implies the simultaneous optimization of both the cost of capital and the firm's market value, occupies a central position in the theory of financial management (Phillippatos, 1974).
- An optimum capital structure would be obtained at the combination of debt and equity that maximizes the total value of the firm (value of shares plus value of debt) or minimizes the weighted average cost of capital (Pandey, 1999).
- Firm has certain structure of assets, which offers net operating earnings of a given size and quality and gives a certain structure of rates in the capital market, there is some specific degree of financial leverage at which the market value of the firm's securities will be higher (or the cost of capital will be lower) than at any other degree of leverage (Soloman, 1963).

Some of important objectives of the optimal structures are as follows:

- To maximize return on equity capital
- To minimize cost of capital
- To minimize risk
- To increase flexibility
- To maintain control power.
- To employ high grade security

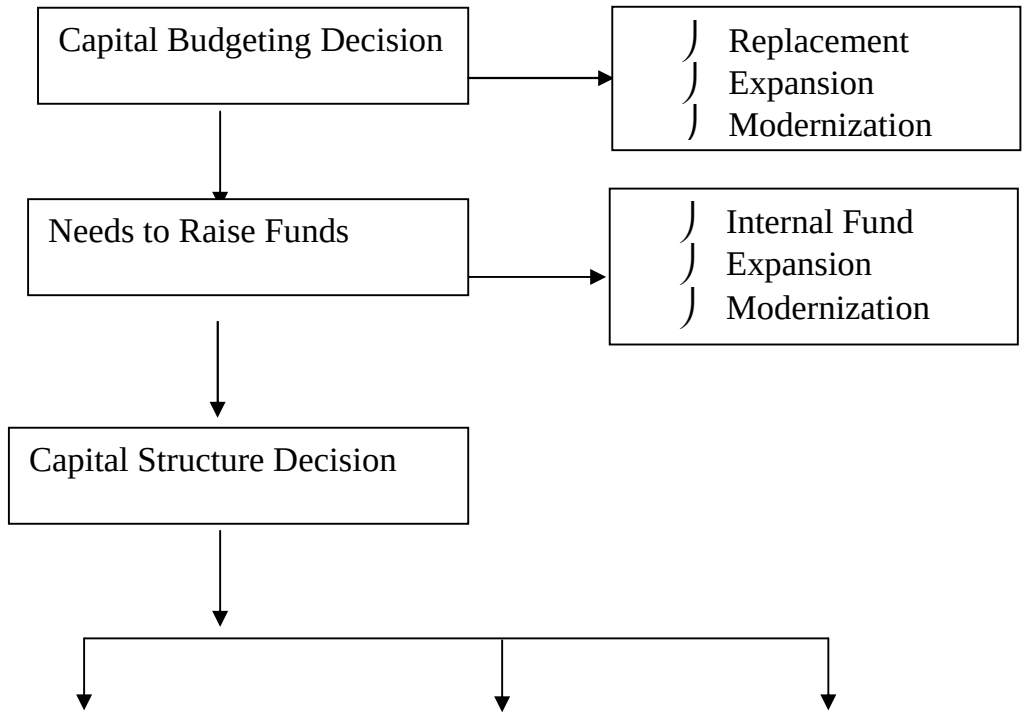
2.3.5 Capital Structures Decision

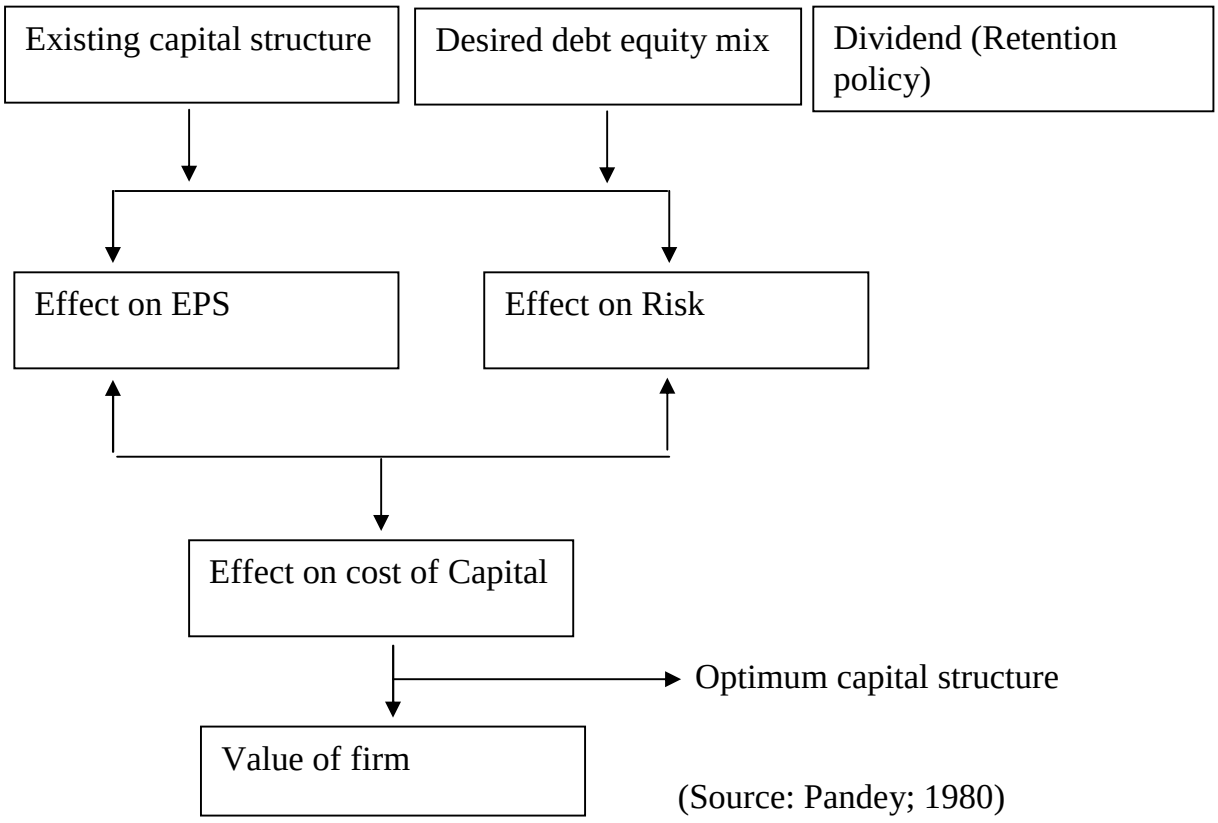
A Capital structure with a reasonable proportion of debt and equity is called optimum capital financing mix of optimal capital structures. Since, a proper balance between risk and return to stockholder is necessary, the financing of capital structure decision is a significant managerial decision as its influences the shareholders return and risk. The firm at the time of its establishment and promotion requires finance and a capital structure decision is involved. (Van Horne, 1997).

A process of capital structure decision is shown in figure below.

Figure 2.8. Capital Structure

Capital Structure Decision





(Source: Pandey; 1980)

According to the above capital structure decision chart, demand for funds generates a new capital structure. Since a decision has to be made as to the equality and forms of financing, the decision will involve an analysis of the existing capital structure and the factor which will govern the decision at the present. The dividend decision bearing on the capital structure may affect its debt equity mix. The debt equity mix has implication for the shareholder's earning and risk which in turn will affect the cost of capital and the market value of the firm.

2.4 Review of Related Studies:

2.4.1 Review of journals & articles

This section is devoted to review of important empirical works, concerning capital structure and cost of capital since 1958 till 2011. There are numerous studies in capital structure. So, it is out of the scope of this study to survey and review all the empirical work extensively and give here in detail. Therefore, some important studies and their findings are presented. In this section, review will be made on the foreign studies.

The Modigliani and Miller's Study: Modigliani F and Miller M.H., the cost of capital, corporation finance and the theory of investment. American economic review, XLVIII, June 1958

In their first study, MM used the previous works of Allen and Smith in support of their independence hypothesis. Allen's study consisted of an analysis of the relation between security yields and financial structure for 43 large electric utilities, which is based on average figure for the year 1947 and 1948, while smith designed his study of 42 electric utilities.

In the first part of their work MM tested their proposition I, the cost of capital is irrelevant to the firm's capital structure by correlation after tax cost of capital with leverage B/V, they found that the correlation co-efficient is statically insignificant and positive in sign.

In the second part of their study, they tested their proposition II the expected yield on common share is linear function of debt to equity ratio. The second part of their study is consistent with their views i.e. if the cost of borrowed funds increases, the cost of equity will decline to offset this increase.

MM conducted the second study in 1963, correcting their original hypothesis for corporate income taxes and expected cost of capital to be affected by leverage of its tax advantage or not. For this they conducted the mathematical analysis regarding the effect of leverage and other variable on the cost of capital, they found that the leverage factors are significant only because of the tax advantage involved. (Miller, M.H and F. Modigliani, Estimates of the capital to Electric Utility Industry, 1954-1957, American Economic Review , 1966).

Masulis (1980) study was concerned to exchange offers, or swaps. In an exchange offer or swap, one class of securities is exchanged for another and it does not simultaneously effect on the assets structure because of no cash involvements. For a sample containing 106 leverage-increasing and 57 leverage-decreasing exchange offers for the period 1962-1976, he found highly significant announcement effects. For the *Wall Street Journal* announcement date and the following day, the announcement period return was 7.6% for leverage-increasing exchange offers and the return was -5.4% for leverage-decreasing exchange offer. He directly examined a

sample of 18 nonconvertible debt issues without any covenants to protect against the issuance of new debt with equal seniority. The announcement period return was observed -0.84% and it was statistically significant. He observed 3.3% two-day announcement return for a sample of 43 preferred-for-common stock exchange offers, and 3.6% return for 43 debt-for-preferred exchange offers. From his cross-sectional study, he concluded that stock prices are positively related to leverage changes because a gain in value induced by debt tax shield and a positive signaling effect; and leverage increases induced wealth transfers across security classes with the greatest effect on unprotected convertible debt.

Masulis' finding were consistent with capital structure theories which explain that there is a valuable tax shield on increased leverage; debt holders' wealth is being expropriated by shareholders in leverage-increasing offers; and higher leverage is a signal of management's confidence in the future of the firm, however the empirical evidences were not strongly supported the bondholder expropriation hypothesis.

Sharma and Rao (1967) tested the MM hypothesis that after allowing for the tax advantage from the interest paid on debt the value of a firm is independent its capital structure on the data of 30 engineering companies from Indian engineering industry. In this cross- sectional study for the year 1963, 1964 and 1865 they concluded that debt has non tax advantages and investor prefer corporate to personal leverage. So, it can be concluded that value of firm rises up to leverage rate considered prudent.

They found the co-efficient of debt variables to be more than‘t’ the corporate income tax. They introduced debt as a separate independent variable. They used two stages least square as a method of arriving at the true expected future earnings.

Poudyal S: Capital Structure; It’s impact on value of a firm, seminar on Emerging Issues and Challenges in Corporate Finance in Nepal, Research Paper Submitted to Faculty of Management, TU, Kathmandu, Nepal, 2002.

A study on Capital structure: Its impact on value of a Firm; an article by Sudhir Poudyal concentrated to examine the interrelationship between the objectives of achieving an optimal capital structure and to provide conceptual framework for the determination of the optimal capital structure.

For this, a hypothetical firm is constructed and different assumptions are laid down to analyze the effect of capital structure. Various statistical and financial tools like ratio analysis are used to extract reasonable figure for the hypothetical firm. It is observed that the minimum weighted average cost of capital, maximum value of the firm and price per annum per share are attended at debt ratio of 30%.

Furthermore, if there is flexibility to select capital structure in any proportion, optimal capital structure range from 30% to 40%. An optimal capital structure would fulfill the interest of equity shareholder and financing requirement of a company as well as other concerned groups.

Rao and Rao (1975) found the negligible positive impact of corporate income tax on corporate debt policy of manufacturing sector in India. Mishra (1978) showed that the evidence in favor of the tax avoidance hypothesis for sugar, Tobacco, trading Industries and Aggregate Corporate Sector of India. Chakarborty (1975) examined the effect of firm's characteristic on capital structure and found that negative association of debt and equity ratio of leverage, retained earnings, profitability scaled by capital employed and corporate tax and positive association with size, profitability scaled by sales and capital intensiveness measured by gross fixed assets to sales. Rao (1979) found the adverse effect of profitability on debt equity ratio. Pandey (1979) observed the adverse relationship between the capital structure and cost of equity.

Pandey (1981) study is concerned with the test of relationship between the cost of capital and leverage, effect of leverage, cost equity and, effect of tax deductibility on cost of capital in Indian context. In the cross- sectional analysis of 131 observations drawn from Cotton, Chemical, Engineering and Electricity industries for the years 1986, 1969 and 1970, he found that the conclusion of MM independent hypothesis does not hold reliable conclusion especially in the context of India. Matta (1984) found the negative relationship between debt, equity ratio and growth rate. Garg (1988) suggested that there existed the relationship between business risk and debt equity ratio. Pandey (1904) did the attitude survey of the practicing managers of 30 Indian companies and drew the conclusion that Indian practicing manager have the concept of optimal capita structure and it should be maintained by every company.

Shrestha (1985) on the study concluded that the debt- equity ratio should neither be highly levered to create too much financial obligations that lie beyond capacity to meet nor should be much lower low levered to infuse operational strategy to bypass responsibilities with out performance. He used ratio analysis as the tool of analysis and found the sample public enterprise. He further added that in many instances adhocism become the basis of capital structure and most of them want to eliminate debt if possible to relieve financial obligations.

2.4.2 Review of Thesis

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

Subedi (2005) concluded that more the fixed deposit increase, the more the long term investment becomes possible. Bank becomes more successful and competent as per its capacity to collect the fixed deposit. So, fixed deposit should be collected more, as possible.

Kandel (2008) recommended that HBL and BOK should follow the theoretical aspects of the capital structure management or give bit more attention in this matter and try to manage their activities accordingly.

Malik (2009) recommended the capital structure decisions are not found be to be considered properly by the companies in Nepal. It affects the value of the firm and overall cost of capital so every investment and financing decision of the company should be taken by considering the capital structure of the firm. The concerned authorities should give continuity in providing both conceptual and practical training to the staff to enhance their knowledge, skill and competency.

Bista (2009) concluded that the mix of capital structure, which leads to the maximum value and minimum cost of capital optimal capital structure. A high portion of equity provides a large margin of safety for them. The company should make such policy to earn high amount of profit from the sales revenue by increasing operation efficiency.

2.5 Research Gap

This study is different in the sense that the sample companies are totally from the above previous studies. The study totally revolves around the banking and the

named of sample commercial banks. This study is done considering the data of five year (2008/09 – 2012/13) of all the sample banks. This study tried to analyze and evaluate the relationship of capital structure with various variables on like, leverage ratio, cost of capital, and cost of equality and so on. I used SPSS programmed and calculate the statistical tools which are used in multiple regressions. As the above studies are also related with capital structures ,they are mostly done by taking two sample banks and some other are done by taking different sectors combining banking, manufacturing and service sectors. This analysis is not appropriate as each sector have different capital structure. At last this study will be different from the above in terms of sample companies, data presentations as well as statistical tools used for interpretation and analysis of data.

CHAPTER–III
RESEARCH METHODOLOGY

Research methodology is a way to solve the research problem systematically. This chapter includes research design, nature and source of data. Population and sample data collection and procedure and method of analysis. To accomplish the goal, this study follows the research methodology described in this chapter.

3.1 Research design

This empirical study attempts to analyze the capital structure patterns and determinants of Nepalese firms. It tries to analyze and describe the magnitude and direction of relationship between leverage (dependent variable) and firm specific attributes viz.; non-debt tax shield, assets structure, profitability, firm size, growth opportunities and earning volatility (independent variables). Hence, this empirical study has followed both analytical and descriptive research design. Furthermore, it also follows the field research method to study capital structure from managerial perspective.

3.2 Nature and source of data

This study is based on accounting data of firms listed in Nepal Stock Exchange Limited (NEPSE). The required data have been extracted from annual reports and financial statements of the firms available in Securities Board (SEBO) database and NEPSE database. Hence, this study mainly relies on secondary data.

3.3 Population and Sample

Altogether there are 30 commercial banks. The limited time and unavailability of the relevant data has forced me to make research on the few commercial banks functioning all over the kingdom. Most of their stocks are trade activity in the market. Out of them, commercial banks samples on the basis of convenience sampling are as follows:

1. Nepal SBI Bank Ltd
2. Everest Bank Ltd
3. Nepal investment Bank Ltd

4. Himalayan Bank Ltd.

3.4 Method of data analysis

As mentioned earlier this study is confined to analysis of capital structure of the few selected commercial bank in Nepal. To research the objective the collected data are computed and analyzed using financial and statistical tools. The various tools applied in this study have been briefly presented below.

3.4.1 Financial analysis

Financial tools are used to examine the financial performance i.e. strength and weakness of bank. In this study financial tools like ratio analysis and financial statement analysis have been used. The analysis of financial mix is performed by using ratio analysis. It's a powerful tool of financial analysis. A ratio analysis is defined as "The indicated quotient of two mathematical expressions and as the relationship between two or more thing." (Webster's new colloquia Dictionary; 1975). It is used to interpret the financial statements so that the strengths and weakness of a firm as well as its historical performance and current financial conditions can be determined.

Capital structure ratio indicates the proportion of debt and equity in financing the firm's assets. It is concerned with the long term solvency of a firm. Concerned with the long-term solvency of a firm, capital structure ratio is calculated to measure the financial risk and firm's ability of using the debt for the benefit of the shareholders. "The choice between debt and equity depends on the cost risk and control. The cost of capital is the minimum rate of return a project must generate to be acceptable to the shareholders. Charges in the debt equity mix after the riskiness of the firm's earnings and with that the cost of two sources of financial capital are affected. Cost or risk consideration would favor equity however maintaining control can be pivotal whenever capital structure decision is being made and the choice between debt and equity can at times tilt in favors of debt." (Glen and pinto, 1995).

I. Debt to Equity Ratio

This ratio is a measure of the relative amount provided by lenders and owners. It is also known as "External internal Equity Ratio." It is calculated according to the following.

Formula,

$$\text{Debt Equity Ratio} = \frac{\text{Amount of Debt}}{\text{Amount of Equity}}$$

This ratio indicates the cushion of ownership funds available to debt holder. It gives on idea of the amount of capital supplied to a firm by internal funds or owners. An average debt to equity ratio of 1:1 is acceptable.

II. Debt Ratio

The debt ratio is defined as total debt divided by total assets. It indicates to percentage of assets that are financed through debt. It is calculated as under

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

This ratio should be 1:2 or 0.5:1. A ratio above 1:2 or 0.5:1 implies that lenders and creditors were providing more finance than ordinary shareholders and that too without expectations of a share in any surplus as compensation to creditors in extending credit. A very low ratio can cause worry to shareholders as it means company is not using debt to best advantage.

III. Interest Coverage Ratio

It is also known as time interest Earned ratio. “This ratio measures the debt servicing capacity of a firm is so far as fixed interest on long term loan is concerned. The interest coverage ratio is the sum of net profit interest and taxes divided by interest charges.

$$\text{Interest Coverage Ratio} = \frac{\text{Net Profit before interest and tax}}{\text{Interest Charge}}$$

This ratio shows how many times the interest charges are covered by fund that the ordinarily available to pay the interest charges. A high ratio is desirable but too high ratio indicates that the firm is very conservative in using debt. A lower ratio indicates excessive use of debt or inefficient operations.

IV. Earning Per Share (EPS)

A part form return the profitability of a firm from the point of view of the ordinary shareholders is earning per share. It measures the profit available to equity shareholder per share.

EPS = Net Profit after tax – Pref. Dividend

No. of equity share

V. Price Earnings Ratio (P/E Ratio)

Price- Earnings ratio indicates investor's expectation about the growth of the firm's earnings.

P/E Ratio = Market price per share

Earning per share

VI. Return on Total Assets (ROA)

This ratio measures the productivity of the assets. Higher ratio shows the higher return on the assets used in the business there by indicating effective use of the resources available and vice- versa. The formula for computation of this ratio is as follow.

ROA = Net Profit after tax

Total assets

VII. Return on Share Holder's Funds or Equity (ROSE)

This ratio is ascertained for measuring the efficiency of the investment made by the shareholders in the business on the basis of the relationship between shareholder's fund and net profit;

ROSE = Net Profit after tax

Shareholder fund

VIII. Net Income Approach (Overall Capitalization Rate)

The overall cost of capital is measured by dividing net operating income by the value of firm is the book value debt and market value of equity overall cost of capital (*Ko*)

Ko = Earning Before Interest and tax (EBIT)

Total value of firm (Vo)

IX. Net Operating Income Approach (Equity Capitalization Rate)

This approach argues that the value of the firm remains constant to the degree of leverage and equity capitalization rate tends to increase with the degree of leverage equity capitalization rate (*Ke*) .

$$Ke \text{ X} \frac{EBIT \text{ Z} I}{S} or \frac{EPS}{MVPS}$$

X. Leverage analysis

The degree of financial leverage (DFL) as part of leverage analysis also reflects the leverage if the firm has similar as above ratios. The degree of financial leverage analyzes the burden of interest expenses and financial risk of the company. The degree of financial leverage (DFL) is defined as the percentage change in EPS due to a given percentage change in EBIT or this is a relationship between EBIT and EBT in this study. Following relationship will be used.

$$\text{DFL} = \frac{\%\, change\, in\, EPS}{\%\, change\, in\ EBIT} = \frac{\%\, change\, in\, EBT}{\%\, change\, in\, EBIT}$$

The higher ratio of DFL indicates the higher financial risk as well as higher fixed charges of the company and vice-versa.

3.4.2 Statistical analysis

Statistical and Research cannot be separated whenever research work is carried on statistic is most to have output of the research. To achieve the objective of the study, some important statistical tools such as mean, standard deviation, coefficient of variance, of correlation, regression analysis of important variables has been used which are as follows:

a. Arithmetic Mean ($\bar{\varepsilon}$)

The most popular and widely used measure of representing the entire data by one value is called the mean. The value is obtained by adding together all the items and dividing this total by the no of items.

$$\bar{\varepsilon} = \frac{\varepsilon_1 \Gamma \varepsilon_2 \Gamma ..... \Gamma \varepsilon_n}{n} \text{X} \frac{\phi X}{n}$$

Where, $\phi\varepsilon$ = Sum of all values of the variables

b. Standard Deviation (S.D.)

The standard deviation measures the absolute dispersion or variability of a distribution the greater the amount of dispersion or variability the greater the standard deviation the greater will be magnitude of the deviations of the values from their mean and vice-versa.

$$\text{S.D.} = \sqrt{\frac{\phi f x \mathrm{Z} \bar{x} \text{Å}}{n}}$$

c. Correlation Coefficient (r)

Correlation coefficient is calculated of relationship between more than two variables. When a change in the value of one variable is accomplished by the change in value of the other two variables are said to have correlation. The study used Karl Pearson's correlation coefficient. The correlation coefficient between two variables x and y usually denoted by r^{xy} is a numerical measure of linear relationship between them.

$$r \mathrm{X} r_{xy} \mathrm{X} \frac{\phi xy}{\sqrt{\phi x^2 \phi y^2}}$$

Where, $x \mathrm{X} x \mathrm{Z} x_1, x_1 \mathrm{X} \frac{\phi x}{n}$

$$Y \mathrm{X} y \mathrm{Z} y_1, y_1 \mathrm{X} \frac{\phi y}{n}$$

d. Probable Error (P.E.)

The probable error of the coefficient of correlation helps in interpreting its value. The probable error helps to determine reliability of computed correlation coefficient so far as it depends on the condition of random sampling. The probable error is defined by

$$\text{P.E.} = \frac{0.6745 \text{ß} 1 \mathrm{Z} r^2 \text{Ã}}{\sqrt{n}}$$

It can be interpreted to know whether it calculated value of is significant or not in the following way.

- If r <PE there is no evidence of correlation i.e. r is not at all significant
- If r> 6PE the existence of correlation is practically certain i.e. r is significant.

- The P.E of correlation may be used to determine the limits with in which the population correlation coefficient lies. The limit of the population correlation is r ± P.E.

e. Regression Analysis

Regression is the measures of the average relationship between two or more variables in terms of the original units of the data. In other words Regression analysis is a statistical device which is widely used in almost all research work in order to estimate the unknown values of one variable from known value of other variables. In this study includes simple and multiple regression models to examine the empirical relationship between the variables.

I. Simple Regression Analysis

Simple regression is the estimation of unknown value or prediction of one variable from known value of the other variables.

$$Y = a+bx$$

II. Multiple Regression

Generally the form of multiple regression equation with two or more independent variable say $\varepsilon_1, \varepsilon_2 \ldots\ldots\varepsilon_n$ is as follows:

$$\varepsilon_o = a + b_1\varepsilon_1 + b_2\psi_2 + \ldots\ldots + b_n\psi_n$$

Coefficients $b_1, b_2 \ldots\ldots b_n$ in the above equations are commonly described as regression coefficient a value of 'a' represents regression constant. The above multiple regression equation depends upon the number of independent variable i.e. $\varepsilon_1 \ldots\ldots\varepsilon_n$

(a) Regression constant

The value of 'a' in regression model indicates the average level of dependent variable when independent variable is zero. In other words, regression constant 'a' represents the mean or average effect on dependent variables if other variables remain constant. It is also called intercept value.

(b) Regression constant

The regression coefficient of each independent variable indicates the marginal relationships between dependent variable and independent variables. Alternatively, the coefficient describes how the changes of independent variables affect on the value of dependent variable.

CHAPTER-IV

DATA PRESENTATION AND ANALYSIS

This is the most important chapter of the study. This chapter constitutes the most crucial part of the study. It provides mechanism for meeting the basis objectives stated earlier in the first chapter of this research. The research has followed the, methodology described in the third chapter in order to attain the objectives. Thus, application of major variables taken into account for the purpose study are total Debt and Total Assets, EBIT and EBT, Net profit after tax and Shareholder's Equity, EBIT and Interest, Net Income and Net Operating Income approach, Co-efficient of Correlation analysis of different variables of Sample 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 position are dangerous from the firm's point of view. So, an enlightened management should, therefore, maintain right capital structure to meet its objectives.

4.1 Financial analysis

The ratio of a firm by themselves does not reveal anything. For meaningful interpretation, the ratios of a firm should be compared with the ratios of similar firms and the international and national standard and industry norms. Such comparison will reveal whether the firm is significant out of line with its competitors. If it is significantly out of line, the firm should undertake a detailed analysis to spot out the troubled areas. The study is conducted using each of the bank's financial statement for the last six fiscal years. Hence various as well as statistical tools are used to analyze the compatibility of the banks.

4.1.1 Calculation of Debt Ratio

Debt ratio shows what proportion of the capital assets is financed by outside funds. When successfully employed, this ratio benefits the shareholders by raising their expected return-earning per share. High ratio shows bank's successes in exploiting debt to be more profitable as well as it also include its riskier capital structure and vice-versa.

Table 4.1.1

Debt Ratio of Sample Banks

Year / Banks	2008/9	2009/10	2010/11	2011/12	2012/13	Mean	S.D	CV(%)
EBL	0.93	0.93	0.92	0.93	0.93	0.93	0.005	0.54
HBL	0.95	0.92	0.91	0.91	0.91	0.92	0.018	2.00
NSBI	0.94	0.93	1.00	0.94	0.94	0.95	0.025	2.60
NIBL	0.92	0.91	0.90	0.91	0.90	0.91	0.006	0.67

Source: Annual report and websites of concerned banks

The above table 4.1.1 has been shown in the figure 4.1.1

Figure 4.1.1

Debt ratio of Sample banks.

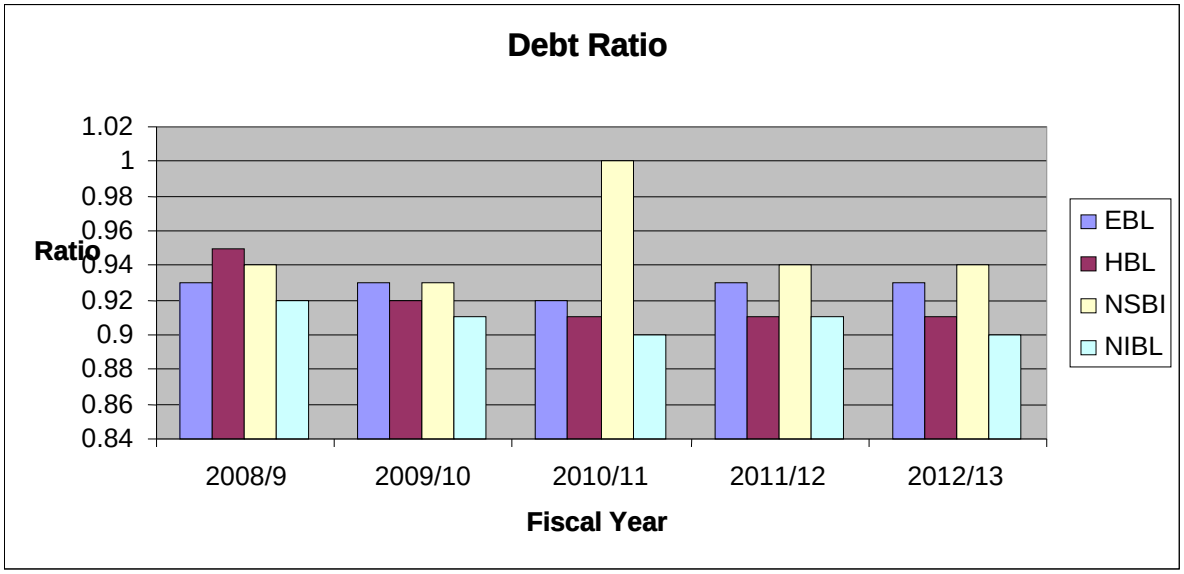


Table 4.1.1 & Figure 4.1.1 indicates debt ratio of the Sample banks over the study period. In terms of total debt to total assets revels that the Sample banks are highly leveraged (i.e. more than 90 percent in average) on five year's time horizon. It means the assets of Sample banks have been financed more funds collected from creditors.

NSBI Banks has the highest average ratio of 95 percent in comparison to the lowest of 91 percent of NIBL. In other words, creditor's finances are 95 percent of total bank's fund and remaining 5 percent in shareholder's claim. The ratio of NSBI has fluctuating trend over the study period. EBL has average ratio of 93% and EBL less than that of NSBI.

The ratio of bank is slightly fluctuating trend, the creditor's margin of safety is very low, which means they have high risk. The banks are found using higher debt capital to finance their assets.

The standard deviation is 0.005, 0.018, 0.025, 0.006 and CV is 0.54, 2.00, 2.60, and 0.67 percent respectively of EBL, HBL, NSBI and NIBL. The CV of EBL is smallest among sample banks that mean the ratio of EBL has more consistency than other.

In terms of total debt to total assets reveals that the sample banks are highly leveraged (i.e. more than 90 percent in average) on five year time horizon. It means the assets of sample banks have been financed more funds collected from creditors.

4.1.2 Calculation 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 obligation to creditors in relation to the funds invested by owners. A high debt-equity ratio implies that a proportion of long-term financing is from debt sources that are the firm is using a great deal of financial leverage. Long-term creditors generally prefer to see a modest debt-equity ratio since it means great protection and a greater stake in the company's future for equity holders. The total debt includes current accounts, saving accounts, calls and short deposits, overdraft, fixed deposit, loan and advances and borrowing from other banks. Shareholder's equity or net worth includes paid- up capital, reserve and surplus.

Table 4.1.2

Debt to Equity Ratio of Sample Banks

Year / Banks	2008/9	2009/10	2010/11	2011/12	2012/13	Mean	S.D	CV(%)
EBL	14.24	12.63	11.53	12.36	12.62	12.68	0.983	7.75
HBL	11.42	16.75	9.79	10.74	10.54	11.85	2.802	23.65
NSBI	16.43	14.02	14.50	17.16	16.06	15.63	1.325	8.48
NIBL	11.07	10.05	9.13	9.87	9.42	9.91	0.744	7.51

Source: Annual report and websites of concerned banks

The above table 4.1.2 has been shown in figure no 4.1.2

Figure 4.1.2

Debt to Equity Ratio of Sample Banks

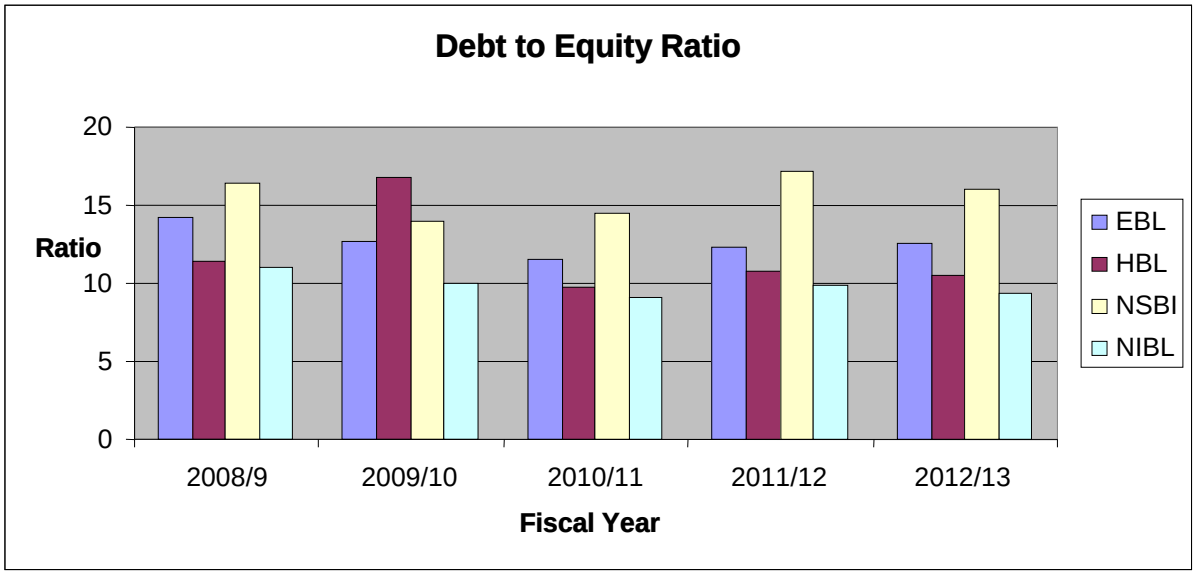


Table 4.1.2 and figure 4.1.2 show the debt to equity ratio of sample banks over the study period. EBL has D/E of 12.68 times on an average. It means debt capital financing is more than 12.68 times higher than shareholder's equity. Highest D/E is in the fiscal year 2008/9 and lowest in the fiscal year 2010/11 with 11.53 times.

HBL has an average of 11.85 time D/E ratio. It means debt capital financing is more than 11.85 times higher than shareholder's equity. NSBI has average 15.63 times D/E ratio. It means NSBI debt capital financing is 15.63 times higher than equity financing.

NIBL has an average 9.91 times of D/E ratio. It means debt capital financing is more than 9.91 times of equity. NIBL is able to maintain it D/E consistent than the other banks.

The standard deviation is 0.983, 2.802, 1.325, 0.744 and CV is 7.75, 23.65, 8.48L and 7.51 percent respectively for EBL, HBL, NSBI and NIBL.

NSBI has the highest average Debt equity ratio. The coefficient of variation of NIBL is the lowest among all.

4.1.3 Calculation of Interest Coverage Ratio

The interest coverage ratio also names 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 number of times the

interest charges are covered by funds that are ordinarily available for their payment. Too high or too low ratio 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 4.1.3

Interest Coverage Ratio

Year / Banks	2008/9	2009/10	2010/11	2011/12	2012/13	Mean	S.D	CV(%)
EBL	0.96	0.81	0.56	0.54	1.06	0.78	0.234	29.80
HBL	2.10	1.37	1.42	1.54	1.71	1.63	0.295	18.09
NSBI	1.54	1.40	1.00	1.27	1.49	1.34	0.216	16.11
NIBL	1.78	1.76	1.49	1.43	2.09	1.71	0.262	15.36

Source: Annual report and websites of concerned banks

The above table 4.1.3 has been shown in figure 4.1.3

Figure 4.1.3

Interest Coverage Ratio

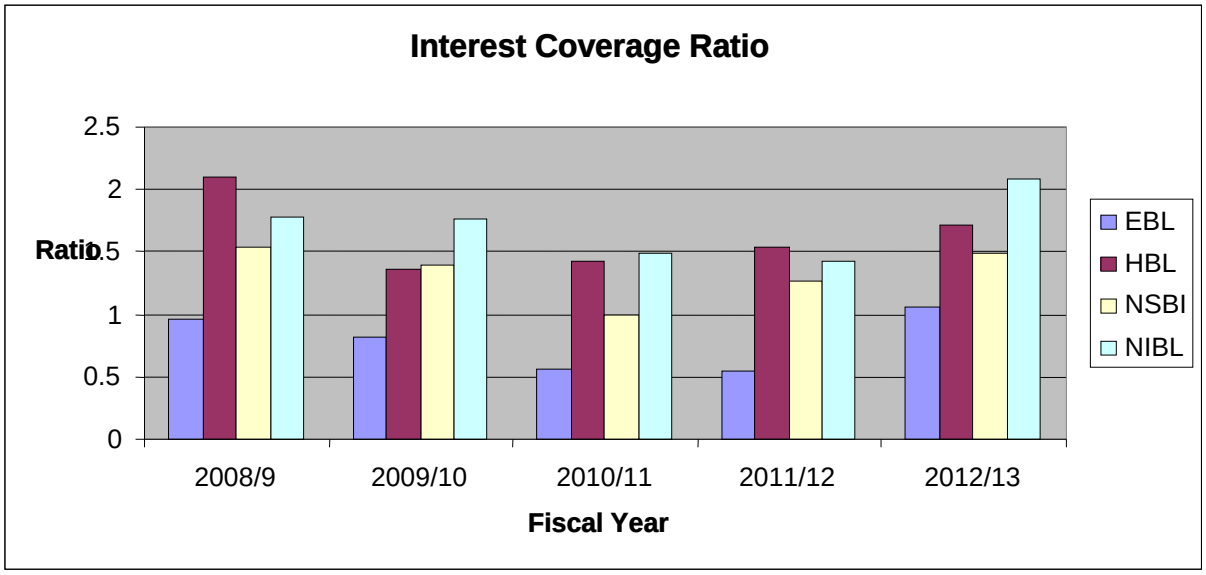


Table 4.1.3 and figure 4.1.3 shows the effect of interest coverage ratio of Sample banks over five years study period. NIBL is able to maintain the highest interest coverage ratio than other banks. Its average interest coverage ratio during five

year's period is 1.71 times. EBL has average interest coverage of 0.78 times, which is lowest among the Sample banks.

NSBI has interest coverage ratio of 1.34. Interest coverage ratio of NSBI shows the fluctuating over the study period. The highest ratio of the year 2008/9 is 1.54 and lowest ratio is 1 in the year of 2010/11. HBL has average ratio of 1.63. The highest ratio of the year 2008/09 is 2.10 and lowest ratio is 1.37 in the year 2009/10. The standard deviations are 0.234, 0.295, 0.216, 0.262 and CV is 29.80, 18.09, 16.11, and 15.36.

The computed interest coverage ratio of both banks in above table shows how many times the interest charges are covered by funds that the ordinary available to pay interest charges. NIBL is able to maintain highest interest coverage ratio than other banks. Its average interest coverage ratio during the five year period is 1.71 times. EBL has average interest coverage of 10.78 times, which is lowest among the Sample banks. But this ratio shows consistent trend. The computed interest coverage ratio of both banks in above table shows how many times the interest charges are covered by funds that the ordinary available to pay interest charges.

4.1.4 Calculation of Degree of Financial Leverage

It is already stated that financial leverage refers to the use of interest bearing debt and preferred stock along with 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 as:

DFL = Percentage Change in EPS/ Percentage Change in EBIT

Or.

DFL = EBIT/EBT

Here, EBIT-I = EBT

Table 4.1.4

Degree of Financial Leverage

Year / Banks	2008/9	2009/10	2010/11	2011/12	2012/13	Mean	S.D	CV(%)
EBL	2.04	2.26	2.82	2.68	1.94	2.35	0.386	16.44

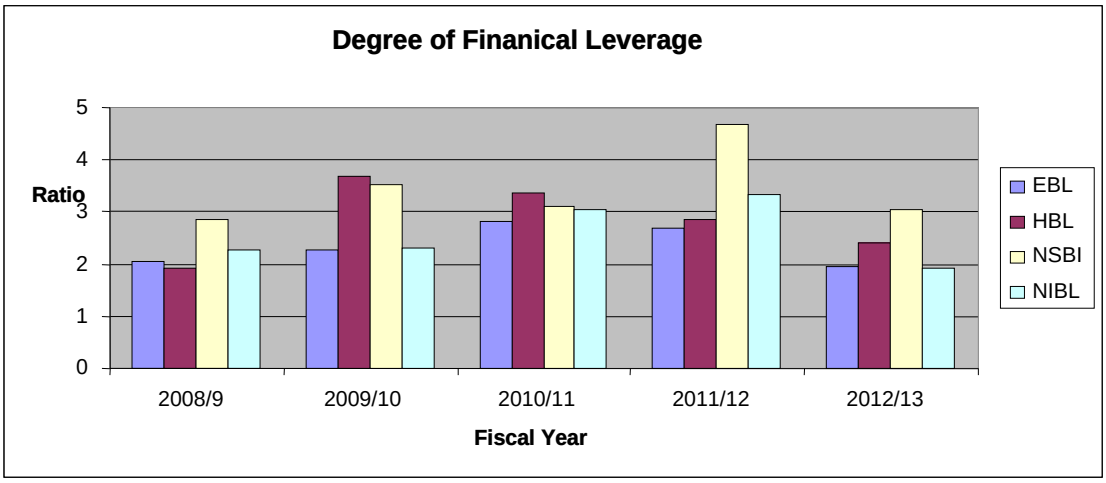
HBL	1.91	3.68	3.38	2.84	2.40	2.84	0.717	25.22
NSBI	2.86	3.53	3.12	4.67	3.04	3.44	0.728	21.14
NIBL	2.29	2.32	3.03	3.33	1.92	2.58	0.581	22.53

Source: Annual report and websites of concerned banks

The above table 4.1.4 has been shown in figure 4.1.4

Figure no: 4.1.4

Degree of Financial Leverage



The average DFL of EBL is 2.35 times. Similarly lowest degree of financial leverage of EBL is 1.94 in 2012/13 and highest 2.82 times in 2010/11. The DFL of EBL is in decreasing trend. Standard deviation and C.V. are 0.386 and 16.44% respectively.

The average DFL of HBL is 2.84.It is lowest in 2008/9, i.e. 1.91 and highest in 2009/10 i.e. 3.68 times. The DFL of HBL is in fluctuating trends' and C.V. of HBL is 0.717 and 25.22% respectively.

. The average DFL of NSBI is 3.44 which is highest among all the banks.. The DFL of NSBI is also in fluctuating trends' and C.V. of NSBI is 0.728 and 21.14% respectively.

The average DFL of NIBL is 2.58. The DFL of NSBI is also in fluctuating trends' and C.V. of NSBI is 0.581 and 22.53% respectively.

The CV of EBL is lowest among all the Sample banks. That means the ratio of EBL is most consistent among all. The CV of HBL is highest among all the banks which show the least consistency.

The degree of financial leverage of EBL has the lowest ratio of 2.35 times on an average, which reflects the bank has lower degree of financial risk. NSBI constitutes higher degree of financial leverage, which represents higher financial risks for the bank.

4.1.5 Calculation of 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 bank's assets; otherwise its survivable is threatened. The ratio explains net income for each unit of assets. Higher ratio indicates efficiency in utilizing its overall resources and vice-versa. Rate of return on total assets is major tool to judge the operational efficiency of a bank. The return on total assets of Sample bank is as follows:

Table 4.1.5

Return on Assets

Year / Banks	2008/9	2009/10	2010/11	2011/12	2012/13	Mean	S.D	CV(%)
EBL	1.73	2.01	2.01	1.95	2.24	1.99	0.181	9.10
HBL	1.91	1.19	1.91	1.76	1.54	1.66	0.304	18.29
NSBI	1.05	1.03	1.01	0.83	1.19	1.02	0.130	12.71
NIBL	1.70	2.21	2.02	1.58	2.62	2.03	0.415	20.49

Source: Annual report and websites of concerned banks.

The above table 4.1.5 has been shown in figure 4.1.5

Figure 4.1.5

Return on Assets

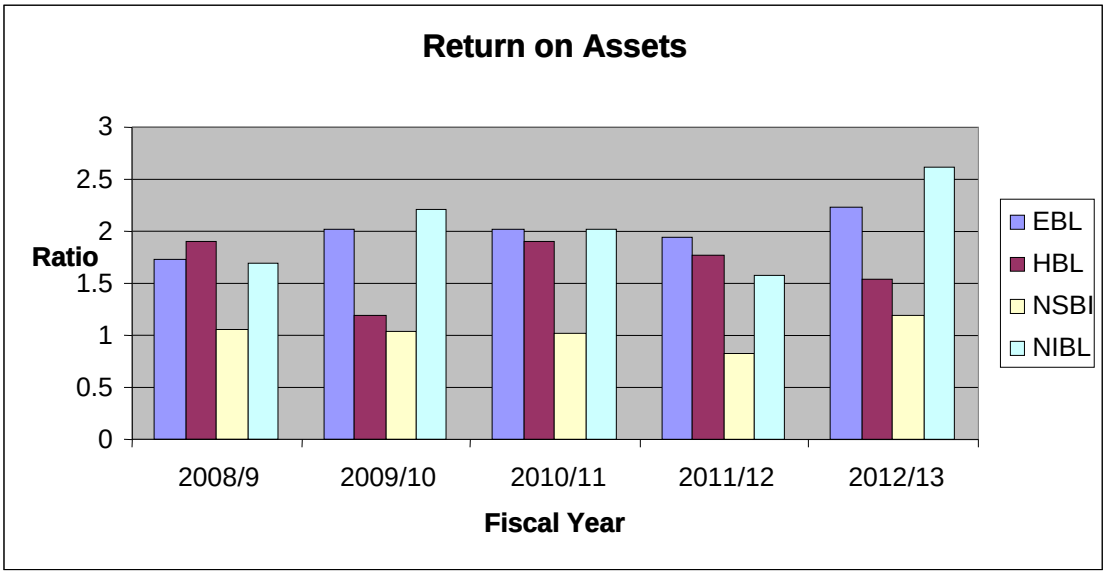


Table 4.1.5 and figure 4.1.5 shows the return on assets of Sample banks over the study period. NIBL has highest average ROA among the Sample bank i.e. 2.03 percent. ROA of NIBL shows the fluctuating trend. Standard deviation and Coefficient of variation are 0.415 & 20.09% respectively. NIBL has better utilized its assets to generate profit than other companies.

Average ROA of EBL is 1.99 percent. In the fiscal year 2008/9 and 2011/12 ROA is below the average and in the fiscal year 2009/10, 2010/11 and 2011/12 is above the average. ROA is in fluctuating trend which doesn't show the performance of these banks is satisfactory. ROA of HBL is not consistent over the study period. HBL has average ROA & SD, CV respectively i.e. 1.66, 0.304, 18.29%.

NSBI has lowest average ROA among the Sample banks i.e. 1.02 percent. In the fiscal year 2008/9, 2009/10, 2010/11, 2011/12 and 2012/13 is 1.05, 0.13, 1.01, 0.83 and 1.19 respectively. Return on total assets of NSBI is fluctuating over the study period. The S.D and CV are 0.130 and 12.71 respectively.

4.1.6 Calculation of Return on Shareholder's Equity

A return on shareholder's equity is the measure of productivity of shareholder's funds. It carries the relationship of return on shareholder's equity. The shareholder's equity includes common share capital, preference share capital and reserve and surplus. Management's objective is to generate the maximum return on 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 interest and value to the present as well as the perspective shareholders and also of great concern to management, which has the responsibility of maximizing the owner's welfare, the ratio equals the net profit after taxes divided by the common stockholder's equity.

Table 4.1.6

Return on Shareholder's Equity

Year / Banks	2008/9	2009/10	2010/11	2011/12	2012/13	Mean	S.D	CV(%)
EBL	26.24	29.85	25.24	26.11	30.47	27.58	2.396	8.69
HBL	22.94	14.02	20.62	20.70	17.81	19.22	3.428	17.84
NSBI	18.28	15.46	15.62	15.02	20.31	16.94	2.279	13.46
NIBL	20.50	24.40	20.42	17.18	27.28	21.96	3.924	17.87

Source: Annual report and websites of concerned banks.

The above table 4.1.6 has been shown in figure 4.1.6

Figure 4.1.6

Return on Shareholder's Equity

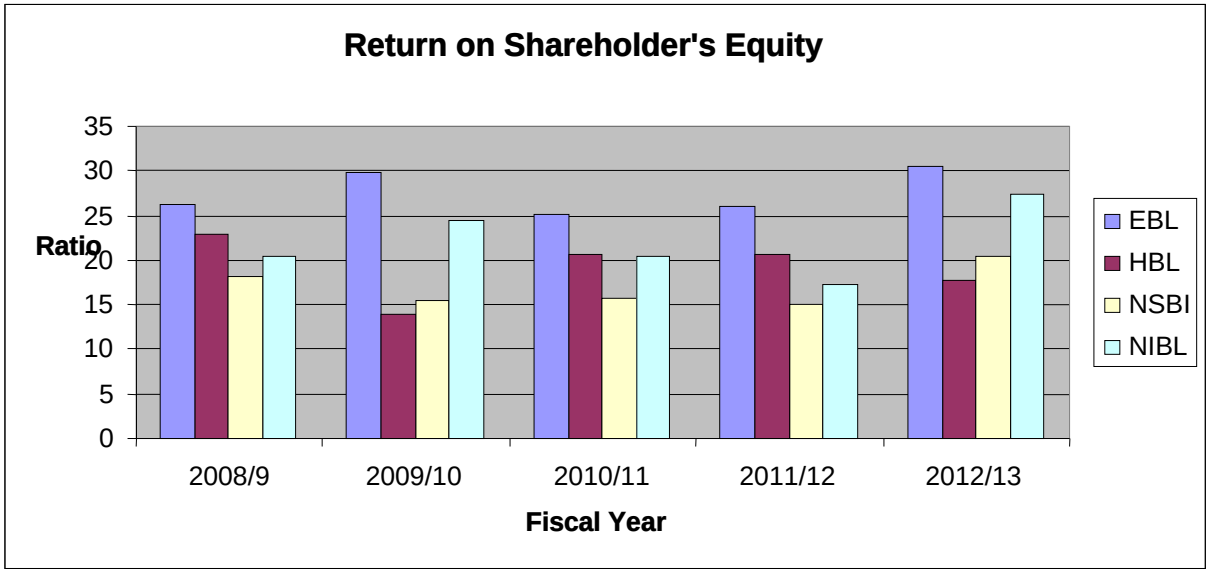


Table 4.1.6 and figure 4.1.6 shows the return on total shareholder's equity over the study period. Among the Sample banks EBL has highest average ROE i.e. 27.58. ROE of EBL is fluctuating trend. Ratio ranges highest of 30.47 in the fiscal year 2012/13 and lowest of 25.24 in the fiscal year 2010/11.

Return on shareholder's equity of HBL ranges highest of 22.94 in the fiscal year 2008/9 to lowest in the fiscal year 2009/10 with 14.02 percent. Average ROE of HBL is 19.22 which mean HBL is able to generate 19.22 percent net profit on its shareholder's equity.

Return on shareholder's equity of NSBI ranges highest of 20.31 in the fiscal year 2012/13 to lowest of 15.02 in the fiscal year 2011/12. Average ROE of NSBI is 16.94 which is least among the Sample banks which shows the weak performance of banks, in the maximizing the shareholder's equity.

ROE of NIBL range from highest of 27.28 percent in the fiscal year 2012/13 and lowest 17.18 in the fiscal year 2011/12. Average ROE of NIBL is 21.96 over the five year period. Here NIBL is able to attain 21.96 percent on the shareholder's equity fund.

The standard deviation is 2.396, 3.428, 2.279, 3.924 and CV is 8.69, 17.84, 13.46, 17.87 respectively of EBL, HBL, NSBI and NIBL.

Among the Sample banks EBL has highest average ROE i.e. 27.58. Average ROE of HBL, NSBI and NIBL are 19.22, 16.94 & 21.96 percent on shareholder's equity fund respectively. ROE of NSBI is least among the Sample bank which shows the weak performance of banks, in the maximizing the shareholder's equity.

4.2 Market Related Ratios

4.2.1 Earning Per Share

Earning per share shows the profitability of the firm on a per share basis; it does not reflect how much is paid as dividend 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 the investors rely heavily on it for their investment decisions. In order to see the strength of the share in the market, EPS of Sample banks are calculated as below.

Table 4.2.1

Earnings per Share

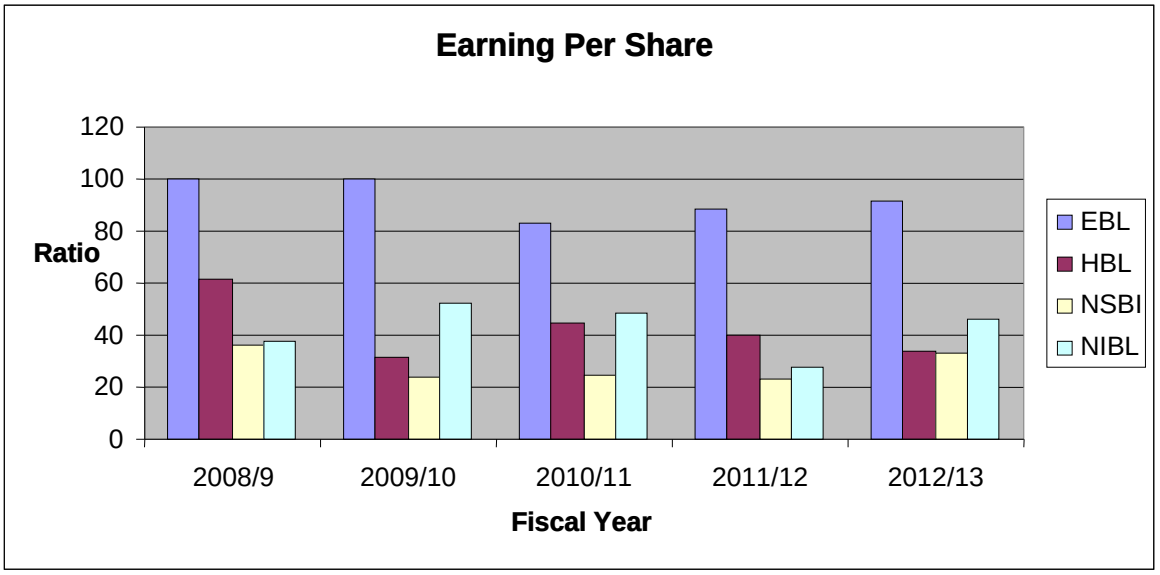
Year / Banks	2008/9	2009/10	2010/11	2011/12	2012/13	Mean	S.D	CV(%)
EBL	99.99	100.16	83.18	88.55	91.88	92.75	7.371	7.95
HBL	61.9	31.8	44.66	39.94	34.19	42.50	11.949	28.12
NSBI	36.18	23.69	24.85	22.93	32.75	28.08	5.993	21.34
NIBL	37.42	52.55	48.84	27.60	46.20	42.52	10.034	23.60

Source: Annual report and websites of concerned banks.

The above table 4.2.1 has been shown in figure 4.2.1

Figure 4.2.1

Earnings per Share



The table 4.2.1 and figure4.2.1 shows the Earning per Share of Sample banks over the study period. Earnings per share of EBL range from highest of R.s 100.16 in the fiscal year 2009/10 and lowest in the fiscal year 2010/11 with R.s 83.18. Average earning per share of EBL is 92.75 which are highest among the Sample banks.

Earnings per share of HBL range from highest of Rs. 61.9 in the fiscal year 2008/9 and lowest in the fiscal year 2009/10 with Rs. 31.80. Average earning per share of HBL is Rs. 42.50 over the study period. Here HBL possess strength on earning per share, which help to maximize the shareholder's wealth.

Average Earning per share of NSBI is lowest among the Sample banks over the study period. Earnings per share of NSBI range from highest of R.s 36.18in the fiscal year 2008/9 and lowest in the fiscal year 2011/12 with 22.93. Earnings per share of NSBI are in fluctuating trend over the study period.

Earnings per share of NIBL range from highest of R.s 52.55 in the fiscal year 2009/10 and lowest of R.s. 27.60 in the fiscal year 2011/12. Average of EPS on NIBL is R.s 42.52 over the study period. Earnings per share of NIBL are in fluctuating trend.

Average earning per share of EBL, NSBI are R.s. 92.75 and R.s 28.08. Earnings per share of EBL are highest among the Sample banks. Here EBL possess strength on earning per share, which helps to maximize the shareholders wealth. Average earning per share of NSBI is lowest among the Sample banks over the study period. Average EPS of NSBI is R.s 28.08 over the study period. Earnings per share of NSBI are in fluctuating trend.

4.2.2 Dividend per Share

Companies generally prefer to pay cash dividend. They finance their expansion and growth by issuing new shares or borrowings. Companies like to follow a stable dividend policy since investigators generally prefer such policy for certain reason. A stable dividend policy does not constitute constant DPS, but a reasonable predicable dividend policy.

Table 4.2.2

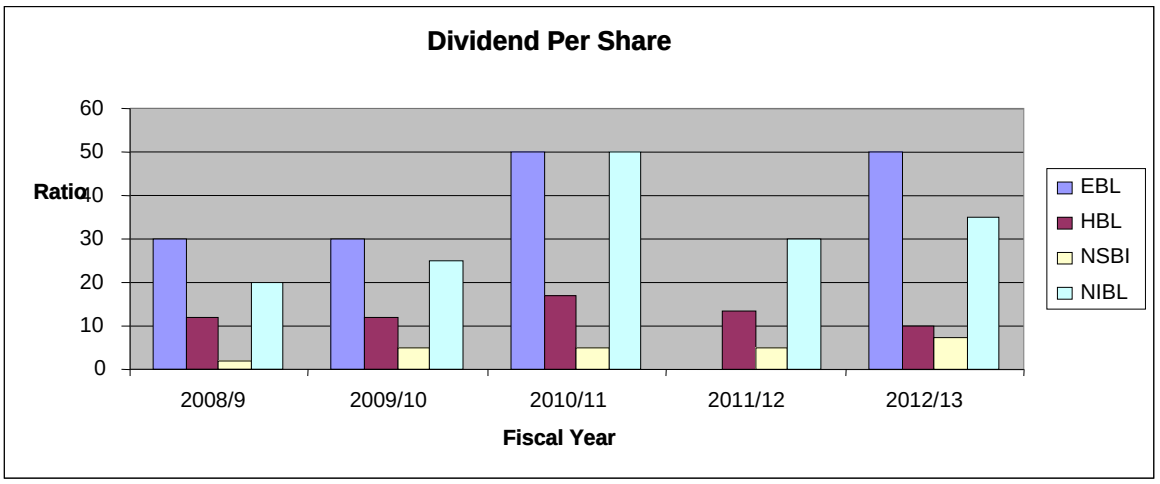
Dividend per Share (In Rs)

Year / Banks	2008/9	2009/10	2010/11	2011/12	2012/13	Mean	S.D	CV(%)
EBL	30.00	30.00	50.00	0.00	50.00	32.00	20.49	64.04
HBL	12.00	11.84	16.84	13.42	10.00	12.82	2.55	19.93
NSBI	2.10	5.00	5.00	5.00	7.50	4.92	1.91	38.87
NIBL	20.00	25.00	50.00	30.00	35.00	32.00	11.51	35.97

Source: Annual report of Sample Banks

Figure 4.2.2

Dividend per Share



The table and figure shows the dividend per share of Sample banks over the study period. Here EBL and NIBL found to be paying relatively more dividend in an average of Rs. 32 each.DPS of EBL is highest in the fiscal year 2010/11 and 2012/13 with Rs. 50 in each fiscal year. The S.D. and CV of EBL is 20.49 and 64.04% respectively.

HBL has average DPS of 12.82. The standard deviation and CV is 2.55 and 19.93 percent respectively. It's distributed bonus share. NSBI found to be paying dividend in average of Rs 4.92. The standard deviation and C.V are 1.91 and 38.87% respectively.

NIBL found to be paying dividend in average R.s 32. Dividend per share of NIBL is in fluctuating trend in the study period. The standard deviation and CV are 11.51 and 35.97 respectively. The issue of bonus share is advantageous in some cases. Sometimes issuing bonus shares reduces market price of share and makes it more attractive to investors.

EBL and NIBL found to be paying relatively more dividend in an over age Rs. 32 among all the Sample banks.

4.2.3 Price Earnings Ratio

Price earnings ratio reflects the price currently being paid by the market for the each rupee of currently reported EPS. In other words, it measures investor expectations and the market appraisal of the performance of a firm. It is an indication

of the way investors think that the bank would perform better in the future. Higher market price suggest that investor expect earnings to grow and this gives a high P/E implies that investors feel that earning are not likely to rise. Price earnings ratio is calculated as below:

P/E ratio = Market price of a share/ Earning per share

Table 4.2.3

Price Earnings Ratio

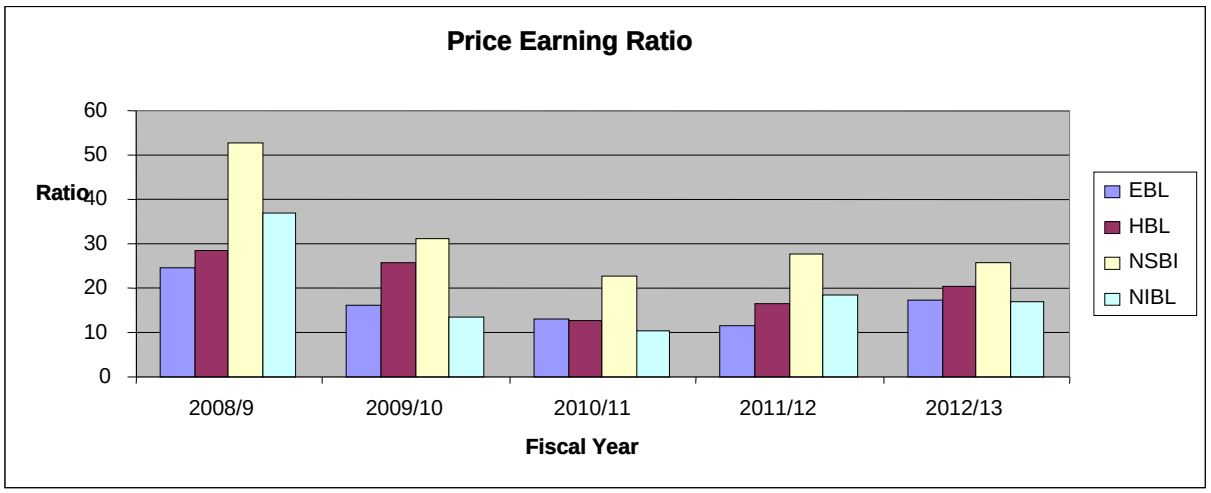
Year / Banks	2008/9	2009/10	2010/11	2011/12	2012/13	Mean	S.D	CV(%)
EBL	24.55	16.27	13.15	11.67	17.32	16.59	5.00	30.14
HBL	28.43	25.66	12.88	16.35	20.47	20.76	6.41	30.89
NSBI	52.52	31.28	22.73	27.69	25.95	32.03	11.86	37.03
NIBL	37.1	13.4	10.5	18.50	17.00	19.30	10.43	54.03

Source: Annual report of Sample banks.

The above table 4.2.3 has been shown in figure 4.2.3

Figure no 4.2.3

Price Earnings Ratio



Average price earnings ratio of EBL is lowest among the Sample banks 16.59. P/E ratio of EBL is decreasing trend over the study period. At the beginning of the study period 2008/9 ratio is 24.55 while in the end of the study period it reaches to 17.32. The standard deviation and CV is 5 and 30.14% respectively.

Price earnings ratio of HBL shows 20.76 in average. At the beginning of the study increases P/E ratio i.e. 28.43% and last of the study 2012/13 fiscal year was decrease to 20.76. Average P/E ratio is higher than EBL & NBIL and lower than NSBI. The S.D and CV is 6.41 and 30.89 respectively.

P/E ratio of Sample bank over the study period; average price earnings ratio of NSBI is 32.03 which are highest among the Sample banks. Price earnings ratio of NSBI ranges from highest of 52.52 in the fiscal year 2008/9 and lowest in the fiscal year 2010/11 with 22.73. The S.D and C.V is 11.86 and 37.03 % respectively.

Average price earnings ratio of NIBL is R.s 19.30. Overall trend of price earnings ratio shows the decreasing trend. It ranges highest of 37.1 in the fiscal year 2008/9 and lowest in the fiscal year 2010/11 is 10.5. The standard deviation and CV is 10.43 and 54.03% respectively.

4.3 Analysis of Capital Structure

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

4.3.1 Net Income Approach (overall Capitalization Rate- K_o or WACC)

The total market value of firm is simply obtained by adding the market value of debt to the market value of equity.

K_o = EBIT/V

Table 4.3.1

Overall Capitalization Rate (NI Approach)

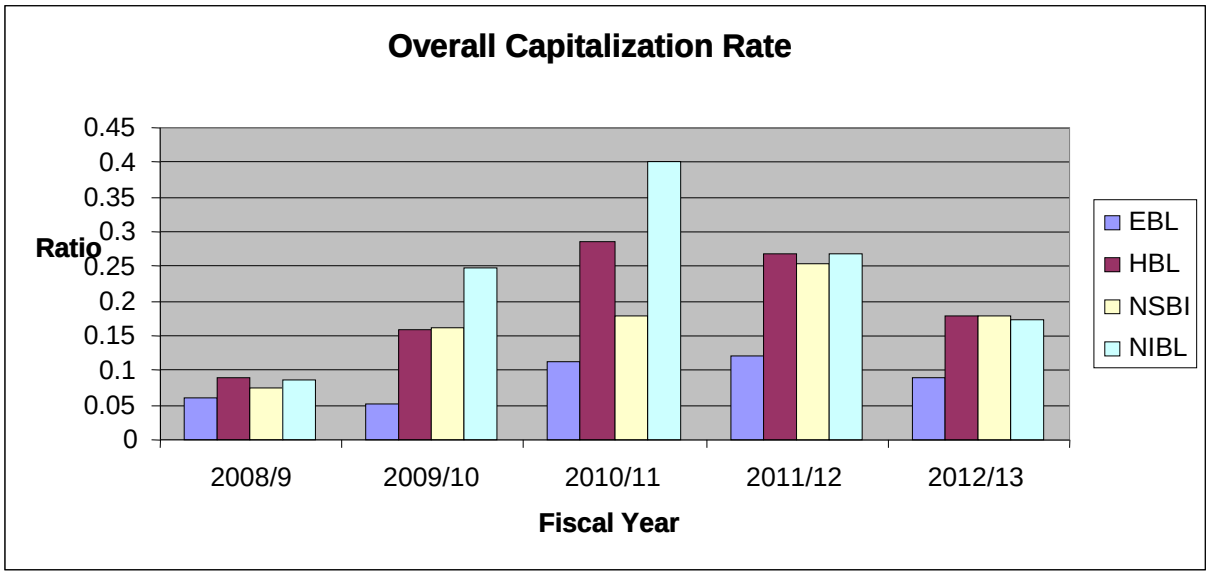
Year / Banks	2008/9	2009/10	2010/11	2011/12	2012/13	Mean	S.D	CV(%)
EBL	0.0608	0.052	0.112	0.120	0.088	0.087	0.030	34.79
HBL	0.0896	0.157	0.285	0.268	0.177	0.195	0.081	41.55
NSBI	0.0751	0.161	0.177	0.253	0.178	0.169	0.063	37.59
NIBL	0.0870	0.248	0.401	0.268	0.173	0.235	0.117	49.58

Source: Annual report and websites of concerned banks.

The above table 4.3.1 has been shown in figure 4.3.1

Figure 4.3.1

Overall Capitalization Rate



Average overall capitalization rate of EBL is 0.0872. In this study period highest is 0.1209 in 2011/12 fiscal year and lowest is 0.05266 in fiscal year2009/10. The standard deviation is 0.0303 and coefficient of variation is 34.79 percent.

Average overall capitalization rate of HBL is 0.1959. In the study period highest is 0.2686 in fiscal year 2011/12 and lowest is 0.0896 in fiscal year 2008/9.The standard deviation is 0.0814 and coefficient of variation is 41.55 percent.

Some of year increase and decreases in overall capitalization. Average overall capitalization rate of NSBI is 0.1693. In the study period highest is 0.2686 in fiscal year 2011/12 and lowest is 0.0896 in fiscal year 2008/9The standard deviation and CV is 0.053 and 46.86%.

Average overall capitalization rate of NIBL is 0.180 which is the highest among the Sample banks. Ratio of NIBL ranges highest of 0.2686 in the fiscal year 2011/12 and lowest capitalization rate is 0.07515in the fiscal year 2008/9. The standard deviation and CV is 0.1170 and 49.58% respectively.

Overall trend doesn't show any clear direction. Over viewing the above calculated overall capitalization rate of NIBL is highest among the Sample banks. EBL is 0.0303 which is least among the Sample banks.

4.3.2 Net Operating Income (NOI) Approach (Equity Capitalization Rate –)

The net operating income approach focus on the equity capitalization rate and appears as irrelevancy theory of capital structure, as already explained in detail in chapter II. According to this approach, overall capitalization rate K_o as well as the debt capitalization rate, K_i, is independent of degree of leverage. However, the equity capitalization rate, K_e, increases linearly with financial leverage ,Equity capitalization rate is obtained simply dividing the earning before tax by market value of the equity. Thus, under the net operating income approach, the equity capitalization is computed as follows:

$$\text{Cost of equity } (K_e) = \frac{\text{EBT}}{\text{S}}$$

Where,

EBT = Earnings before tax

S = Market value of stock.

Table 4.3.2

Equity Capitalization Rate (NOI Approach)

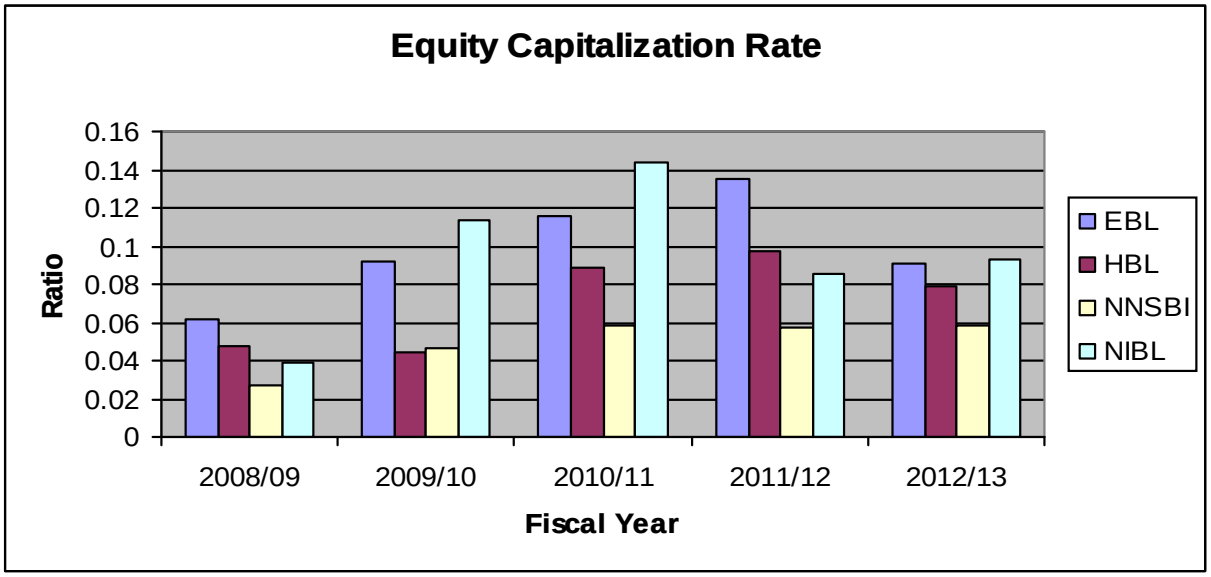
Year / Banks	2008/9	2009/10	2010/11	2011/12	2012/13	Mean	S.D	CV (%)
EBL	0.062	0.0918	0.1156	0.1347	0.0907	0.0990	0.0276	27.86
HBL	0.0481	0.0444	0.0883	0.0975	0.0784	0.0713	0.0239	33.52
NSBI	0.0266	0.0465	0.058	0.0568	0.0586	0.0493	0.0136	27.63
NIBL	0.0392	0.1135	0.1437	0.0851	0.0927	0.0948	0.0385	40.61

Source: Annual report and websites of concerned banks.

The above table 4.3.2 has been shown in figure 4.3.2

Figure 4.3.2

Equity Capitalization Rate



The equity capitalization rate of EBL has fluctuating trend over the study period, having average rate of 0.0990. In the fiscal year 2008/9 to 2011/12 the rate of EBL is upward trend. The standard deviation and CV are 0.0276 and 27.86 % respectively.

Average equity capitalization rate of HBL is 0.0713. Over the study period, ratio is highest of 0.0975 in the fiscal year 2011/12 and lowest in the fiscal year 2009/10 i.e. 0.0444. Equity capital of HBL does not show any clear direction. The S.D and CV is 0.0239and 33.52% respectively. Bank has been fluctuating trend of equity capitalization rates and the market is above the par value of the banks. The par value of Sample banks is R.s 100 per share.

Average equity capitalization rate of NSBI is 0.0493. This is the lowest among the Sample banks. Over the study period ratio highest of 0.0586 in the fiscal year 2012/13 and lowest in the fiscal year 2008/9 is 0.0266. Beginning of the 4 year increasing trend but 2008/9 fiscal year was decrease of rate. The S.D and CV is 0.111 and 99.38% respectively.

Nepal Investment Bank Ltd has average equity capitalization rate is 0.0767. The bank has a deceasing and increasing trend of equity capitalization rates. It ranges highest equity capitalization rate is 0.1437 in fiscal year 2010/11 and lowest is 0.0344 in fiscal year 2008/9. The S.D and CV is 0.0136and 27.63 percent respectively.

Average equality capitalization of EBL is 0.0990. Overall trend shows the decreasing trend over the study period. Average equality HBL is 0.0713 over the study period. Average equality of NSBI is 0.0493. Average equity capitalization rate of NIBL is 0.0948. Average equity capitalization rate of NIBL is the highest among all.

4.4 Statistical analysis

4.4.1. Coefficient of Correlation between EBIT and Interest Payment

The relation between EBIT and interest payment is evaluated in order to measure debt-servicing capacity of banks. It is assumed that there is significant relationship between EBIT and interest payment. Here interest payment (x) is dependent variable and EBIT (Y) is independent variable. Positive values show the positive relation and negative values shows the negative relation. The following result is obtained for Sample banks.

I. If r>6 P.E., it is significant
II. If r<P.E., it is insignificant

Table 4.4.1

Relationship between EBIT and Interest Payment

r	r^2	PE	6 X PE	Level of Significant	R
0.0488	0.0024	0.0449	0.2697	Undefined	0.0488
0.1591	0.0253	0.0968	0.5810	insignificant	0.1591
0.9225	0.8510	0.0449	0.2697	Significant	0.9225
0.8240	0.6790	0.0968	0.5810	Significant	0.8240

From the table analysis; it's clear that the correlation between EBIT and interest payment is case of EBL, HBL, NSBI and NIBL is 0.0488, 0.1591, 0.9225 and 0.8240 which showed positive relationship. It shows that increase in EBIT, increase interest payment. On the other hand, the correlation between EBIT and interest payment of bank which shows higher positive. Considering the probable error (P.E.), the value of 'r' is greater than six times of the probable error. Therefore, it is depicted that the value of 'r' in banks is significant, i.e. there is significant relationship between EBIT and interest payment. It shows that the Sample banks are significantly able to service their debt.

4.4.2 Coefficient of Correlation between Overall Capitalization Rate (X) and Debt-Equity Ratio (Y)

Correlation of coefficient between overall capitalization rate (X) and debt-equity ratio (Y) in terms of total debt to net worth is calculated in order to measure whether increase in the debt-equity ratio decreases overall capitalization rate of the banks. Applying Karl Pearson's correlation coefficient, following result is obtained.

Table 4.4.2

Relationship between Overall Capitalization Rate and Debt Equity Ratio

Banks	R	r^2	PE	6 X PE	Level of Significant
EBL	-0.6683	0.4466	0.2979	1.7875	Insignificant
HBL	-0.1093	0.0119	0.0786	0.4717	Insignificant
NSBI	-0.1113	0.0124	0.2979	1.7875	Insignificant
NIBL	-0.8599	0.7394	0.0786	0.4717	Insignificant

Table shows the correlation coefficient between overall capitalization rate and debt equity of Sample bank over the period. Here correlation coefficient of EBL, HBL, NSBI and NIBL are -0.6683, -0.1093, -0.1113 & -0.8599 respectively. Correlation coefficient of EBL, HBL, NSBI and NIBL shows the high negative, low negative, low negative & high negative respectively. Above result, correlation between overall capitalization rate and debt equity ratio of Sample banks obtained poor negative & positive relationship i.e. increase in debt capital proportion in capital structure poorly decrease overall capitalization rate. Correlation coefficient of Sample banks i.e. 'r' is less than six time P.E. of all banks so that the relationship of K_o and D/E ratio is insignificant.

Therefore, from above correlation coefficient, it cannot be ascertained to establish the relationship that the capital structure decision strongly affects the profitability. Hence, it can be concluded that the value of 'r' is insignificant and there is no proper relationship between overall capitalization rate and debt- equity ratio of Sample banks. Correlation coefficient between overall capitalization rate and debt equality Sample banks over correlation coefficient of EBL, HBL, NSBI and NIBL are-0.6683, -0.1093, -1113 & -0.8599 respectively. Correlation coefficient of Sample

banks i.e. ‘r’ is less than P.E. of all banks, show relationship is insignificant. Hence, it can be concluded that value of ‘r’ is insignificant and there is no proper relationship between overall capitalization rate and debt-equality ratio of Sample bank.

4.4.3 Coefficient of Correlation between Return on Equity and Debt-Equity Ratio.

The correlation between ROE (Y) and D/E Ratio (X) of sample banks are analyzed in order to know whether increase in debt capital portion in the capital structure increase return on equity. Positive values show the positive relation and negative values shows the negative relations. The following results are obtained for EBL, HBL, NSBI and NIBL.

Table 4.4.3

Relationship between Return on Equity Rate and Debt Equity Ratio

Banks	R	r^2	PE	6 X PE	Level of Significant
EBL	0.0825	0.0068	0.2772	1.6630	Insignificant
HBL	-0.0819	0.0067	0.2871	1.7228	Insignificant
NSBI	0.2848	0.0811	0.2772	1.6630	Insignificant
NIBL	-0.2193	0.0481	0.2871	1.7228	Insignificant

This table shows the relationship between the return on equity and equity ratio of Sample banks over the study period. Coefficient of correlation of EBL, HBL, NSBI and NIBL are 0.0825, -0.0819, 0.2848 and -0.2193 respectively. Here relation of EBL, HBL, NSBI and NIBL is low negative relationship. Considering the probable error (P.E.), the value of r is smaller than six times of the probable error of all considerable banks. Therefore, it is depicted that the value of r is insignificant. Whereas insignificant relationship between return on equity and debt equity ratio.

Relationship between the return on equality and debt to equality ratio of Sample banks over the study period; coefficient of Correlation of EBL, HBL, NSBI and NIBL are 0.0825, -0.0819, 0.2848 and -0.2193 respectively. Here relationship of EBL, HBL, NSBI and NIBL is negative relationship. It is depicted that the value of r in EBL, HBL, NSBI and NBIL is insignificant relationship between return on equity and debt to equity ratio.

4.4.4 Coefficient of Correlation between Debt-Equity Ratio and Return on Assets.

The correlation between debt equity ratio and return on assets of Sample banks are analyzed in order to examine which debt capital is significant in generating more return. It is assumed that there is significant relationship between return and debt capital. Positive values show the positive relation and negative values shows the negative relation. The following result is obtained for EBIT, HBL, NSBI and NIBL.

Table 4.4.4

Relationship between Debt- Equity and Return on Assets

Banks	R	r^2	PE	6 X PE	Level of Significant
EBL	-0.6094	0.3713	0.2754	1.6523	Insignificant
HBL	-0.0896	0.0080	0.2258	1.3546	insignificant
NSBI	-0.2950	0.0870	0.2754	1.6523	insignificant
NIBL	-0.5015	0.2515	0.2258	1.3546	insignificant

From table analysis, it's clear that the correlation between debt equality ratio and return on assets. Correlation coefficient of between debts to equality of EBL is -0.6094; here the relation is moderate negative. Correlation coefficient of HBL, NSBI and NIBL is -0.0896, -0.2950 and -0.5015 respectively. Here correlation coefficient of HBL, NSBI and NIBL shows the highly negative relationship; Value of 'r' is less than 6 times probable error of Sample banks. Which shows the value of r is insignificant, i.e. there is not significant relationship between debt to equity and return on assets. It shows that the Sample banks are insignificant in terms of debt to equity to return on assets. It shows that the Sample banks are significant in terms of debt to equity to return on assets. It is clear shows that the debt to equity ratio increase return on assets will also increase and vice-versa.

Correlation between debt to equity ratio and return on assets; correlation coefficient of between debt to equity of EBL is -0.6094. Here the relation is low negative. Correlation coefficient of HBL, NSBI and NIBL is -0.0896, -0.2950 and -0.5015 respectively. Here correlation coefficient of HBL, NSBI and NIBL shows the highly negative relationship. Value of 'r' is less than six times probable error of Sample banks. Which shows the value of r is insignificant, i.e. there is not significant

relationship between debt to equality and return on assets. It shows that the Sample banks are insignificant in term of debt to equality to return on assets.

4.5 Major Findings of the Study

1. In terms of total debt to total assets reveals that the Sample banks are highly leveraged (i.e. more than 90 percent in average) on five year time horizon. It means the assets of Sample banks have been financed more funds collected from creditors. Nepal NSBI bank has the highest average ratio of 95% in comparisons to the lowest of 91% of NIBL.
2. EBL has D/E ratio of 12.68 times on an average. It means debt capital financing is more than 12.68 times higher than shareholder's equity. HBL has an average of 11.85 times D/E ratio. It means debt capital financing is more than 11.85 times higher than shareholder's equity. NSBI has average 15.63 times D/E ratio. It means NSBI debt capital financing is 15.63 times higher than equity financing. NIBL has an average 9.91 times of D/E ratio which is lowest among the Sample banks. NIBL is able to maintain it D/E consistent than the other banks.
3. NIBL is able to maintain the highest interest coverage ratio than other banks. Its average interest coverage ratio during five years period is 1.71 times. EBL has average interest coverage of 0.78 times, which is lowest among the Sample banks. But this ratio shows consistent trend. Ratio the computed interest coverage ratio of both banks in above table shows how many times the interest charges are covered by funds that the ordinary available to pay interest charges.
4. The degree of financial leverage of EBL has the lowest ratio of 2.35 times on an average, which reflects the bank has lower degree of financial risk. NSBI constitutes higher degree of financial leverage, which represents higher financial risks for the bank. Average DFL is HBL, NSBI and NIBL are 2.84, 3.44 and 2.58 times respectively.
5. NIBL has highest average ROA among the Sample bank i.e. 2.03 percent. NIBL has better utilizes its assets to generate profit than other banks. NSBI

has lowest average ROA among the Sample banks i.e. 1.02 percent. Average ROA of EBL and HBL are 1.99 & 1.66 respectively.

6. Among the Sample bank EBL has highest average ROE i.e. 27.58. Average ROE of HBL, NSBI and NIBL are 19.22, 16.94 and 21.96 percent on the shareholder equality fund respectively. ROE of NSBI is least among the Sample banks, which shows the weak performance of banks, in the maximizing the shareholder's equality.
7. Average earning per share of EBL, HBL, NSBI, and NIBL are R.s 92.75 and R.s. 42.50, Rs.28.08 and Rs.42.52. Earnings per share of EBL is highest among the Sample banks. Here EBL process strength on earning per share, which help to maximize the shareholders wealth. Average earning per share of NSBI is lowest among the Sample banks over the study period i.e. 28.08.
8. Average Dividend per share of EBL, HBL, NSBI and NIBL are Rs. 32, Rs. 12.82, Rs.4.92 and Rs.32 respectively. EBL and NIBL both have paid equal dividend in average i.e. Rs. 32 during the study period. NSBI has paid the least Dividend per share among the Sample banks during the study period.
9. Average price earnings ratio of NSBI i.e. 32.03 times is the highest among the Sample banks. On an average, the investors were interested to pay 32.03 times higher than per rupee of reported earnings in the market. Price earning of HBL is consistent in comparison to other banks with an average price earnings ratio of HBL is 20.76. Price earnings ratio EBL is lowest among the Sample banks i.e. 16.59. P/E ratio of NIBL is 19.30 which are second lowest among the Sample banks. Overall trend of price earnings ratio shows the fluctuating trend.
10. Over viewing the above calculated over all capitalization rate of NIBL is highest among the Sample companies. EBL is 0.1497 which is lowest then NIBL. Average over all capitalization ratio of HBL is 0.1432. Average overall capitalization rate of NSBI is 0.1132 which the least among the Sample companies.
11. Equality capitalization rate equality cost of banks was fluctuating in active. Average equality capitalization of NIBL is 0.2359. Overall trend shows the

increasing trend over the study period. Average equity capitalization rate of EBL is 0.0872 which is least among the sample banks over the study period. Average equality of HBL is 0.1959. Similarly Average equity capitalization rate of NSBI is 0.1693. Equality capitalization rates are decreasing and the market values above the par value in all bonuses.

12. Correlation coefficient between EBIT and interest payment of EBL, HBL, NSBI and NIBL is 0.0488, 0.1591, 0.9225 and 0.8240 which showed positive relationship. It shows that increase in EBIT, increase interest payment. On the other hand, the correlation between EBIT and interest payment of banks which shows higher positive relationship. Therefore, it is depicted that value of 'r' in banks is significant, i.e. there is significant relationship between EBIT and interest payment. It shows that the both banks are significant able to service their debt.
13. Correlation coefficient between overall capitalization rate and debt equality Sample banks over correlation of EBL, HBL, NSBI and NIBL are -0.6683, -0.1093, -1113 & -0.8599 respectively. Correlation of EBL, HBL, NSBI and NIBL shows the negative correlation. Correlation coefficient of Sample banks i.e. 'r' is less than P.E. of all banks, show relationship is insignificant. Hence, it can be concluded that value of 'r' is insignificant and there is no proper relationship between overall capitalization rate and debt-equality ratio of Sample bank.
14. Relationship between the return on equality and debt to equality ratio of Sample banks over the study period. Coefficient of Correlation of EBL, HBL, NSBI and NIBL are 0.0825, -0.0819, 0.2848 and -0.2193 respectively. Here relationship of EBL, HBL, NSBI and NIBL is negative relationship. It is depicted that the value of r in EBL, HBL, NSBI and NBIL is insignificant relationship between return on equity and debt to equity ratio.
15. Correlation between debt to equity ratio and return on assets. Correlation coefficient of between debts to equity of EBL is -0.6094. Here the relation is low negative. Correlation coefficient of HBL, NSBI and NIBL is -0.0896, -0.2950 and -0.5015 respectively. Here correlation coefficient of HBL, NSBI

and NIBL shows the highly negative relationship. Value of ‘r’ is less than six times probable error of Sample banks. Which shows the value of r is insignificant, i.e. there is not significant relationship between debt to equality and return on assets. It shows that the Sample banks are insignificant in term of debt to equality to return on assets.

CHAPTER–V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Every business needs capital to operate smoothly and capital is said to be the blood of the business. So, sound capital structure is very crucial for smooth operation of business. As in order firm, capital structure is crucial part for banking industry to the study had been carried based on four commercial bank i.e. HBL, EBL, NIBL and NSBI for study of capital structure. Financial sector is a part of the industry and is regarded as the backbone or engine of the growth of the economy whether it is developed or developing or in transition of emerging. It plays a very crucial role in the development of all sector of the economy and actually works as a lubricator by the financial resources. Banking industry is a part of financial sector and it has great contribution in economic development of the country. By the various function it increases employment opportunity, industrial activities, trade business etc. NBL is the first bank established in the year 1937 A.D. and dominated the whole financial sector in the country for almost three decades.

After liberalization policy has been initiated in mid 1980s, it created the path to the foreign investors. In 1984 A.D., the Nepal Arab Bank Limited was established as the first joint venture commercial bank of the country. Today there are altogether 30 commercial banks operating in the country and most of them are joint venture banks. The banks are having competition and most of them were successful in providing customer satisfaction through various service.

Capital is a most blood of any business organization. It is a planning and decision making for which manager to involve in business. It is not only challenging job for organization but also challenging study for a researcher. A brief introduction of the study and overall introduction of the companies they have undertaken for study purpose have presented in first chapter. Second chapter is good review of the issues relation with abstracts of capital structure such as NI approach, NOI approach, MM model and other theoretical approaches to establish appropriate capital structure are

described in this chapter. Review of different management journal, articles as well as related Nepalese studies have been presented as well. In this chapter the steps to adopt realistic study needed for the researchers have been presented. The methodology, researcher can use to get appropriate guidelines and knowledge about the various sequential steps to adopt a systematic analysis has been explained in this chapter. Most of the data are used in this study are secondary in nature that is annual reports provided by concerned companies. Five years data are taken as sample years and are analyzed by using financial and statistical tools in chapter three methodologies.

Fourth chapter consists of analytical framework of data and findings mentioned in the third chapter using methods mentioned in the chapter third above such as ratio, leverage analysis, correlations, and probable error and capital structure analysis. Detail calculations presented in this chapter that is considered as the important part revealing the performance of Sample banks. This is the concluding chapter of the study. This chapter is divided into three section; Summary, Conclusions and Recommendations. In this chapter, we summarize the study in brief. In the last section of this chapter some recommendation have given, which are useful to stakeholders and to concerned companies as well. They can use these recommendations to take corrective action to draw decisions.

5.1 Summary

It is basically concerned on the various aspects of the study on capital structure of sample commercial banks in Nepal. It covers five fiscal years starting from 2008/9 to 2012/13. It includes the data of four commercial banks. To accomplish the setting objectives in first chapter, the necessary data and other information are collected from the financial statement and websites of each individual bank. Similarly, the requirement of data is mostly fulfilled from 'the annual report and websites of sample banks."

The capital structure position has been analyzed by calculating various ratios. The debt ratio is slightly of fluctuating trend, the creditor's margin of safety is very low, which shows high risk. NSBI has held high protection of average debt ratio with 95**%.** NSBI has debt to equity financing higher than other sample banks i.e. 15.63

times in average. But, NIBL is able to maintain it debt to equity consistent than the other banks. Interest coverage ratio shows consistent trend. NIBL is able to maintain highest interest coverage ratio than other banks. Its average during the five year's period is 1.71 times but EBL has the least average interest coverage ratio among the Sample banks. Degree of financial leverage of EBL has low ratio which shows low risk and NSBI has highest degree of financial coverage which shows high financial risk to the creditors. Leverage ratio measure the long term solvency of the firm. ROA ratio of Sample banks have been mixed trend. EBL has better utilized its asset to generate profit than other banks. ROA of NSBI & HBL is fluctuating over the study period. ROA of NIBL is also fluctuating trend over the study period. ROE of NSBI is least among the Sample banks which show the weak performance of banks.

Earnings per share of EBL are the highest among the Sample banks. Here EBL progress strength on earning per share which help to maximize the share holder's wealth, average EPS of NSBI is lowest among the study period but EPS of all other banks have an fluctuating trend. Divided per share of NIBL, HBL and NSBI is the lowest among the study period. EBL distributes bonus share & issuance of bonus share is advantageous in some cases. It reduces the market price per share and it's more attractive to investor. Price earnings ratio of NSBI is 32.03 times which is the highest among the Sample banks on an average; the investors were interested to pay 32.03 times higher than per rupee of reported earnings in the market. Overall trend of price earnings ratio shows the fluctuating trend.

The NI approach implies that proportion of high leverage consequently increases the value of the firm. The approach is well acquainted with this study as the value of the banks has increased in accordance to the increasing proportion of leverage. The K_o of Sample banks are positive. EBL is the least among overall capitalization of the Sample bank and NIBL, is the highest overall capitalization rate in the study period.

The correlation coefficient between EBIT and interest payment of Sample banks are positive relationship and significant relationship all over the Sample banks. The relationship between overall capitalization rate and Debt equity ratio are negative value except NSBI or 'r' shows relationship is insignificant. The relationship ROE

and debt to equity ratio of Sample banks are negative value of 'r' that is negative relationship. There have insignificant relationship between ROE and debt to equity ratio. Debt equity and ROA of Sample banks are negative relationship because of 'r' is negative whereas the entire Sample bank have insignificant relationship. Thus it is not sure that if debt to equity increases.

5.2 Conclusion

From the study banks are found to be highly levered. The company's financial mix accounts a higher proportion of debt and it is increasing every year. The growth and increasing integration of the world's economy has been parallel by expansion of global banking activities. Nepal though a developing country, couldn't identify the fact that commercial banking which is responded by extending loan and developing new highly innovative financial techniques that laid the foundation for totally new approaches to the provision of banking services on the basis of entire research study, the analysis of capital structure is very significant in project appraisal of shift competition. Most of the banks cannot manage the current assets. Because of the inefficient current management company cannot fulfill the organizational objectives i.e. to earn maximum profit and maximizing the share holder equity.

The debt-shareholder's fund ratio calculated in relation to the proportion of funded debt to shareholder fund which shows % of funded debt is many times greater than shareholder's fund in the bank. The interest coverage ratio during the study period was positive for all Sample banks. In case of ROA and ROE, EBL has higher ratio than any other bank which indicated the EBL best bank among the Sample banks. The average EPS of EBL is the highest than other Sample banks and EPS of EBL is found to be in increasing up to 2009/10 & decreasing in 2010/11 trend and EPS of other banks are fluctuating during the study period. In Nepalese banking industry, trend of profit is not increasing; profit level is less than the standard level of return on investment. Cost of existing condition, bank may not be run in long term. The main cause of cost increase may be unskilled manpower, overstaffing, unsystematic arranged of materials, level of unnecessary expenses is high and misuse of the facilities and resources. The correlation coefficient of the variable of Sample bank for the statistical analysis is found positive to each other. The coefficient is all

statistically significant in more than average bank. A positive correlation means both of the variables are moving towards the same direction.

Finally, it can be said that the study of a capital structure cannot be neglected by Sample commercial banks. Otherwise it can seriously ride their financial viability. Thus, manager should understand the factor determining capital structure. Some of the Nepalese joint venture banks are suffering from the huge losses due to their administrative negligence in day to day operation and lack of specific analysis of capital structure policy.

5.3 Recommendations

The sound capital structure enhances the profitability and growth of any company and it also indicates sound financing position of the company. The capital structure decision in terms of banking is very much different from other industry. Banks enjoy by using outsider's fund by various measures in variety of assets in order to provide good return to their shareholders. As the outsider's fund is very higher than owner's fund financial manager must be very much sensible in each step of investing and lending the funds in various assets. If bank fail to make handsome return, it may bring worse period for the bank. Based on finding following recommendations are provide financial position of HBL, NSBI and EBL.

a) The capital structure of Sample banks is highly leveraged. Still EBL, HBL and NSBI has higher leverage ratio in compared to NIBL. It is good making handsome return by employing outsider's fund but at same time it also bring risk to the bank. The proportion of debt and equity capital should be decided keeping in mind the effort of tax advantage and financial distress. The banks, when in difficulty to pay interest and principal, ultimately lead to liquidation or bankruptcy. For such the bank should reduce the high use of debt capital.
b) The ROE and EPS of HBL, NSBI, and NIBL are very low in compare to EBL. So they need to seek more profitable areas in order to increase profit of the bank. And they also need to maintain optimal capital structure considering cost of capital so that it helps to enhance the ROE and profitability of the banks.
c) Dividend payout ratio should be determined considering the shareholder's expectation and the growth requirement of the banks. A higher payment attracts

both the existing and potential investor leading to increase in market price of the share, which consequently leads to the strength of financial capacity. Hence EBL, HBL, NSBI and NIBL banks are recommended to maintain consistent dividend payout ratio.

d) The earning of all the Sample banks is decreasing yearly which may be the resultant of existing economic & political conditions of the country. But the banks need to enhance their profitability by increasing efficiency in their productivity and decreasing the cost.

e) The central bank as a regulating supervising and directing banks mandates all the commercial banks to increase their capital fund to R.s 2 (Two) billion and also needed to maintain sufficient capital adequacy ratio as per NRB directives. So all Sample banks need to adopt the guidance of the central bank to maintain appropriate capital structure to safe guard the depositor's money.

f) All the Sample banks need to review and monitor leverage ratio regularly so that risk to the bank may not increase which may result in efficient operation of the banks and it is basically not concerned to mobilize their deposits fund to productive areas. So they are proposed to come forward to match government obligation by financing the priority sector development program.

g) High risk to make high profit. Thus the management should not consider it as danger. It is the ability to manage the current assets properly and efficiently for the efficient utilization of current assets. The management should identify its strength and weak points. To develop the managerial ability there should be trained, participating in management, conferences, foreign, enterprise tour and need of the changing time and situation for the managerial level employees.

h) All the companies should give continuity in providing both conceptual and practical training to the staff to enhance their knowledge, skill and competency level. They should remain consistently vigilant in enhancing their morale and motivation.

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APPENDIX-1

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

Debt ratio of Everest Bank (in Rs million)

Fiscal Year	Total Debt	Total Assets	Debt Ratio
2008/09	34482.7	36916.85	0.934
2009/10	38347.37	41382.76	0.927
2010/11	42545.77	46236.21	0.92
2011/12	51635.83	55813.13	0.925
2012/13	60913.3	65741.15	0.927

Source: Annual report of EBL

Debt ratio of HBL (in Rs million)

Fiscal Year	Total Debt	Total Assets	Debt Ratio
2008/09	37488.15	39330.13	0.953
2009/10	39088.45	42717.12	0.915
2010/11	42403.88	46736.20	0.907
2011/12	49732.42	54364.43	0.915
2012/13	55853.26	61152.97	0.913

Source: Annual report of HBL

Debt ratio of NSBI (in Rs million)

Fiscal Year	Total Debt	Total Assets	Debt Ratio
2008/09	28435.42	30166.44	0.943
2009/10	35514.05	38047.68	0.933
2010/11	43115.48	46088.23	0.995
2011/12	54862.25	58059.71	0.945
2012/13	60997.20	64796.15	0.941

Source: Annual report of NSBI

Debt ratio of NIBL (in Rs million)

Fiscal Year	Total Debt	Total Assets	Debt Ratio
2008/09	48621.55	53010.8	0.917
2009/10	52117.75	57305.41	0.909
2010/11	52594.79	58356.83	0.901
2011/12	59706.29	65756.23	0.908
2012/13	66131.51	73152.15	0.904

Source: Annual report of NIBL

APPENDIX-2

Calculation of Debt to Equity Ratio

Debt to Equity Ratio = Amount of Debt / Amount of Equity

Debt to Equity Ratio of EBL (in Rs million)

Fiscal Year	Total Debt	Total Equity	Debt to Equity Ratio
2008/09	34482.7	2421.71	14.24
2009/10	38847.37	3035.39	12.63
2010/11	42545.77	3690.44	11.53
2011/12	51635.83	4177.3	12.36
2012/13	60913.3	4827.84	12.62

Source: Annual report of EBL

Debt to Equity Ratio of HBL (in Rs million)

Fiscal Year	Total Debt	Total Equity	Debt to Equity Ratio
2008/09	37488.15	3281.98	11.42
2009/10	39088.45	2333.39	16.75
2010/11	42403.88	4332.32	9.79
2011/12	49732.42	4632.01	10.74
2012/13	55853.26	5299.71	10.54

Source: Annual report of HBL

Debt to Equity Ratio of NSBI (in Rs million)

Fiscal Year	Total Debt	Total Equity	Debt to Equity Ratio
2008/09	28435.42	1731.02	16.43
2009/10	35514.05	2533.63	14.02
2010/11	43115.48	2973.26	14.5
2011/12	54862.25	3197.46	17.16
2012/13	60997.20	3798.96	16.06

Source: Annual report of NSBI

Debt to Equity Ratio of NIBL (in Rs million)

Fiscal Year	Total Debt	Total Equity	Debt to Equity Ratio
2008/09	48621.55	4393.29	11.07
2009/10	52117.75	5187.67	10.05
2010/11	52594.79	5762.03	9.13
2011/12	59706.29	6049.94	9.87
2012/13	66131.51	7020.64	9.42

Source: Annual report of NIBL

APPENDIX -3

Calculation of Interest Coverage Ratio

Interest Coverage Ratio = Net Profit before Interest & tax / Interest (charge) Expenses = EBIT / Interest

Interest Coverage Ratio of EBL (in Rs million)

Fiscal Year	EBIT	Interest	I/C Ratio
2008/09	972.95	1012.87	0.961
2009/10	1272.09	1572.79	0.809
2010/11	1418.39	2535.87	0.559
2011/12	1538.34	2873.33	0.535
2012/13	2302.75	2179.18	1.057

Source: Annual report of EBL

Interest Coverage Ratio of HBL (in Rs million)

Fiscal Year	EBIT	Interest	I/C Ratio
2008/09	1964.31	934.78	2.1
2009/10	2132.76	1553.53	1.37
2010/11	3430.02	2414.81	1.42
2011/12	4,344.44	2,816.44	1.54
2012/13	3,633.42	2,119.06	1.71

Source: Annual report of HBL

Interest Coverage Ratio of NSBI (in Rs million)

Fiscal Year	EBIT	Interest	I/C Ratio
2008/09	1267.07	824.7	1.54
2009/10	2013.98	1443.69	1.4
2010/11	2102.78	2096.04	1.00
2011/12	3,526.12	2770.80	1.27
2012/13	3,707.93	2486.98	1.49

Source: Annual report of NSBI

Interest Coverage Ratio of NIBL (in Rs million)

Fiscal Year	EBIT	Interest	I/C Ratio
2008/09	2997.83	1686.97	1.78
2009/10	4482.27	2553.85	1.76
2010/11	5404	3620.34	1.49
2011/12	5451.63	3814.41	1.43
2012/13	5786.13	2774.79	2.09

Source: Annual report of NIBL

APPENDIX-4

Calculation of Return on Total Assets.

$$\text{Return on Total Assets} = \frac{Net\ \text{Pr}ofit After\ Tax}{Total\ Assets} x100$$

Return on Total Assets of EBL (in Rs million)

Fiscal Year	Net Profit After Tax	Total Assets	ROA (%)
2008/09	638.73	36916.85	1.73
2009/10	831.77	41382.76	2.01
2010/11	931.3	46236.21	2.01
2011/12	1090.56	55813.13	1.95
2012/13	1471.12	65741.15	2.24

Source: Annual report of EBL

Return on Total Assets of HBL (in Rs million)

Fiscal Year	Net Profit After Tax	Total Assets	ROA (%)
2008/09	752.83	39330.13	1.91
2009/10	508.8	42717.12	1.19
2010/11	893.12	46736.2	1.91
2011/12	958.64	54364.43	1.76
2012/13	943.7	61152.97	1.54

Source: Annual report of HBL

Return on Total Assets of NSBI (in Rs million)

Fiscal Year	Net Profit After Tax	Total Assets	ROA (%)
2008/09	316.37	30166.44	1.05
2009/10	391.74	38047.68	1.03
2010/11	464.56	46088.23	1.01
2011/12	480.11	58059.71	0.83
2012/13	771.47	64796.15	1.19

Source: Annual report of NSBI

Return on Total Assets of NIBL (in Rs million)

Fiscal Year	Net Profit After Tax	Total Assets	ROA (%)
2008/09	900.62	53010.8	1.7
2009/10	1265.95	57305.41	2.21
2010/11	1176.64	58356.83	2.02
2011/12	1039.27	65756.23	1.58
2012/13	1,915.03	73152.15	2.62

Source: Annual report of NIBL

APPENDIX-5

Calculation of Return on Shareholder Equity (ROE)

$$\textbf{ROE} = \frac{\text{Net Profit After Tax}}{\textit{Shareholder Equity}} x100$$

Return on Shareholder Equity of EBL (in Rs million)

Fiscal Year	Net Profit After Tax	Shareholder's Equity	ROE (%)
2008/09	638.73	2434.15	26.24
2009/10	831.77	2786.76	29.85
2010/11	931.3	3690.44	25.24
2011/12	1090.56	4177.3	26.11
2012/13	1471.12	4827.84	30.47

Source: Annual report of EBL

Return on Shareholder Equity of HBL (in Rs million)

Fiscal Year	Net Profit After Tax	Shareholder's Equity	ROE (%)
2008/09	152.83	3281.98	22.94
2009/10	508.8	3628.68	14.02
2010/11	893.12	4322.32	20.62
2011/12	958.64	4632.01	20.70
2012/13	943.7	5299.71	17.81

Source: Annual report of HBL

Return on Shareholder Equity of NSBI (in Rs million)

Fiscal Year	Net Profit After Tax	Shareholder's Equity	ROE (%)
2008/09	316.37	1731.02	18.28
2009/10	391.74	2533.63	15.46
2010/11	464.56	2973.26	15.62
2011/12	480.11	3197.46	15.02
2012/13	771.47	3798.96	20.31

Source: Annual report of NSBI

Return on Shareholder Equity of NIBL (in Rs million)

Fiscal Year	Net Profit After Tax	Shareholder's Equity	ROE (%)
2008/09	900.62	4393.29	20.5
2009/10	1265.95	5187.67	24.4
2010/11	1176.64	5762.03	20.42
2011/12	1039.27	6049.94	17.18
2012/13	1,915.03	7020.64	27.28

Source: Annual report of NIBL

APPENDIX-6

Calculation of NI Approach

Market value of Equity (S) = No of share x Closing MPS.

Market value of Firm (V) = Market value of Equity (S) +Market value of Debt (B)

Value of Firm of EBL

Fiscal Year	No. of Share	Closing MPS	Market value of Share (S)	Market value of Debt (B)	Market value of Firm (V)
2008/09	6387938	2455	15682387790	300000000	15982387790
2009/10	8500000	1630	13855000000	300000000	24155000000
2010/11	11214005	1094	12268187110	300000000	12568187110
2011/12	12316357	1033	12722796781	0	12722796781
2012/13	16011264	1591	25473921024	468845000	25942766024

Source: Annual report of EBL

Value of Firm of HBL

Fiscal Year	No. of Share	Closing MPS	Market value of Share (S)	Market value of Debt (B)	Market value of Firm (V)
2008/09	12162150	1760	21405384000	500000000	21905384000
2009/10	16000000	816	13056000000	500000000	13556000000
2010/11	20000000	575	11500000000	500000000	12000000000
2011/12	24000000	653	15672000000	500000000	16172000000
2012/13	27600000	700	19320000000	1100000000	20420000000

Source: Annual report of HBL

Value of Firm of NSBI

Fiscal Year	No. of Share	Closing MPS	Market value of Share (S)	Market value of Debt (B)	Market value of Firm (V)
2008/09	8745278	1900	16616028200	200000000	16816028200
2009/10	16536239	741	12253353100	200000000	12453353100
2010/11	18693032	622	11627065900	200000000	11827065900
2011/12	20939898	635	13296835230	600000000	13896835230
2012/13	23557385	850	20023777250	800000000	20823777250

Source: Annual report of NSBI

Value of Firm of NIBL

Fiscal Year	No. of Share	Closing MPS	Market value of Share (S)	Market value of Debt (B)	Market value of Firm (V)
2008/09	24070689	1388	33410116330	1050000000	34460116330
2009/10	24090977	705	16984138790	1050000000	18034138790
2010/11	240904977	515	12406853160	1050000000	13456853160
2011/12	37661553	511	19245053583	1050000000	20295053583
2012/13	41448085	784	32495298640	800,000,000	33295298640

Source: Annual report of NIBL

APPENDIX-7

Calculation of Overall Capitalization of Rate (K_o)

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

Overall Capitalization Rate of EBL (Rs in million)

Fiscal Year	EBIT	Value of firm	K_o
2008/09	972.95	15982.39	0.0609
2009/10	1272.09	24155	0.0527
2010/11	1418.39	12568.19	0.1129
2011/12	1538.34	12722.80	0.1209
2012/13	2302.75	25942.76	0.0888

Source: Annual report of EBL

Overall Capitalization Rate of HBL (in Rs million)

Fiscal Year	EBIT	Value of firm	K_o
2008/09	1964.31	21905.38	0.0896
2009/10	2132.76	13556	0.1573
2010/11	3430.02	12000	0.2858
2011/12	4,344.44	16172.00	0.2686
2012/13	3,633.42	20420	0.1779

Source: Annual report of HBL

Overall Capitalization Rate of NSBI (in Rs million)

Fiscal Year	EBIT	Value of firm	K_o
2008/09	1267.07	16816.03	0.075
2009/10	2013.98	12453.35	0.161
2010/11	2102.78	11827.07	0.178
2011/12	3,526.12	13896.84	0.254
2012/13	3,707.93	20823.78	0.178

Source: Annual report of NSBI

Overall Capitalization Rate of NIBL (in Rs million)

Fiscal Year	EBIT	Value of firm	K_o
2008/09	2997.83	34460.12	0.087
2009/10	4482.27	18034.14	0.2485
2010/11	5404	13456.85	0.4016
2011/12	5451.63	20295.05	0.2686
2012/13	5786.13	33295.30	0.1738

Source: Annual report of NIBL

APPENDIX-8
Calculation of 'NOI' Approach

Cost of Equity (K_e) = Earning available to common stock holders (MI)
Market value of stock (S)

Equity Capitalization Rate of EBL (R.s in million)

Fiscal Year	EBT	Market value of stock(S)	K_e
2008/09	972.95	15682.39	0.062
2009/10	1272.09	13855	0.0918
2010/11	1418.398	12268.19	0.1156
2011/12	1713.843	12722.797	0.13471
2012/13	2311.08	2547.390	0.90723

Source: Annual report of EBL

Equity Capitalization Rate of HBL (R.s in million)

Fiscal Year	EBT	Market value of stock(S)	K_e
2008/09	1029.54	21405.38	0.0481
2009/10	579.23	13056	0.0444
2010/11	1015.21	11500.0	0.0883
2011/12	1528.00	15672.00	0.0975
2012/13	1514.36	19320	0.0784

Source: Annual report of HBL

Equity Capitalization Rate of NSBI (R.s in million)

Fiscal Year	EBT	Market value of stock(S)	K_e
2008/09	442.37	16616.03	0.0266
2009/10	570.29	12253.35	0.0465
2010/11	674.25	11627.07	0.058
2011/12	755.32	13296.84	0.057
2012/13	1220.95	20823.78	0.059

Source: Annual report of NSBI

Equity Capitalization Rate of NIBL (R.s in million)

Fiscal Year	EBT	Market value of stock(S)	K_e
2008/09	1310.85	33410.12	0.0392
2009/10	1928.43	16984.14	0.1135
2010/11	1783.66	12406.85	0.1437
2011/12	1637.22	19245.05	0.0851
2012/13	3011.34	32495.30	0.0927

Source: Annual Report of NIBL

APPENDIX-9
Degree of Financial Leverage (DFL)

DFL = % change in EBT or, DFL = EBIT

% change in EBIT EBT

DFL of EBL (R.s in million)

Fiscal Year	EBIT	EBT	DFL
2008/09	1985.82	972.95	2.04
2009/10	2879.58	1272.09	2.26
2010/11	3999.99	1418.398	2.82
2011/12	4587.18	1713.843	2.68
2012/13	4490.27	2311.08	1.94

Source: Annual report of EBL

DFL of HBL (R.s in million)

Fiscal Year	EBIT	EBT	DFL
2008/09	1964.31	1029.54	1.91
2009/10	2132.76	579.23	3.68
2010/11	3430.02	1015.21	3.38
2011/12	4,344.44	1528	2.84
2012/13	3,633.42	1514.36	2.40

Source: Annual report of HBL

DFL of NSBI (R.s in million)

Fiscal Year	EBIT	EBT	DFL
2008/09	1267.07	442.37	2.86
2009/10	2013.98	570.29	3.53
2010/11	2102.78	674.25	3.12
2011/12	3,526.12	755.32	4.67
2012/13	3,707.93	1220.95	3.04

Source: Annual report of NSBI

DFL of NIBL (R.s in million)

Fiscal Year	EBIT	EBT	DFL
2008/09	2997.83	1310.25	2.29
2009/10	4482.27	1928.43	2.32
2010/11	5404	1783.66	3.03
2011/12	5451.63	1637.22	3.33
2012/13	5786.13	3011.34	1.92

Source: Annual report of NIBL

APPENDIX 10

Correlation coefficient between EBIT & Interest Payment Equity with Probable Error.

Correlation coefficient (r) $= \dfrac{N \quad XY\,\mathrm{Z} \quad X \quad Y}{\sqrt{N \quad X^{2}\mathrm{Z}f \quad X\,\mathrm{Å}}\sqrt{N \quad Y^{2}\mathrm{Z}f \quad Y\,\mathrm{Å}}}$

Where, N = Number of Observation

X and Y are variables

Correlation Coefficient Between EBIT & Interest Payment of EBL (R.s in million)

Fiscal Year	Interest Payment (X)	EBIT (Y)	**XY**	**X^2**	**Y^2**
2008/09	1012.87	1985.82	2011377.50	1025905.64	3943481.07
2009/10	1572.79	2844.88	4474398.82	2473668.38	8093342.21
2010/11	2535.87	3954.27	10027554.21	6430687.37	15636251.23
2011/12	2873.33	1418.39	4075502.54	8256025.29	15636251.23
2012/13	2179.18	2179.18	4748825.47	4748825.47	15636251.23
Total	ϕX X10174.04	$\phi\psi$ X12382.54	$\phi\varepsilon\ \psi$ =25337658.54	$\phi\varepsilon\ ^2$X22935112.15	$\phi\psi^2$X58945576.97

Source: Annual Report of EBL

$$r\ X\frac{5x25337658.5\ 4\ Z10174\ \ x12382.54}{\sqrt{5x22935112.15\ Zfi10174.04A}\ \sqrt{5x58945576.97\ Zfi12382.54A}}$$

= 0.018

$$\text{P.E.} = \frac{0.6745fi1\ Zr^2A}{\sqrt{n}}+$$

$$= \frac{0.6745fi1\ Z0.018^2A}{\sqrt{5}}$$

= 0.302

Correlation Coefficient Between EBIT & Interest Payment of HBL (R.s in million)

Fiscal Year	Interest Payment (X)	EBIT (Y)	XY	X^2	Y^2
2008/09	934.78	1964.31	1836197.70	873813.65	3858513.77
2009/10	1553.53	2132.76	3313306.64	2413455.46	4548665.22
2010/11	2414.81	3430.02	8282846.59	5831307.34	11765037.20
2011/12	2816.44	4344.44	12235866.65	7932342.18	18874177.28
2012/13	2119.06	3633.42	7699434.99	4490415.28	13201740.90
Total	ϕX X9838.62	$\phi\psi$ X15504.95	$\phi\varepsilon\ \psi$ =33367652.56	$\phi\varepsilon\ ^2$X21541333.92	$\phi\psi^2$X52248134.37

Source: Annual Report of HBL

$$r\ X\frac{5x33367652.56\ Z9838.62x15504.95}{\sqrt{5x21541333.92\ Zfi9838.62A}\ \sqrt{5x52248134.37\ Zfi15504.95A}}$$

= 0.948

$$\text{P.E.} = \frac{0.6745fi1\ Zr^2A}{\sqrt{n}}$$

$$= \frac{0.6745(1\ Z0.948^2)}{\sqrt{5}}$$

=0.031

Correlation Coefficient Between EBIT & Interest Payment of NSBI (R.s in million)

Fiscal Year	Interest Payment (X)	EBIT (Y)	XY	X^2	Y^2
2008/09	824.70	1267.07	367684.54	206952.21	653251.89
2009/10	1443.69	2013.98	1044952.63	680130.09	1605466.38
2010/11	2096.04	2102.78	2907562.79	2084240.82	4056115.44
2011/12	2770.80	3526.12	4407810.99	4393383.68	4421683.63
2012/13	2486.98	3707.93	9221547.75	6185069.52	13748744.88
Total	ϕX X9622.1	$\phi\psi$ X12617.88	$\phi\varepsilon\ \psi$ =17949558.0	$\phi\varepsilon\ ^2$X13549776.32	$\phi\psi^2$X24485262.22

Source: Annual Report of NSBI

$$r\ X\frac{N\phi\varepsilon\ \psi\ Z\phi\varepsilon\ .\phi\psi}{\sqrt{N\phi\varepsilon\ ^2 Zf\phi\varepsilon\ \AA}\sqrt{N\phi\psi^2\ Zf\phi\psi\AA}}$$

$$\frac{5x17949558\ Z9622.1x12617.88}{\sqrt{5x13549.32\ Z9622.1^2}\ \sqrt{5x24485262.22\ Z12617.88^2}}$$

=-1.048

$$\text{P.E.}= \frac{0.6745(1\ Z(Z1.048)^2)}{\sqrt{5}}$$

= -0.03

Correlation Coefficient Between EBIT & Interest Payment of NIBL (R.s in million)

Fiscal Year	Interest Payment (X)	EBIT (Y)	XY	X^2	Y^2
2008/09	1686.97	2997.83	1989766.96	984381.47	4021990.14
2009/10	2553.85	4482.27	5057249.28	2845867.78	8986984.71
2010/11	3620.34	5404.00	11447045.23	6522149.82	20090744.35
2011/12	3814.41	5451.63	19564317.36	13106861.71	29203216.00
2012/13	2774.79	5786.13	16055295.66	7699459.54	33479300.38
Total	ϕX X14450.36	$\phi\psi$ X24121.86	$\phi\varepsilon\ \psi$ =54113674.49	$\phi\varepsilon\ ^2$X31158720.32	$\phi\psi^2$X95782235.58

Source: Annual Report of NIBL

$$\frac{5x54113674.49\ Z14450.36x24121.86}{\sqrt{5x31158720.32\ Z14450.36^2}\ \sqrt{5x95782235.58\ Z24121.86^2}}$$

= -1.056

$$P.E.= \frac{0.6745\int 1\ Z(Z1.056)^2\ A}{\sqrt{5}}$$

-0.035

APPENDIX -11

Coefficient of correlation between overall capitalization rate (X) & Debt equity Ratio (Y) for selected banks.

For EBL

Fiscal Year	X	Y	**XY**	**X^2**	**Y^2**
2008/09	0.0609	14.24	0.8669	0.0037	202.7776
2009/10	0.0527	12.63	0.6651	0.0028	159.5169
2010/11	0.1129	11.53	1.3012	0.0127	132.9409
2011/12	0.1209	12.36	1.4945	0.0146	152.7696
2012/13	0.0888	12.62	1.1199	0.0079	159.1910
Total	ϕX X0.4361	ϕY X63.38	$\phi\varepsilon\ \psi$ X5.4476	ϕX^2 X0.0417	$\phi\psi^2$ X807.1960

Source: Annual report of EBL

$$r = \frac{N\phi\varepsilon\ \psi - \phi\varepsilon\ .\phi\psi}{\sqrt{N\phi\varepsilon^{\ 2} - (\phi\varepsilon)^2}\ \sqrt{N\phi\psi^2 - (\phi\psi)^2}}$$

$$= \frac{5x5.4476 - 0.4361x63.38}{\sqrt{5x0.0417 - (0.4361)^2}\ \sqrt{5x807.1960 - (63.38)^2}}$$

$$= -0.684$$

$$\text{P.E.} = \frac{0.6745(1 - 0.684^2)}{\sqrt{5}}$$

=0.161

For HBL

Fiscal Year	X	Y	XY	X^2	Y^2
2008/09	0.0481	11.42	0.5493	0.0023	130.4164
2009/10	0.0444	16.75	0.7437	0.0020	280.5625
2010/11	0.0883	9.79	0.8645	0.0078	95.8441
2011/12	0.0975	10.74	1.0468	0.0095	115.2763
2012/13	0.0784	10.54	0.8261	0.0061	111.0690
Total	0.3567	59.24	4.0303	0.1272	733.1683

Source: Annual Report of HBL

$$r = \frac{5x4.0303 - 0.3567x59.24}{\sqrt{5x0.1272 - (0.3567)^2}\ \sqrt{5x733.1683 - (59.24)^2}}$$

= -0.11

$$\text{P.E.} = \frac{0.6745\sqrt{1 - r^2}}{\sqrt{5}}$$

= 0.298

For NSBI

Fiscal Year	X	Y	XY	X^2	Y^2
2008/09	0.0266	16.43	0.4370	0.0007	269.9449
2009/10	0.0465	14.02	0.6519	0.0022	196.5604
2010/11	0.0580	14.5	0.8410	0.0034	210.2500
2011/12	0.0568	17.1581	0.9747	0.0032	294.3996
2012/13	0.0586	16.06	0.9414	0.0034	257.8044
Total	ϕX X0.2465	$\phi\psi$ X78.16	$\phi\varepsilon\ \psi$ X3.2460	$\phi\varepsilon^{\ 2}$ X0.0129	$\phi\psi^2$ X1228.9594

Source: Annual Report of NSBI

$$r\ \text{X}\frac{N\phi\varepsilon\ \psi\ \text{Z}\phi\varepsilon\ .\phi\psi}{\sqrt{N\phi\varepsilon^{\ 2}\text{Z}f\phi\varepsilon\ \text{Å}^2}\sqrt{N\phi\psi^2\ \text{Z}f\phi\psi\text{Å}^2}}$$

$$= \frac{5x3.2460\ \text{Z}0.2465x78.16}{\sqrt{5x0.0129\ \text{Z}(0.2465)^2}\sqrt{5x1228.95\ \text{Z}f78.16\text{Å}^2}}$$

=-0.099

$$\text{P.E.} = \frac{0.6745\sqrt{1 - \text{Z}(\text{Z}0.099^2)}}{\sqrt{5}}$$

= 0.299

For NIBL

Fiscal Year	X	Y	XY	X^2	Y^2
2008/09	0.0392	11.07	0.4339	0.0015	122.5449
2009/10	0.1135	10.05	1.1407	0.0129	101.0025
2010/11	0.1437	9.13	1.3120	0.0206	83.3569
2011/12	0.0851	9.87	0.8396	0.0072	97.3953
2012/13	0.0927	9.42	0.8729	0.0086	88.7286

Total	ϕX X0.4741	$\phi\psi$ X 49.54	$\phi X\psi$ X4.5991	$\phi\varepsilon^2$ X0.0509	$\phi\psi^2$ X493.0281

Source: Annual report of NIBL

$$r = \frac{N\phi\varepsilon\psi - \phi\varepsilon \cdot \phi\psi}{\sqrt{N\phi\varepsilon^2 - (\phi\varepsilon)^2}\sqrt{N\phi\psi^2 - (\phi\psi)^2}}$$

$$= \frac{5x4.5991 - 0.4741x49.54}{\sqrt{5x0.0509 - (0.4741)^2}\sqrt{5x493.02810 - (49.54)^2}}$$

= -0.864

$$\text{P.E.} = \frac{0.6745(1 - r^2)}{\sqrt{5}}$$

= 0.077

Appendix-12

Correlation coefficient between ROE (Y) and Debt Equity Ratio (X) for selected banks.

For EBL

Fiscal Year	Debt Equity Ratio (X)	ROE (Y)	XY	X^2	Y^2
2008/09	14.24	26.24	373.66	202.78	688.54
2009/10	12.63	29.85	377.01	159.52	891.02
2010/11	11.53	25.24	291.02	132.94	637.06
2011/12	12.36	26.11	322.68	152.77	681.57
2012/13	12.62	30.47	384.46	159.19	928.52
Total	ϕ*X* X63.38	ϕψ X137.91	ϕ*X*ψ X1748.82	ϕε ^{2} X807.20	ϕψ^2 X3826.70

Source: Annual Report of EBL

$$r = \frac{N\phi\varepsilon\psi - \phi\varepsilon \cdot \phi\psi}{\sqrt{N\phi\varepsilon^2 - (\phi\varepsilon)^2}\sqrt{N\phi\psi^2 - (\phi\psi)^2}}$$

$$= \frac{5x1784.82 - 63.38x137.91}{\sqrt{5x807.20 - (63.38)^2}\sqrt{5x3826.70 - (137.91)^2}}$$

=0.316

$$\text{P.E.} = \frac{0.6745(1 - 0.316^2)}{\sqrt{5}}$$

= 0.271

For HBL

Fiscal Year	Debt Equity Ratio (X)	ROE (Y)	XY	X^2	Y^2
2008/09	11.42	22.94	261.97	130.42	526.24
2009/10	16.75	14.02	234.84	280.56	196.56
2010/11	9.79	20.62	201.87	95.84	425.18
2011/12	10.74	20.70	222.21	115.28	428.32
2012/13	10.54	17.81	187.66	111.07	317.08
Total	ϕX X59.24	$\phi\psi$ X96.08	$\phi X\psi$ X1108.55	$\phi\varepsilon^2$ X3508.86	$\phi\psi^2$ X1893.39

Source: Annual Report of HBL

$$r = \frac{5x1108.55 - 59.24x96.08}{\sqrt{5x3508.86 - (59.24)^2}\ \sqrt{5x1893.39 - (96.08)^2}}$$

= -0.082

$$\text{P.E.} = \frac{0.6745\left[1 - (-0.082)^2\right]}{\sqrt{5}}$$

= 0.3

For NSBI

Fiscal Year	Debt Equity Ratio (X)	ROE (Y)	XY	X^2	Y^2
2008/09	16.43	18.28	300.34	269.94	334.16
2009/10	14.02	15.46	216.75	196.56	239.01
2010/11	14.50	15.62	226.49	210.25	243.98
2011/12	17.16	15.02	257.63	294.40	225.46
2012/13	16.06	20.31	326.06	257.80	412.39
Total	ϕX X78.16	$\phi\psi$ X84.68	$\phi X\psi$ X1327.28	$\phi\varepsilon^2$ X1228.96	$\phi\psi^2$ X1455.01

Source: Annual Report of NSBI

$$r = \frac{5x1327.28 - 78.16x84.68}{\sqrt{5x1228.96 - (78.16)^2}\ \sqrt{5x1455 - (84.68)^2}}$$

= 0.298

$$\text{P.E.} = \frac{0.6745\left[1 - 0.298^2\right]}{\sqrt{5}}$$

=0.275

For NIBL

Fiscal Year	Debt Equity Ratio (X)	ROE (Y)	XY	X^2	Y^2
2008/09	11.07	20.50	226.94	122.54	420.25
2009/10	10.05	24.40	245.22	101.00	595.36
2010/11	9.13	20.42	186.43	83.36	416.98
2011/12	9.87	17.18	169.53	97.40	295.09
2012/13	9.42	27.28	256.94	88.73	744.04
Total	ϕX X49.54	$\phi\psi$ X109.78	$\phi X\psi$ X1085.06	$\phi\varepsilon^2$ X493.03	$\phi\psi^2$ X2471.72

Source: Annual report of NIBL

$$r = \frac{5x1085.06 - 49.54x109.78}{\sqrt{5x493.03 - (49.54)^2}\sqrt{5x2471.72 - (109.78)^2}}$$

$= 0.228$

$$\text{P.E.} = \frac{0.6745(1-0.228^2)}{\sqrt{5}}$$

$= 0.286$

APPENDIX-13

Correlation coefficient between Debt-Equity Ratio (X) and Return on Assets (Y)

For EBL

Fiscal Year	DE Ratio(X)	ROA(Y)	XY	X^2	Y^2
2008/09	14.24	1.73	24.64	202.78	2.99
2009/10	12.63	2.01	25.39	159.52	4.04
2010/11	11.53	2.01	23.18	132.94	4.04
2011/12	12.36	1.95	24.15	152.77	3.82
2012/13	12.62	2.24	28.23	159.19	5.01
Total	ϕX X63.38	$\phi\psi$ X9.94	$\phi X\psi$ X125.58	$\phi\varepsilon^2$ X807.20	$\phi\psi^2$ X19.90

Source: Annual Report of EBL

$$r = \frac{N\phi\varepsilon\psi - \phi\varepsilon \cdot \phi\psi}{\sqrt{N\phi\varepsilon^2 - (\phi\varepsilon)^2}\sqrt{N\phi\psi^2 - (\phi\psi)^2}}$$

$$= \frac{5x125.58 - 63.38x9.94}{\sqrt{5x807.20 - (63.38)^2}\sqrt{5x19.90 - (9.94)^2}}$$

= -0.577

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

$$= \frac{0.6745(1 - (-0.577)^2)}{\sqrt{5}}$$

= 0.201

For HBL

Fiscal Year	DE Ratio(X)	ROA(Y)	XY	X^2	Y^2
2008/09	11.42	1.91	21.81	130.42	3.65
2009/10	16.75	1.19	19.93	280.56	1.42
2010/11	9.79	1.91	18.70	95.84	3.65
2011/12	10.74	1.76	18.93	115.28	3.11
2012/13	10.54	1.54	16.26	111.07	2.38
Total	ϕX X59.24	$\phi\psi$ X8.32	$\phi X\psi$ X95.64	$\phi\varepsilon^2$ X3508.86	$\phi\psi^2$ X14.20

Source: Annual Report of HBL

$$\frac{5x95.64 - 59.24x8.32}{\sqrt{5x350.8.86 - (59.24)^2}\sqrt{5x14.20 - (8.32)^2}}$$

= -0.093

$$\text{P.E.} = \frac{0.6745(1 - (-0.093)^2)}{\sqrt{5}}$$

= 0.299

For NSBI

Fiscal Year	DE Ratio(X)	ROA(Y)	XY	X^2	Y^2
2008/09	16.43	1.05	17.25	269.94	1.10
2009/10	14.02	1.03	14.44	196.56	1.06
2010/11	14.50	1.01	14.65	210.25	1.02
2011/12	17.16	0.83	14.19	294.40	0.68
2012/13	16.06	1.19	19.12	257.80	1.42
Total	ϕX X78.16	$\phi\psi$ X5.11	$\phi X\psi$ X79.64	$\phi\varepsilon^2$ X1228.96	$\phi\psi^2$ X5.28

Source: Annual Report of NSBI

$$r = \frac{5x79.64 - 78.16x5.11}{\sqrt{5x1228.96 - (78.16)^2}\sqrt{5x5.28 - (5.11)^2}}$$

= -0.373

$$P.E. = \frac{0.6745\sqrt{1 - (-0.373)^2}}{\sqrt{5}}$$

= 0.26

For NIBL

Fiscal Year	DE Ratio(X)	ROA(Y)	XY	X^2	Y^2
2008/09	11.07	1.70	18.82	122.54	2.89
2009/10	10.05	2.21	22.21	101.00	4.88
2010/11	9.13	2.02	18.44	83.36	4.08
2011/12	9.87	1.58	15.60	97.40	2.50
2012/13	9.42	2.62	24.66	88.73	6.85
Total	ϕX X49.54	$\phi\psi$ X10.13	$\phi X\psi$ X99.73	$\phi\varepsilon^2$ X493.03	$\phi\psi^2$ X21.21

Source: Annual Report of NIBL

$$r = \frac{5x99.73 - 49.54x10.13}{\sqrt{5x493.03 - (49.54)^2}\sqrt{5x21.21 - (10.13)^2}}$$

= -0.521

$$P.E. = \frac{0.6745\sqrt{1 - (-0.521)^2}}{\sqrt{5}}$$

= 0.22

APPENDIX-14
Calculation of S.D & Coefficient of variation.

For Debt Ratio

	2008/09	2009/10	2010/11	2011/12	2012/13	Mean	S.D	CV(%)
EBL	0.93	0.93	0.92	0.93	0.93	0.93	0.005	0.54
HBL	0.95	0.92	0.91	0.91	0.91	0.92	0.018	2.00
NSBI	0.94	0.93	1.00	0.94	0.94	0.95	0.025	2.60
NIBL	0.92	0.91	0.90	0.91	0.90	0.91	0.006	0.67

Debt to Equity Ratio

	2008/09	2009/10	2010/11	2011/12	2012/13	Mean	S.D	CV(%)
EBL	14.24	12.63	11.53	12.36	12.62	12.68	0.983	7.75
HBL	11.42	16.75	9.79	10.74	10.54	11.85	2.802	23.65
NSBI	16.43	14.02	14.50	17.16	16.06	15.63	1.325	8.48
NIBL	11.07	10.05	9.13	9.87	9.42	9.91	0.744	7.51

Interest Coverage Ratio

	2008/09	2009/10	2010/11	2011/12	2012/13	Mean	S.D	CV(%)
EBL	0.96	0.81	0.56	0.54	1.06	0.78	0.234	29.80
HBL	2.10	1.37	1.42	1.54	1.71	1.63	0.295	18.09
NSBI	1.54	1.40	1.00	1.27	1.49	1.34	0.216	16.11
NIBL	1.78	1.76	1.49	1.43	2.09	1.71	0.262	15.36

Return on Total Assets

	2008/09	2009/10	2010/11	2011/12	2012/13	Mean	S.D	CV(%)
EBL	1.73	2.01	2.01	1.95	2.24	1.99	0.181	9.10
HBL	1.91	1.19	1.91	1.76	1.54	1.66	0.304	18.29
NSBI	1.05	1.03	1.01	0.83	1.19	1.02	0.130	12.71
NIBL	1.70	2.21	2.02	1.58	2.62	2.03	0.415	20.49

Return on Share holder's Equity (ROE)

	2008/09	2009/10	2010/11	2011/12	2012/13	Mean	S.D	CV(%)
EBL	26.24	29.85	25.24	26.11	30.47	27.58	2.396	8.69
HBL	22.94	14.02	20.62	20.70	17.81	19.22	3.428	17.84
NSBI	18.28	15.46	15.62	15.02	20.31	16.94	2.279	13.46
NIBL	20.50	24.40	20.42	17.18	27.28	21.96	3.924	17.87

DPS

	2008/09	2009/10	2010/11	2011/12	2012/13	Mean	S.D	CV(%)
EBL	30.00	30.00	50.00	0.00	50.00	32.00	20.49	64.04
HBL	12.00	11.84	16.84	13.42	10.00	12.82	2.55	19.93
NSBI	2.10	5.00	5.00	5.00	7.50	4.92	1.91	38.87
NIBL	20.00	25.00	50.00	30.00	35.00	32.00	11.51	35.97

Overall Capitalization (K_o)

	2008/09	2009/10	2010/11	2011/12	2012/13	Mean	S.D	CV(%)
EBL	0.06088	0.05266	0.11286	0.1209	0.0888	0.0872	0.0303	34.79
HBL	0.0896	0.1573	0.2858	0.2686	0.1779	0.1959	0.0814	41.55
NSBI	0.07515	0.1617	0.1778	0.2537	0.1781	0.1693	0.0636	37.59
NIBL	0.0870	0.2485	0.4016	0.2686	0.1738	0.2359	0.1170	49.58

Cost of Equity $fK_e A$

	2008/09	2009/10	2010/11	2011/12	2012/13	Mean	S.D	CV(%)
EBL	0.062	0.0918	0.1156	0.1347	0.0907	0.0990	0.0276	27.86
HBL	0.0481	0.0444	0.0883	0.0975	0.0784	0.0713	0.0239	33.52
NSBI	0.0266	0.0465	0.058	0.0568	0.0586	0.0493	0.0136	27.63
NIBL	0.0392	0.1135	0.1437	0.0851	0.0927	0.0948	0.0385	40.61

DFL

	2008/09	2009/10	2010/11	2011/12	2012/13	Mean	S.D	CV(%)
EBL	2.04	2.26	2.82	2.68	1.94	2.35	0.386	16.44
HBL	1.91	3.68	3.38	2.84	2.40	2.84	0.717	25.22
NSBI	2.86	3.53	3.12	4.67	3.04	3.44	0.728	21.14
NIBL	2.29	2.32	3.03	3.33	1.92	2.58	0.581	22.53