

CHAPTER - I

INTRODUCTION

1.1 Background of the Study

Nepal is a land-locked mountainous country situated between two Asian giant china and India, both having well developed economic condition, it is a small country with an area covering 1,47,181 square kilometer and also ranked to least developing country with per capita income U.S. \$ 240. around 38% of the Nepalese are under poverty line. The poverty eradication plan of Nepal is not efficient due to the difficult of geographical structure and corruption. The nation has not been able to exploit the natural researches scattered all over the country. It is one of the second richest country for hydropower with potentiality of 83,000 megawatts but due to its developing nature is not being able to utilize its full capacity and has been using only about 0.6% of full capacity.

The development of a country is measure on its economic indices. Nepal like all underdeveloped countries has been facing problem of accelerating the economic development. Development of industrial sector: among other sectors, is equally essential for the rapid economic development of the country. But it is impossible without the development of different sector like banks, agriculture and industry etc. of the economy. Nepal, like any other country has been laying emphasis on the uplifting of its economy. The process of economic development depends upon various factors. To develop the nation investment is essential. Investment simply means capital. Capital is one of the prime factors that is necessary for the development and advancement of the country. The developing countries are facing difficulties in capital because they have only small amount of household to be used for investment. This is very small saving amount for this purpose. Nepalese government is directed the policies toward foreign direct investment (FDI) to fulfill the lack capital. Since from past few years, the situation of country is deteriorating day by day. Uncertainty and fear have bounded every sectors of the economy. So the FDI is not possible on that situation. Every year the government is assigning fewer funds for development purpose. This has seriously hit not only the economic growth of the country but also the investment environment in the country.

Banks and financial institutions are viewed as catalyst and lubricant in the process of economic growth and the prosperity of the country. The mobilization of domestic resources, capital formation and its proper utilization plays an important role in the economic development of a country. Every financial institution, big or small, be it a commercial bank or a finance company or a co-operative bank, play an important role in the development of country.

The capital structure concept occupies an important place in the theory of financial management. The term capital structure refers to the proportion of debt and equity capital or the composition of long term sources of financing, such as preference capital, debenture, and long term debt and equity capital including services and surpluses (i.e. retained earnings) and excluded short term debts. Thus the financing decision of a firm relates to choice of proportion of debt and equity to finance the investment requirement. a proper balance between debt and equity is necessary to insure a trade -off between risk and return to the shareholders. a capital structure with reasonable proportion of debt and equity capital is called optimal capital structure. However, it can be expected that the capital structure decision affect the total value of the firm. They should select such financing mix that will maximize the shareholders' wealth. Optimum capital structure may be defined as the capital structure or combination of debt and equity that leads to the maximum value of the firm.

Optimum leverage/capital structure can be defined as the mix of debt and equity which will maximize the market value of a company, i.e. the aggregate value of the claims and the ownership interests represented on the credit side of the balance sheet. Further the advantages of having an optimum financial structure, such an optimum does exist, is two-fold.it maximize the value of the company creating investing opportunities. Also by increasing the firm's opportunity to engage in future wealth-creating investment. It increase the economy rate of investment and growth (Solomon, 1969)

Decision making is a process of choosing among alternatives. Alternative having minimum cost with reasonable return compare to other is acceptable. The cost of capital concept occupies a pivotal place in the theory of financial management as a

criterion of allocating capital. The cost of capital refers to the discount rate that would be used in determining the present value of the estimated future cash proceeds and eventually deciding whether the project is worth undertaking or not (Bagges, 1963). The concept of cost of capital is significant not only as investment criteria but can also be used to evaluate the financial performance of the top management (Bhattacharya, 1970).

In addition, the cost of capital concept helps management in moving towards its target capital structure or optimal capital structure provided. There exists relationship between the two, capital and cost of capital both are important in maximizing the wealth of the shareholders and value of the firm.

1.2 Origin and Growth of Modern Banks

Despite strong criticism from the church regarding charging of interest, Modern Banking sowed its seed in the Medieval Italy and Bank of Venice was set-up in 1157 A.D. in Venice. It is regarded as first modern bank. Subsequently, Bank of Barcelona (1401) and Bank of Genoa (1407) were established. The Lombard's migrated to England and other parts of Europe from Italy and are regarded for their role in the development and expansion of the Modern Banking. Bank of Amsterdam, set-up in 1609 was very popular then. The Bank of Hindustan established in 1770 is regarded as the first bank in India.

Though Bank of England was established in 1694, the growth of banks accelerated only after the introduction of "Banking Act 1833" in United Kingdom as it allowed opening Joint Stock Company Banks.

Development of Banking in Nepal

Banking concept existed even in the ancient period when the goldsmiths and the rich people used to issue the reception to the common people again the promise of safe keeping of their valuable items on the presentation of receptions, the depositors would get back their gold and valuable after paying a small amount for safe-keeping and saving. The gold smiths and the moneylender became bankers of those days who started performing two functions of modern banking accepting deposits and advancing loans.

The stage wise development of banking can be presented as follows:

The First Phase of Banking Development

Eighth (8th) century, King "Gunkamdev" renovated the Kathmandu city by taking loan. At the end of same century merchant named "Shankhadhar Shakhwa" has started the "New Year" Nepal Sabmat after freeing all people of Kathmandu from the debt.

In the 11th century, during Malla dynasty, there was an evidence of professional money lender and buyer. Tejarath Adda was established in 1877 A.D. which provided loan at very low rate of 5%.

The Second Phase of Banking Development

The modern banking in Nepal has started with establishment of Nepal Bank Ltd. In 1994 B.S. Having felt the need of development of banking sector and to help the government formulate monetary policies, Nepal, Rastra Bank was set-up in 2013 B.S. as the Central Bank of Nepal.

In B.S. 2022, Government set-up Rastriya Banijya Bank as a fully government owned commercial bank. The agriculture development bank was established B.S. 2024. This bank was established with the objective of increasing the life standard of the people who are involved in agriculture.

The Third Phase of Banking Development

The process of development of banking system in Nepal was not satisfactory. Nepal was observing the events that were taking places in the world also. The country can't change its status by using only its own capital in the country without importing the new technology from foreign country and accordingly, law and policy have been enacted by the state to encourage the foreign investment on banking sector. From this, the real form to the development of the banking system started in Nepal. In order to establish and develop other joint venture commercial banks and other financial institution, Nepal adopted Liberal free economic policy. Accordingly, Nepal is allowed to establish different joint venture banks under the collaboration with foreign banks.

The Fourth Phase of Banking Development

From 2041 B.S., His Majesty's Government of Nepal established 5 rural development banks. They are as follows:

Eastern Rural Development Bank

Central Rural Development Bank

Western Rural Development Bank

Mid-western Rural Development Bank

Far-western Rural Development Bank

In order to establish and develop other joint venture commercial banks and other financial institution, Nepal adopted liberal economic policy. After 2041 B.S., the government gradually liberalized and opened up the financial sector, resulting in the rapid entry of the foreign banks. Later, in 2041 B.S. with the grand opening of Nabil Bank Ltd, other commercial banks started emerging in the private sectors. As a result, now there are altogether 32 commercial banks operating at different parts of the country. At present, the banking sector is more liberalized and there are various types of bank working in modern banking system. This includes central, commercial and development banks. Evolution of the information technology has revolutionized the banking sector is saving lots of time and money by implementing IT. Technology has changed the traditional method of the services of bank. Invention of different software and hardware, which are very essential and available for functioning bank such as Banking Software, ATM, E-banking, mobile banking and card like Debit Card, Credit Card, Prepaid Card etc which helps the customers as well as banks to operate and conduct their activities more efficiently and effectively. This helps bank to generate more customers, goodwill and profit.

Table No. 1
Major Players in Nepalese Financial System

S. No.	Organization Name
1	Central Bank
2	Commercial Bank
3	Development Bank
4	Finance Companies
5	Co-operatives
6	Micro credit financial institution
7	NGOs licensed by NRB
8	Insurance companies
9	Employee provident fund
10	Citizen investment trust

Commercial Banking System in Nepal

Banking in modern sense started with the inception of Nepal Bank Limited (NBL) on B.S. 1994/07/30 with 51% Government equity. NBL has staggering responsibility of attracting people towards banking sector from predominant moneylenders net and of expanding banking services. Being a commercial bank, it was natural that NBL paid more attention to profit generation business and preferred opening branches at urban centers.

The government however had study of stretching banking services to the nooks and corners of the country and also managing the financial system in a proper way. Thus, Nepal Rastra Bank (NRB) was established on B.S. 2013/01/14 with full government ownership as a Central Bank under NRB Act 2012 B.S. since then it has been functioning as the Government's Bank and has contributed to the growth of financial sector. The major challenge before NRB today is to ensure the robust health of financial institutions. Accordingly, NRB has been trying to charge itself and has introduced a host of prudential measures to safe guard the interest of the public. NRB is yet to do a lot of prove itself as a efficient supervisor. NRB really requires strengthening their policy making, supervision and inspection mechanism. For the integrated and speedy development of the country, the government set-up

Rastriya Banjiya Bank (RBB) in B.S. 2022/10/10 as a fully government owned commercial bank. As the name suggests, commercial banks are to carry out commercial transactions only. Nevertheless, commercial banks had to carry out the functions of all types of financial institutions. Hence, industrial development centre (IDC) was set-up in 2013 B.S. for industrial development but in 2016 B.S., IDC was converted to Nepal Industrial Development Bank (NIDC), after that in 2024 B.S. Agriculture Development Bank (ADB) was established to provide finance for agricultural producers so that agricultural productivity could be enhanced by introducing modern agricultural techniques.

In the late 2030s, to meet the need of healthy competition in the financial system, Nepal allowed the entry of foreign banks as Joint Venture with up to a maximum of 50% equity participation. Responding to this, Nepal Arab bank Limited (now changed name as Nabil Bank Ltd.) became the first bank to be established under such policy in the year 2041 B.S.

Table No. 2
Growth of Commercial Banks in Nepal

S.N.	Name of Commercial Bank	Operation Date	Head Office
1	Nepal Bank Limited	1994/07/30	Dharmapath, Kathmandu
2	Rastriya Banjiya Bank	2022/10/10	Singhadurbar, Kathmandu
3	Agricultural Development Bank Limited	2024/10/07	Ramshahpath, Kathmandu
4	NABIL Bank Limited	2041/03/09	Kantipath, Kathmandu
5	Nepal Investment Bank Limited	2042/11/26	Durbarmarg, Kathmandu
6	Standard Chartered Bank Nepal Limited	2043/10/16	New Baneshwor, Kathmandu
7	Himalayan Bank Limited	2049/10/05	Thamel, Kathmandu
8	Nepal SBI Bank Limited	2050/03/23	Hattisar, Kathmandu
9	Nepal Bangladesh Bank Limited	2050/02/23	New Baneshwor, Kathmandu
10	Everest Bank Limited	2051/07/01	Lazimpat, Kathmandu
11	Bank of Kathmandu Limited	2051/11/28	Kamaladi, Kathmandu
12	Nepal Credit & Commerce Bank Limited	2053/06/28	Siddharthanagar, Rupandehi
13	Lumbini Bank Limited	2055/04/01	Narayanghad, Chitwan
14	Nepal Industrial & Commercial Bank Limited	2055/04/05	Biratnagar, Morang
15	Machhapuchhre Bank Limited	2057/06/17	Pokhara, Kaski
16	Kumari Bank Limited	2057/12/21	Putalisadak, Kathmandu
17	Laxmi Bank Limited	2058/12/21	Birgunj, Parsa
18	Siddhartha Bank Limited	2059/09/09	Kamaladi, Kathmandu
19	Global Bank Limited	2063/09/18	Birgunj, Parsa
20	Citizens Bank International Limited	2064/01/17	Kamaladi, Kathmandu
21	Prime Commercial Bank Limited	2064/06/07	Newroad, Kathmandu
22	Sunrise Bank Limited	2064/06/25	Gairidhara, Kathmandu
23	Bank of Asia Nepal Limited	2064/06/25	Tripureshwor, Kathmandu
24	Development Credit Bank Limited	2057/10/10	Kamaladi, Kathmandu
25	NMB Bank Limited	2053/09/11	Babarmahal, Kathmandu
26	Kist Bank Limited	2059/11/09	Anamnagar, Kathmandu
27	Janata Bank Nepal Limited	2067/01/15	New Baneshwor, Kathmandu
28	Mega Bank Limited	2067/04/07	Kantipath, Kathmandu
29	Century Commercial Bank Ltd.	2067/11/26	Putalisadak, Kathmandu
30	Civil Bank Limited	2067/08/10	Kamaladi, Kathmandu
31	Commerz and Trust Bank Nepal Limited	2067	Kamaladi, Kathmandu
32	Sanima Commercial Bank Limited	2061	Naxal, Kathmandu

Source: www.nrb.org.np

1.3 Development of Joint Venture Banks in Nepal

In global prospective, Joint Ventures are a mode of trading through partnership among nations and also a form of negotiation between various group of industries and traders to achieve mutual exchange of goods and services for sharing comparative advantages.

A joint venture is defined as "The joining of forces between two or more enterprises for the purpose of carrying out a specific operation (industrial or commercial investment production or trade)"

In the fiscal year 2039/40, new banking policy was introduced for the establishment of new banks by the joint investment of foreign nations. Its objective was to create healthy, competitive banking system to provide cheap banking facilities to the people and to meet the shortage of funds needed for investment in the development work. (Joshi Deepak: "Investment Policy of NRB", 1978)

After the introduction of new banking policy, Nepal Arab bank (NABIL) was established in 1984 A.D. (2041 B.S.) as a first joint venture bank in Nepal. The bank is the product of a joint venture with Dubai Bank Limited of United Arab Emirates. After that in 1986 and 1987 two other joint venture banks namely Nepal Indoswez Bank Ltd. Which is joint venture with Indoswez Bank of Paris and Nepal Grindlays Bank Limited which is also a joint venture between financial institutions of Nepal and public and gridlays Bank of the United Kingdom were established respectively.

The establishment of Himalayan Bank Limited as a joint venture with Habib Bank Ltd., Pakistan, Nepal SBI Bank as a Joint Venture bank with an Associate of state Bank of India, India's Premier Bank. Nepal Bangladesh Bank as a Joint Venture with the Bangladesh Bank, Bank of Kathmandu as a Joint Venture Bank with Thailand Bank, Everest Bank as a Joint Venture with Punjab National Bank, India. Nepal Bank of Ceylon as a Joint Venture Ban with Sri-Lanka Bank is examples of expansion of baking industry in Nepal.

Therefore, the joint venture between foreign banks and Nepalese Banks should be encouraged in Nepal especially in merchant and investment banking. (Shrestha Sunity: " Portfolio Behaviour of Commercial Banks in Nepal: 1995).

1.4 Brief Introduction of Sample Joint Venture Banks

1.4.1 NABIL Bank Limited (NABIL)

Nepal Arab Bank Limited (NABIL) is the first joint venture bank of Nepal which was established on 12th July 1984 A.D. under the Commercial Bank Act, 2031 (1974 A.D.) and the company Act 2021 B.S. (1965 A.D.) and it was listed in NEPSE in 1986 A.D. (2042/09/08 B.S.). NABIL Bank was incorporated under a technical service agreement with Dubai Bank Limited and was renamed as Nabil Bank Limited (NABIL) on 1st January 2002. In the beginning the authorized capital of this bank was Rs. 100 million and paid up capital was Rs. 28 million 400 thousands. The 50% share of NABIL own by Dubai Bank Limited (DBL) was transferred to Emirates Bank International Limited (EBIL), Dubai later on EBIL sold its entire 50% share to National Bank Limited, Bangladesh (NBLB). Now, NBLB is managing the bank in accordance with the technical services agreement signed between it and the bank of June 1995. The bank introduced on Automatic Teller Machine (ATM) first time in Nepal, in three places in the valley at Kantipath, New Road and Lalitpur. The bank has its corporate head office at Kamaladi, Kathmandu. The bank at present has branches in Kahtmandu valley and outside of valley. It operates exchange counter at Tribhuvan International Airport. Now, this counter is restricted in departure longue and domestic terminal only.

NABIL is the pioneer in introducing credit cards in Nepal. The bank is a principal member of visa and master card international since early 1990. It has widest range of services in credit cards which include acquiring of all kinds of cards under visa and master card brands. It also acquires diners cards being a sole agent for the country and has arrangement of sharing with American Express cords. The bank issues widest range of credit and debit cards under the brands of visa and master card to accountholders as well as non accountholders. The bank is largest institution in the country with a wide spread merchants and ATM network throughout the country. NABIL Bank promises to always be "Your Bank at Your Service".

Share ownership of NABIL Bank Limited as at 15th July 2010 (32nd Ashadh 2067)

N. B. International Ltd.	50%
Nepal Industrial Development Corporation	6.15%
Rastriya Beema Sansthan	9.67%
Nepal Stock Exchange Ltd.	0.33%
Other Founder Group	3.85%
General Public	30%

In the above share subscription of NABIL, the majority of shares are owned by N.B. International Ltd.

Capital Structure of NABIL Bank Ltd.

The capital structure of NABIL Bank Ltd. is as follows (year 2009/10 after year 2005/06)

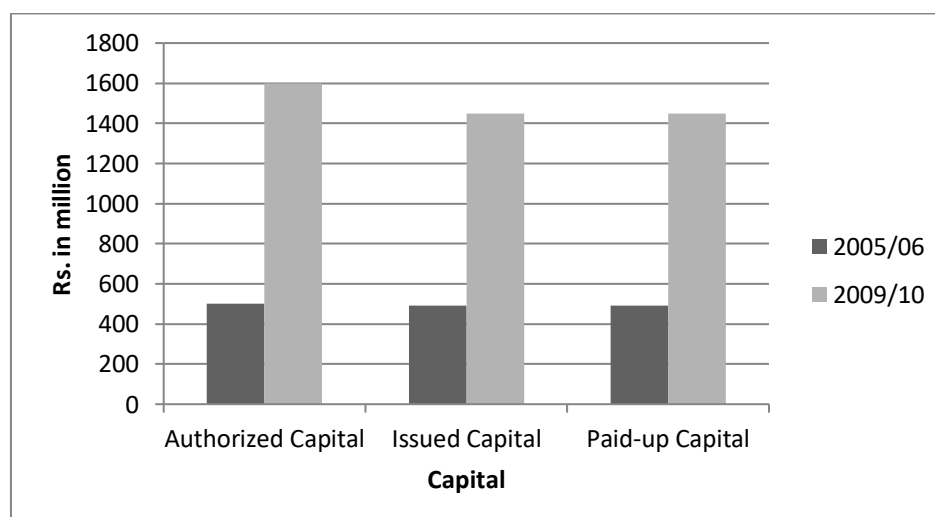
Table No. 3
Capital Structure of Nabil Bank Ltd.

	2005/06	2009/10
Authorized Capital	500	1600
Issued Capital	491.6544	1449.12
Paid-up Capital	491.6544	1449.12

Figure No. 1

Presentation of Capital Structure by Multiple Bar Diagram

(Rs. in million)



NABIL Bank Limited was Authorized Capital of Rs. 500000000 divided into 5000000 ordinary shares of Rs. 100 each in year 2005/06 but now (year 2009/10) it has been increased to Rs. 1600000000 divided into 16000000 ordinary shares of Rs. 100 each as per Nepal Rastra Bank directives for commercial banks. It had issued capital of Rs. 491654400 divided into 4916544 ordinary shares of Rs. 100 each and paid-up of Rs. 491654400 divided into 4916544 ordinary shares of Rs. 100 each in year 2005/06. The issued capital has also been increased to Rs. 1449124000 divided into 14491240 ordinary shares of Rs. 100 each and paid-up of Rs. 1449124000 divided into 14491240 ordinary shares of Rs. 100 each in year 2009/10.

1.4.2 Standard Chartered Bank Nepal Limited (SCBNL)

Standard chartered Bank Nepal Limited (SCBNL) which was incorporated in 1985 with the name of Grindlays Bank Ltd., as a third commercial joint venture bank of Nepal under the Commercial Bank Act 1974 (2031 B.S.) and the company Act 1965 (2021 B.S.). the bank originally started its operation in 1986. The 50% of the equity share capital was originally owned by ANZ Grindlays Bank, which managed and controlled the overall activities of the bank. Later on, the ownership of 50% share of ANZ Gridlays Bank was transferred to Standard Chartered Group. Due to change in 50% ownership, its name changed to standard chartered bank Nepal Limited (SCBNL) in 16th July 2001. Standard Chartered Group employs almost 60000 people, representing over 100 nationalities in over 50 countries in the Asia, Africa, the middle east, Europe and the America. Today the bank is an integral part of standard chartered Group. Who has 75% ownership in the company with 25% owned by the Nepalese public.

The Bank enjoys the status of the largest international bank currently operating in Nepal. An integral part of the only international banking group currently operating in Nepal. The bank enjoys an impecable reputation of a leading financial institutions in the country. With 15 points of representation and 16 ATMS across the kingdom and with around 350 local staff. Standard chartered Bank Limited is in a position to serve its customers through a large domestic network. In addition to which the global network of standard chartered group gives the bank a unique opportunity to provide truly international banking in Nepal. The bank recently has

three branches in valley at New Baneshwor, Lazimpat and Lalitpur. Besides, the bank has 10 branches outside valley in Biratnagar, Pokhara (Lakeside & Newroad), Dharan, Bhairahawa, Hetauda, Butwal, Nepalgunj, Birgunj and Narayanghad. The bank also has 4 extension counters at UN counter (Lalitpur), B.P. Koirala Medical College (Dharan), Brish Gurkhas ppo (Pokhara) and Manipal (Pokhara).

The bank's brand promise is "Leading by Example to be the right partner".

Share ownership of Standard Chartered Bank Nepal Ltd. as at 15th July 2010 (31st Ashadh 2067)

Standard Chartered Grindlays Ltd., Australia	50%
Standard Chartered Bank, UK	25%
General Public	25%

In the above share subscription of SCBNL, the majority of shares are owned by Standard Chartered Group.

Capital Structure of Standard Chartered Bank Nepal Ltd.

The capital structure of Standard Chartered Bank Ltd. is as follows (year 2009/10 after year 2005/06)

Table No. 4
Capital Structure of Standard Chartered Bank Nepal Ltd.

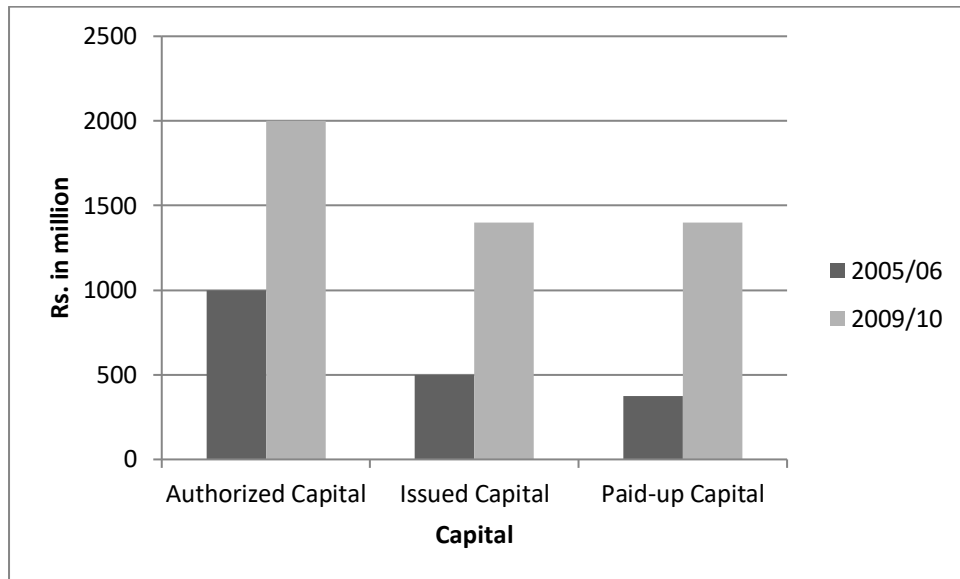
(Rs in millions)

	2005/06	2009/10
Authorized Capital	1000	2000
Issued Capital	500	1398.48
Paid-up Capital	374.6404	1398.48

Figure No. 2

Presentation of Capital Structure by Multiple Bar Diagram

(Rs. in million)



Standard Chartered bank Nepal limited was authorize capital of Rs 1000000000 divided into 10000000 ordinary shares of Rs. 100 each in year 2005/06 but it has been changed in year 2009/10. It had issued capital of Rs 500000000 divided into 5000000 ordinary shares of Rs. 100 each and paid of Rs. 374640400 divided into 3746404 ordinary shares of Rs. 100 each in year 2005/06. The issued capital has also been increased to Rs. 1398483600 divided into 13984836 ordinary shares of Rs. 100 each and paid-up of Rs. 1398483600 divided into 13984836 ordinary shares of Rs. 100 each in year 2009/10.

1.4.3 Himalayan Bank Limited (HBL)

Himalayan Bank Limited (HBL) was established in 1992 A.D. (5th Magh 2049 B.S.) under company act 1964 and commercial Bank Act 2031 B.S. by the distinguished business personalities of Nepal in partnership with employees provident fund and Habib Bank Limited, one of the largest commercial bank of Pakistan. In other words, it is a joint venture bank with Habib Bank Limited of our SAARC country, Pakistan. This is a first joint venture bank which is managed in Nepali chief executive. The operation of the bank started from 1993 in the month of February. It is also the first commercial banks of Nepal with maximum share holding by the Nepalese sectors. Besides commercial activities, the bank also offers industrial and merchant banking services. HBL proprietary card and

Millionaire deposit scheme beside services such as ATMs and Tele-Banking were first introduced by HBL. HBL started its services with 77 employees. Now its employees are over 300 like any other commercial bank in Nepal.

The bank at present has twelve branches in Kathmandu valley, namely in Thamel (which is also the head office and main branch), New road, Patan, Bhaktapur (Katunje), Maharajgunj, Teku, Chabahil, Syambhu and New baneshwor, Satdobato, Kakani, Sorhakutte. Besides 16 branches outside Kathmandu in Narayanghad, Hetauda, Biratnagar, Dharan, Butwal, Birgunj, Tandi, Bhairahawa, Banepa, Pokhara, Nepalgunj, Itahari, Palpa, Ghorahik Trisuli and Baglung, Birgunj, Parsa (Chitwan), Gorkha, Dhangadhi. The bank has a very aggressive plan of establishing more branches in different parts of the country in the near future. The Bank's corporate slogan is "Power to Lead".

Share ownership of Himalayan Bank Limited as at 15th July 2010 (32nd Ashad 2067)

Habib Bank of Pakistan	20%
Nepalese Founders	51%
Employees provident Fund	14%
General Public	15%

In the above share subscription of HBL, the majority of shares are owned by Nepalese founders.

Capital Structure of Himalayan Bank Limited

The Capital structure of Himalayan Bank Limited is as follows (year 2005/06 to after year 2009/10)

Table No. 5
Capital Structure of Himalayan Bank Limited

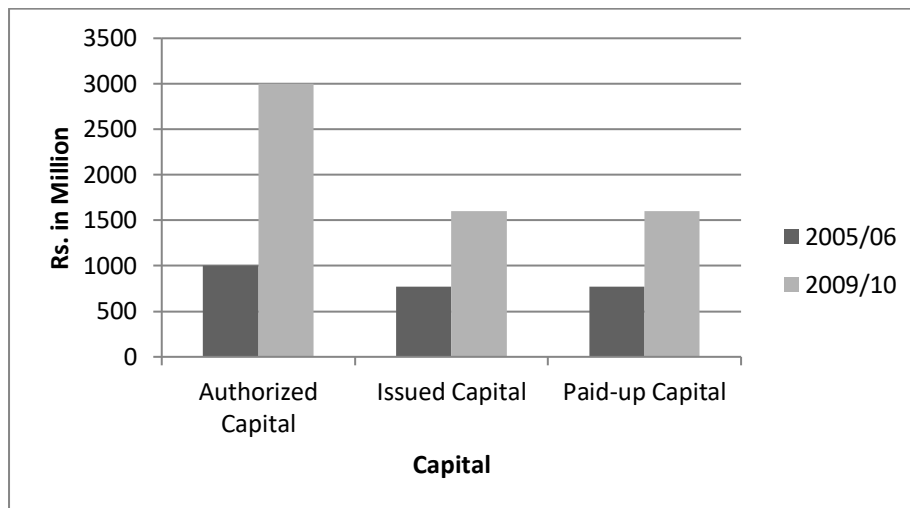
(Rs. in million)

	2005/06	2009/10
Authorized Capital	1000	3000
Issued Capital	772.20	1600
Paid-up Capital	772.20	1600

Figure No. 3

Presentation of Capital Structure by Multiple Bar Diagram

(Rs. in million)



Himalayan Bank Limited was Authorized capital of Rs.1000000000 divided into 10000000 ordinary shares of Rs. 100 each in year 2005/06 but now (year 2009/10) it has been increased to Rs. 3000000000 divided into 30000000 ordinary shares of Rs. 100 each. It has issued capital of Rs 772200000 divided into 7722000 ordinary shares of Rs. 100 each and paip-up Rs. 772200000 divided into 7722000 ordinary shares of Rs. 100 each in year 2005/06. The issued capital has also been increased to 1600000000 divided into 16000000 ordinary shares of Rs. 100 each and paid-up of Rs. 1600000000 divided into 16000000 ordinary shares of Rs. 100 each in year 2009/10.

1.4.4 Everest Bank Limited (EBL)

Everest bank Limited (EBL) was established in 1992 A.D. under the Company Act 1964 A.D. with an objective of extending efficient banking service to various segments of the society under the Commercial Bank Act 1974 A.D. (2031 B.S.). it is a joint venture between Punjab national Bank (PNB), India and Nepali promoters with public shareholders. PNB is the largest public sector bank of India having 109 years of banking history with more than 4400 offices all over India and is known for its strong procedures and a distinct work culture. EBL was once of the first banks to introduce any Branch Banking System (ABBS) in Nepal. EBL has introduced Mobile Vehicle Banking System to serve the segment deprived of

proper banking facilities through its Birtamod Branch, which is the first of its kind.

The bank at present has 15 branches in Kathmandu valley and 21 branches in outside of Kathmandu valley. Its head office is located at Lazimpat. The bank has been conferred with "Bank of the Year 2006, Nepal" by the banker, a publication of financial times, London for its spectacular performance under financial sector. The Bank's corporate Slogan in "... the name you can Bank upon!"

Share ownership of Everest bank Limited as at 15th July 2010 (32nd Ashadh 2067)

Punjab National Bank, India	20%
Nepalese Founders	50%
General Public	30%

In the above share subscription of EBL, the majority of shares are owned by Nepalese founders

Capital Structure of Everest Bank Limited

The capital structure of Everest bank Limited is as follows: (year 2005/06 to after year 2009/10)

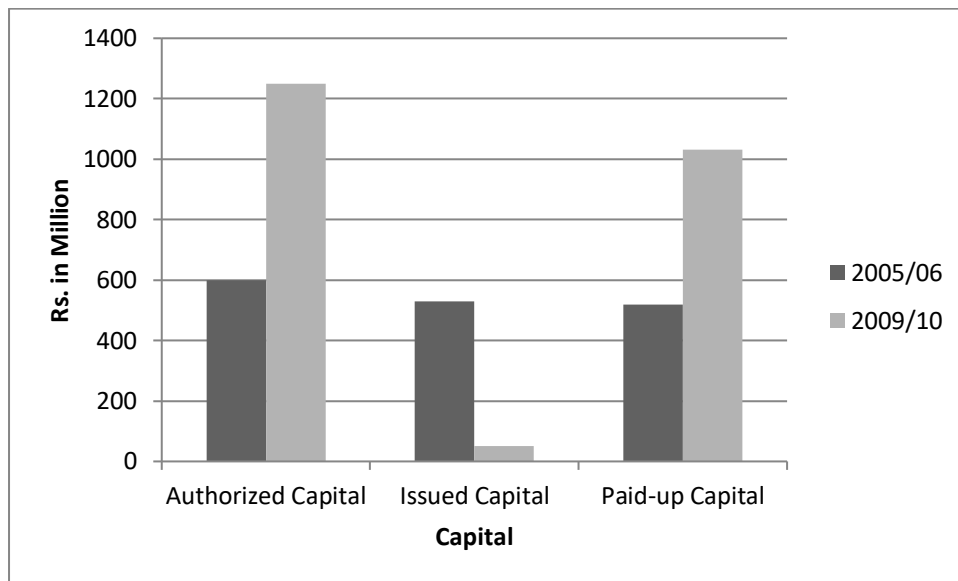
**Table No. 6
Capital Structure of Everest Bank Limited**

	Rs. in million	
	2005/06	2009/10
Authorized Capital	600	1250
Issued Capital	529.80	050
Paid-up Capital	518	1030.47

Figure No. 4

Presentation of Capital Structure by Multiple Bar Diagram

(Rs. in million)



Everest bank Limited was Authorized capital of Rs. 600000000 divided into 6000000 shares (4500000 ordinary share and 1500000, 9% cumulative irredeemable preference share) of Rs. 100 in year 2005/06 but now (year 2009/10) it has been increased to Rs 1250000000 divided into 12500000 shares (10500000 ordinary shares and 2000000, 7% cumulative convertible preference share) of Rs. 100 each as per Nepal Rastra Bank directives for commercial banks. It had issued capital of Rs. 529800000 divided into 5298000 shares (ordinary share and 1500000, 9% cumulative irredeemable preference share) of 3798000 of Rs. 100 each and paid up of Rs. 518000000 divided into 51800020 shares (3780000 ordinary share, 630000 proposed bonus share of last year and 1400000, 9% cumulative irredeemable preferences share) of Rs. 100 each in year 2005/06. The issued capital has also been increased to Rs. 1050000000 divided into 10500000 shares (8500000 ordinary shares and 2000000, 7% cumulative convertible preference share) of Rs. 100 each and paid-up of Rs 1030467300 divided into 8388210 shares (8304673 ordinary share and 2000000, 7% convertible preference shares) of Rs. 100 each in year 2009/10.

1.5 Statements of the Problems

Nepalese companies are not taking capital structure seriously. So, optimum capital structure does not exist at all. Companies are ruined by the excess burden of the cost of debt capital among the listed commercial banks.

Different companies have its own policy to operate business activities some business use only equity capital and others use only debt capital whereas some companies use both. So the determination of capital structure depends on company policy and cost of capital. In the beginning period of any companies they want to use only equity capital and do not wants debt in their capital due to high interest.

In this situation, the study deals with the following research questions.

1. Are the selected commercials banks having optimum capital structure?
2. Whether or not cost of capital declines with change in leverage?
3. Whether or not the other factors except capital structure affect the cost of capital and value of the firm as a whole?
4. What is the relationship of capital structure and other variables?
5. How does leverage affect the cost of equity?
6. Whether or not debt equity ratio affects the profitability of selected bank?

1.6 Objective of the Study

The basic objective of this study are to analyze the effects of capital structure on cost of capital and carry out ex-post evaluation in terms of rates of return and composite cost of capital in selected Nepalese joint venture banks. Under the guideline of these leading objectives, the following specific objectives are set in this study

- (i) To examine and analyze the current capital structure of selected joint venture banks.
- (ii) To analyze the relationship between capital structure, cost of capital and profitability of selected joint venture banks.
- (iii) To analyze the relationship between cost of equity and leverage of selected joint venture banks.

- (iv) To test the relationship between profitability and debt equity ratio of selected joint venture banks.
- (v) To suggest and recommend on the basis of major findings of the study.

1.7 Significance of the Study

The capital structure decision is a significance managerial decision. It influences the shareholders return and risk. Consequently, the market value of the share is affected by capital structure decision.

- The study compels the management of joint venture banks ltd. For self assessment of what they have done in the past and guides them in their future plans and program.
- The study enlightens the shareholders, depositors, creditors about the financial performance of the bank.
- Policy makers at the macro level that is government and NRB with also benefits regarding the formulation of future policies in regard to economic development.
- The costumers, financing agencies, stock exchange and stock traders are interested in the performance of banks and the customers both can identity to which banks they could go. The financial agencies can understand where the funds are most secured and stock exchanges stock broker can find the relative worth of stock of each bank.

1.8 Limitation of the Study

This study is simply a study for the partial fulfillment of MBS Degree, which has to be finished within a short span of time. This is not for from several limitations, which weaken the objective of the study. Some of the limitations are given below:

- This study is mainly based on the secondary data like balance sheet, profit & loss account and other related journals.
- The study is based on the data of 5 years only.
- The accuracy of study is based upon the record keeping of joint venture banks and its accuracy.

- Out of 6 joint venture banks, only 4 banks are taken into account to do the comparative study.
- This study is concerned with capital structure and cost of capital of selected joint venture banks.
- Limited resources and time has been utilized for preparing thesis. So micro analysis may not be available.

1.9 Organization of the Study

This study has been divided into five chapters. They are

- Introduction
- Review of Literature
- Research Methodology
- Presentation and Analysis of Data
- Summary, Conclusion and Recommendation

Introduction

The introduction chapter includes the background of the study, origin and growth of modern banks, development of joint venture banks in Nepal, brief introduction of sample joint venture banks, statement of the problem, objectives, significance limitations and organization of the study etc.

Review of Literature

The second chapter focuses on review of literature. It contains the review of books, reports, thesis and journals etc.

Research Methodology

The third chapter deals with the research methodology to be adopted for the study consisting research design, sources of data, population and sample and method of data analysis etc.

Presentation, Analysis and Interpretation

The fourth chapter deals with presentation, analysis and interpretation of data.

Summary, Conclusion and Recommendation

The last chapter will concerned with the major findings of the study, conclusion drawn from the findings and the recommendation of this study etc.

CHAPTER - II

REVIEW OF LITERATURE

The review of literature is a crucial aspect of planning of the study. The main purpose of literature review is to find out what work have been done in the area of the research problem. It deals with the basic concept of the factors which are needed for capital structure and cost of capital.

This chapter is concerned with the review of relevant literatures available in the books, Journals, articles, research reports, newspapers and policy documents which are published or unpublished. Every study is very much based on past knowledge, study and Experiences. The past knowledge or previous studies should not be ignored as it provides foundation to the present study. Various thesis works have done in different aspects of working capital of different organization are also reviewed for the purpose of justifying the study. Thus, setting a foundation for the present study, linking with the past studies and giving in continuity.

The chapter is broadly discussed under four headings:

- Conceptual Review
- Review of Related Articles
- Review of Dissertations
- Research Gap

2.1 Conceptual Review

This section is devoted to discuss briefly about the theoretical concept regarding the theories of capital structure, financial leverage, profitability and cost of capital.

2.1.1 Concept of Capital Structure

Simply, the structure of capital formation in an organization is known as capital structure. Capital structure by definition is the amount of long term debt,

preferred stock and common stock used to finance the firm. In other words, capital structure is the long-term source of financing used by the firm.

The term capital denotes the long-term funds of the firm. The long term funds of the firms are financed by two major components, i.e. debt capital and equity capital. Debt capital includes long term funds provided by the firm's owner. The mix of long term debt and equity maintained by the firm is called capital structure. Capital structure is one of the most complex areas of financial decision making due to its inter-relationship with other financial decision variables. A financial manager must understand the firms capital structure and its relationship to risk, return and value for attainment of its primary objective of wealth maximization (V.K Saxeno & C.D. Vashist, 2002: B.5.1)

A financial manager must strive to obtain the best financing mix or optimum capital structure for his/her firm. The firm's capital structure is optimum when the market value of share is maximized. The use of debt affects the return and risks of shareholders; this will increase the return on equity but also risk at the same time when the shareholders' return is maximized with the minimum risk, the market value per share will be maximized and firm's capital structure would be optimum (Van Horne, 1983: pp. 10). Capital structure is permanent financing of the firm represented primarily by long-term debt, preferred stock and common stock, but excluding all short term credit (Weston & Brigham. 1982: p. 555).

The importance of an appropriate capital structure is the obvious. There is a viewpoint that strongly supports the close relationship between leverage and value of firm. There is an equally strong body of opinion, which believes that financing mix or the combination of debt and equity has no impact on the shareholders' wealth and the decision on financial structure is irrelevant. In other words, there is nothing such as optimum capital structure (Khan & Jain, 1999: p.111).

Capital structure decision is one of the most important decisions that is taken by financial manager. It is because the capital structure affects weighted average cost of capital (WACC), value of the firm and risk position of the firm. The

optimal capital structure is the combination of debt, preferred stock and common equity that minimizes that WACC. At the capital structure where the WACC is minimized, the value of the firm securities is maximized. As a result, the minimum cost of capital structure is called optimal capital structure.

Some definition of capital structure is as follows:

"Capital structure is the mix (or proportion) of a firm's permanent long term financing represent by debt, preferred stock and common stock equity." (Van Horne, 2007).

"Capital structure is concerned with the analyzing the capital composition of the company." (Western and Brigham, 1996).

"Capital structure refers to the mix of long term sources of fund, such as debenture, long-term debt, preference share capital and equity share capital including reserves and surpluses i.e. retained earnings." (Pandey, 1981).

"The optimum capital structure may be defined as that capital structure or combination of debt and equity that leads to the maximum value of the firm." (Khan and Jain, 1997).

Hence by all these definition it conclude to only one think that is the mixture of debt and capital should be done in a optimal way from which we can get maximum result.

Now a days almost in every company debt and equity are used. In some companies more amount is collected from the equity where as in other companies more amount is collected from debt capital. The ratio of collecting such amount varies from company to company. The sources of equity and debt capital are as follows:

(I) Equity Capital

The amount of capital, which has been collected from the selling of share is known as equity capital. There can be different types of shares as

- a) Common Stock
- b) Preference Stock
- c) Bond
- d) Retained Earning

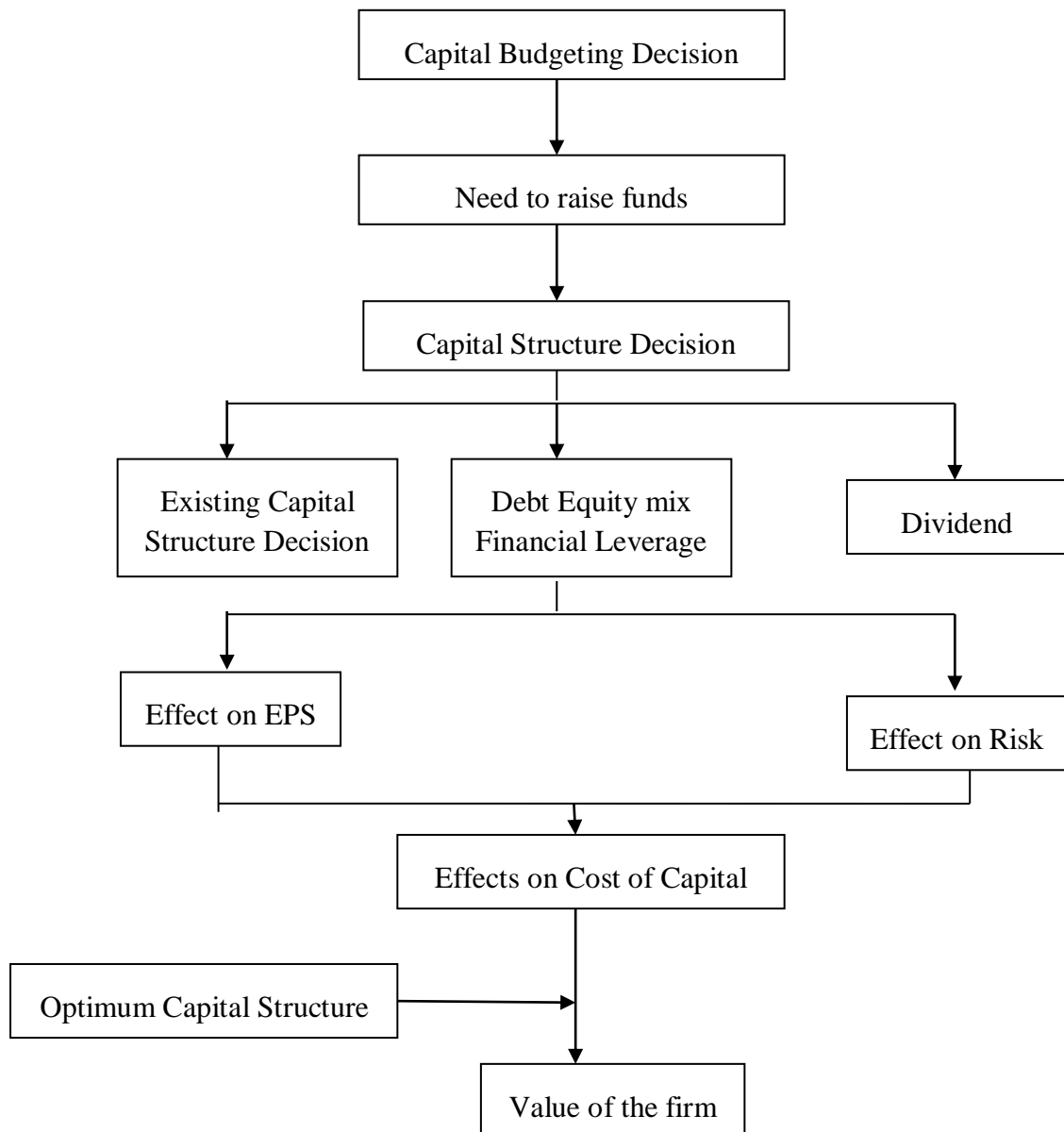
In capital certain amount is provided to the shareholders who are regarded as a dividend. So, all the shareholders will receive dividend for investing their capital in the shares.

(II) Debt Capital

This is another source of money collection to run the company. Here the debt capital is used in the company and certain amount of interest is paid to the creditors. There can be various debt in terms of expire of time.

- a) Short-term Debt
- b) Long-term Debt

**Figure No. 5
Capital Structure**



[Source: Pandey, Financial Management, Vikas Publishing House, 2004]

As shown in the above figure every organization will go through some process such as they have to collect some capital so they will get multiple choice either using the present capital structure or use from the dividend or to Debt equity mix which will have later effect on earning per share and risk, which after all effects the cost of capital and hence market value of firm.

2.1.1.1 Assumptions of Capital Structure (Khan & Jain, 1999)

Capital structure theory has some assumptions which are as follows:

- I. There are only two sources of funds used by a firm: Long-term debt and equity capital
- II. There are no existences of corporate income taxes. The assumption is removed later.
- III. The dividend payout ratio is 100% i.e. the total earnings are paid out as cash dividend to the shareholders and there is no retained earnings.
- IV. The firm's total assets are given and do not change. The investment decisions are in other words, assumed constant.
- V. The firm's total financing remains constant. The firm can change its degree of leverage either by selling shares and use the proceeds to retire debentures or by raising more debt and reduce the equity capital.
- VI. The net operation income (NOI or EBIT) is not expected to grow.
- VII. All investors are assumed to have the same subjective probability of the future expected EBIT for a given firm.
- VIII. The firm's business risk is constant over the time and it assumed to be independent of its capital structure and financial risk.
- IX. The firm is expected to continue indefinitely (i.e. perpetual life of the firm).

2.1.1.2 Classification of Capital Structure

There are different classifications of capital structure. These are mentioned below:

1. Simple Capital Structure

(i) Balance Sheet as at.....

Equity Share Capital	Rs. 4,00,000	Fixed Asset	Rs. 2,40,000
		Current Asset	1,60,000
	4,00,000		4,00,000

(ii) Balance Sheet as at.....

Equity Share Capital	Rs. 3,20,000	Fixed Asset	Rs. 2,40,000
Retained Earning	80,000	Current Asset	1,60,000
	4,00,000		4,00,000

2. Complex Capital Structure

(i) Balance Sheet as at.....

Equity Share Capital	Rs. 3,60,000	Fixed Asset	Rs. 2,40,000
Current Liabilities	40,000	Current Asset	1,60,000
	4,00,000		4,00,000

(ii) Balance Sheet as at.....

Equity Share Capital	Rs. 3,60,000	Fixed Asset	Rs. 2,40,000
Preference Share Capital	80,000	Current Asset	1,60,000
Retained Earnings	40,000		
	4,00,000		4,00,000

(iii) Balance Sheet as at.....

Equity Share Capital	Rs. 3,60,000	Fixed Asset	Rs. 2,40,000
Preference Share Capital	80,000	Current Asset	1,60,000
Retained Earnings	40,000		
Debentures and long-term loan	1,20,000		
	4,00,000		4,00,000

(iv) Mostly short-term liabilities are obtained in considering capital structure, but some authors (for example, J.R. Lindsay and A. W. Samtez) have held the view that considering the importance of bank credit, etc. It is better to include all liabilities (long-term and short-term) in consideration of capital structure. The view is not common view if this view is also considered, the capital structure will be shown as follows:

Balance Sheet as at.....

Equity Share Capital	Rs. 1,60,000	Fixed Asset	Rs. 2,40,000
Preference Share Capital	80,000	Current Asset	1,60,000
Retained Earnings	40,000		
Debentures and long-term loan	80,000		
	4,00,000		4,00,000

Normally, current liabilities are considered only in working capital analysis and not in the analysis of source of long-term funds.

3. Classification based on Sources

Under this category long-term funds can be financed from (i) internal, and (ii) external capital. Internal capital includes bonus issue, capital reserve and reserve and surplus. External capital refers to share capital, share premium, forfeited share, debentures and long-term liabilities.

4. Classification based on Ownership

i) Ownership capital comprises of equity share capital and retained earnings.

ii) Debt capital includes debentures and long term loans.

Preference share capital is treated both as part of ownership capital or as part of debt capital. It should be grouped based on the view taken by management.

5. Classification based on Cost Behaviour

Classification is also attempted based on cost behaviour of various sources of capital, i.e. fixed cost capital and variable cost capital.

Fixed cost capital includes preference share capital, debentures, long-term debt.

Variable cost capital includes equity share capital.

2.1.1.3 Theories of Capital Structure

Regarding capital structure different kinds of theories are propounded by different personalities. Some of the remain types of theories are:

- a) Relevant Theory (Capital Structure affects the value of firm)
 - i) Net Income (NI) Approach
 - ii) Traditional Approach
- b) Irrelevant Theory (Capital Structure does not affect the value of the firm)
 - i) Net Operating Income (NOI) Approach
 - ii) Modigliani and Miller Approach

2.1..3.1 Net Income (NI) Approach

David Durand proposed the net income approach. This approach states that firm can increase its value or lower the cost of capital by using the debt Capital (David, 1959). According to NI approach, there exists positive relationship between capital structure and valuation of firm and change in the pattern of capitalization bring about corresponding change in the overall cost of capital and total value of the firm. 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, 1959). The converse will hold true if ratio of debt to equity tends to decline. The approach assumes no change in the behaviour of both stockholders and debt holders as to the required rate of return in response to a change in the debt-equity ratio of the firm. They want to invest since debt holder are exposed to lesser degree of risk, assumed of a fixed rate of interest and are given preferential claim is relatively lower than that of equity holders. So, the debt financing is relatively cheaper than equity. For this reason, at constant cost of equity (K_s) and cost of debt (K_d), the overall cost of capital (K) declines 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 an 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.

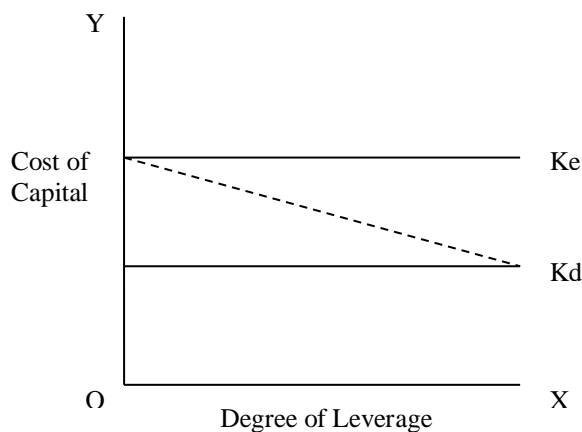
In summary, as per NI approach, increases in ratio of debt to total capitalization being about corresponding increase in total value of firm and decline in cost of capital. On the contrary, decreases in ratio of debt to total capitalization causes decline in total value of firm and increase cost of capital.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

Assumptions of Net Income Approach

- i. The cost of equity and debt remain constant to the acceptable range of leverage
- ii. The corporate income taxes do not exist.
- iii. The cost of debt rate is less than the cost of equity.
- iv. 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 firms cost of capital and the total market value of the firm is shown below.

Figure 6: The effect of leverage on the cost capital

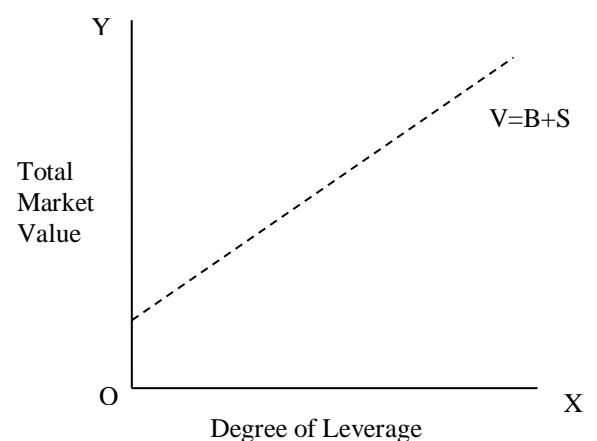


Where,

Ke=cost of equity

Kd=cost of debt

Figure 7: The effect of leverage on the total market value of the firm



K_o =cost of overall capitalization rate

V =Value of firm

B or D = Market value of debt holders

S = Market value of equity holders

D/S =Degree of Leverage

As the figures presented above, figure 6 shows a continuous decrease in K with the increase in debt-equity ratio, since any decrease in K directly contributes to the value of the firm, it increases with the increase in the debt-equity ratio (Figure 7). 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 unlevered 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 assumption that the use of debt does not change the risk perception of the investor. Consequently, the interest rate of debt (K_d) and equity capitalization rate (K_s) 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 (K_o).

2.1.1.3.2 Net Operating Income (NOI) Approach

NOI approach is another behavioral approach suggested by Durand David. This approach is diametrically opposite from NI approach with respect to the assumption of the behaviour of equity holders and debt holders. The essence of this approach is the leverage/capital structure decision of the firm is irrelevant. The overall cost of capital is independent of the degree of leverage, any change 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 K_d , 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 ratio. 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 (K). This approach is based on following assumptions:

Assumptions of Net Operating Income Approach

- i. The market capitalizes the value of firm as a whole. So, splitting of debt and equity has no importance.
- ii. Cost of debt remains constant
- iii. The market uses an overall capitalization rate (K_o) to capitalize the net operating income. K_o depends on the business risk. If the business risk is assumed to remain unchanged, K is constant.
- iv. Cost of equity increases as leverage is increased.
- v. The corporate income tax does not exist.

The function of " K_e " under NOI approach can be expressed in equation as follows:

$$K_e = K_o + (K_o - K_d)D/E \text{ ----- 2.1}$$

Where,

K_e =cost of equity

K_d =cost of debt

K_o =cost of overall capital

D/E = debt equity ratio

If K_o and K_d are constant " K_e ' would increase linearly with debt equity ratio

According to the assumptions, the relationship between financial leverage, cost of capital and total market value of firm are shown below.

Figure 8: The effect of leverage on cost of capital

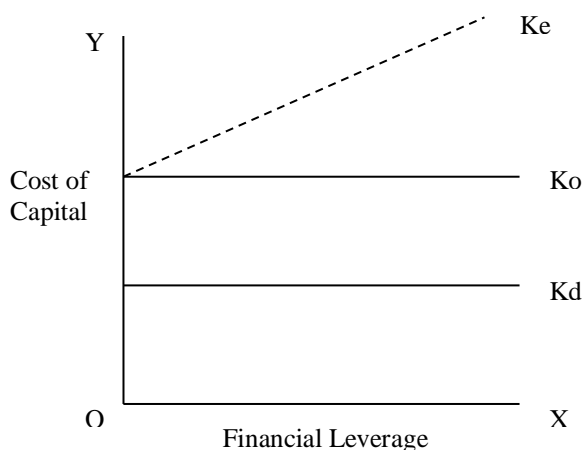
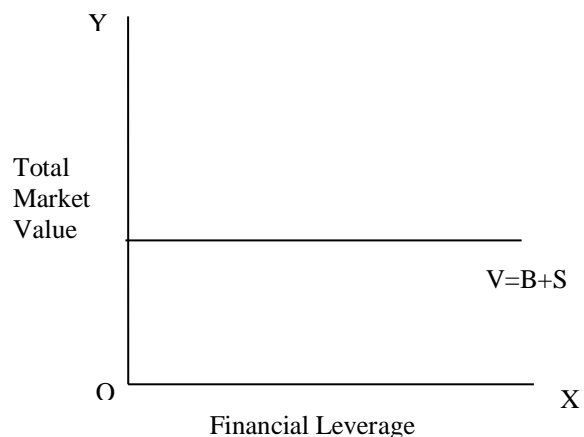


Figure 9: The effect of leverage on total market value of the firm



In the figure 8, it is shown that the curve K_o and K_d are parallel to the horizontal X axis and K_e is increasing continuously. This is because K_o and K_d remain constant under all the circumstances but the K_e 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 9 that under the NOI approach, as low cost of debt is used, its advantage is exactly offset by increase in cost of equity in such a way that the cost of capital remains constant. By this, value of the firm also remains constant. At the extreme degree of financial leverage, hidden cost becomes very high hence the firms cost of capital and its market value are not influenced by the use of additional cheap debt fund (Caitman Lawrence, 1988).

2.1.1.3.3 Traditional Approach

The traditional approach of capital structure theory has been popularized by Ezra Soloman, which is also known as intermediate approach, is compromise between NI and NOI approach. According to this view, the value of the firm can be increased or the judicious mix of debt and equity capital (Pandey, 1998) can reduce the cost of capital. In addition, the cost of capital decreases with the reasonable limit of debt and then increase with leverage. Thus an optimal capital structure exists when the cost of overall capitalization rate is minimum on the value of the firm is maximum. Under this approach, the line of equity

capitalization rate is higher than debt capitalization rate. It means the debt funds are cheaper than equity funds.

The aggregate rate of debt capital and equity capital is called overall cost of capital or overall capitalization rate. This rate will be less than the cost of equity and higher than cost of debt.

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 State: Increasing Value

The first stage starts with the introduction of debt in the firm's structure. In this stage, the cost of equity (K_e) either remained constant or rises slightly with debt 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 debt is so large that, even after allowing for higher cost of equity. The benefit of the use of the cheaper sources of 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 stage, cost of debt (K_d) 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_o).

Under this assumption, K_e remains constant for some condition of debt then the value of firm will be,

$$V = \frac{NOI}{K_e} + (K_e - K_d) \frac{D}{K_d} \dots \dots \dots (2.2)$$

As long as K_e and K_d are constant, the value of the firm increases at the constant rate when amount of debt increases.

Second Stage: Optimum Value

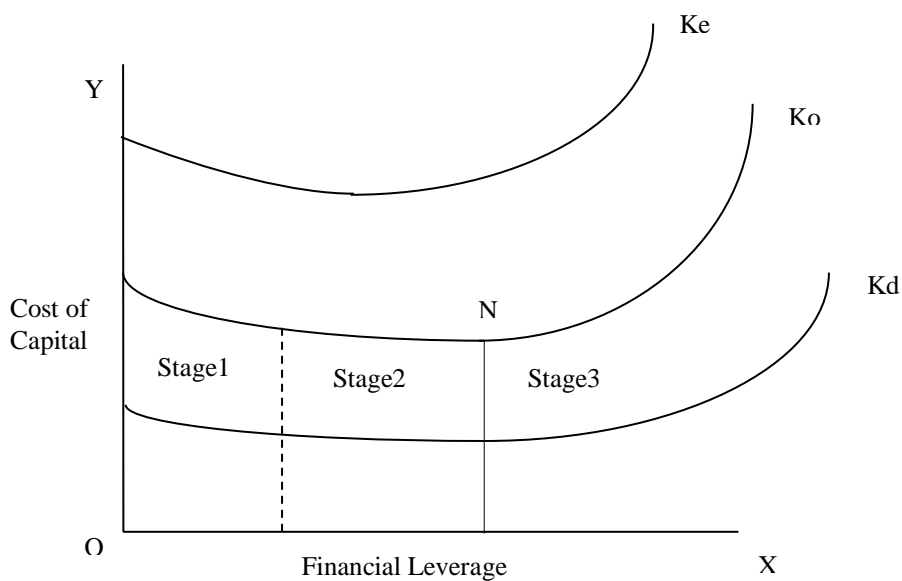
In the second stage, when the firm has reached to a certain degree of financial leverage, further application of debt will increase the cost of equity due to the added financial risk that offsets the advantages of low cost debt. Hence, the total market value of the firm remains unchanged within the range of such debt 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 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 10: Effect of Leverage on Cost of Capital



In the above figure, it is assumed that K_e rises 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_o , declines with leverage because the rise in the 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 K_0 begins to rise. The rise in K_0 is supported further once K_d begins to rise. The optimal capital structure is point N. thus, the traditional position implies that the cost of capital is not independent of capital structure of the firm and there is an optimal capital structure.

2.1.1.3.4 Modigliani-Miller (M-M) Approach

Modigliani and Miller approach (propounded by Modigliani and Merton H. Miller) also relates with irrelevant theory which means capital structure of the firm will not affect the value of the firm. So they came in one agreement that whatever rational choice of debt and equity will have some cost of capital. So in the approach we don't have optimum mix of debt and equity. As long as business risk remains the same the cost of capital will remain constant. As the firm increase the amount of leverage in its capital structure, the cost of debt capital remaining constant the cost of equity capital will rise just enough to affect the gains resulting from application of low cost of debt.

Assumption of M-M Hypothesis (I.M. Pandey, 1981)

- i. Perfect competition market environment where information relating investment is freely accessible there involves no transaction cost. In addition to this, investors are free to sell and buy the securities. A can borrow without any restriction at the same rate as corporation does. All investors are rational and no investor can influence the market.
- ii. The individual investors may have the different views as to the shape of the profitability distribution, but expected rate of return for all in is assumed the same.
- iii. The division of the income between cash dividend and retained earnings in any periods is a more detail or dividend payout ratio is 100%.
- iv. There are no income taxes. Modigliani and Miler remove this assumption later.
- v. Homogeneous business risk

Assumption of M.M. hypothesis can be classified into two ways:

- i. M-M. hypothesis with no taxes
- ii. M-M hypothesis with taxes
 - M-M hypothesis with no taxes is identical to net operating income approach, which has already explained.
 - According to Modigliani and Miller hypothesis with taxes, the value of levered firm must be greater than value of unlevered firm by the amount of debt tax shield (Miller and Modigliani, 1966, 128).

a) Debt tax shield when corporate tax is given;

$$\text{present value of Debt tax shield} = B \times t \dots\dots\dots (2.3)$$

Where,

B=value of debt

t=corporate tax

b) Debt tax shield when corporate and personal taxes are given, present value of

$$\text{Debt tax shield} = B \times \left[1 - \frac{(1-t)(1-t_{cs})}{(1-t_d)} \right] \dots\dots\dots (2.4)$$

Where,

t=corporate tax

t_{cs}=personal tax on common stock

t_d=marginal personal tax on debt

Based on the above assumption, the M-M hypothesis gave two propositions- proposition I and proposition II. These proposition are discussed below:

Proposition I

According to assumption of M-M hypothesis that for firm in same class business risk, the value of the firm is independent of its capital structure i.e. financial leverage. This is their proposition it can be expressed as follows (Pandey, 1995, 135)

$$V = (S + B) = \frac{X}{K_o} = \frac{NoI}{K_o} \dots\dots\dots (2.5)$$

Proposition I can be stated in an equivalent way in terms of the firms overall cost of capital (K_o), which is the ratio of the market value of all its securities.

That is,

$$\frac{X}{(S+B)} = \frac{X}{V} K_o \dots\dots\dots (2.6)$$

If defining as 'kd' expected return on the firm's debt and 'Ke' expected return on the firm's equity than expected net operating income is given as,

$$X = K_o V = K_e V + K_d B$$

As given in equation (2.6) by definition,

$$K_o = X/V$$

$$K_o = K_e \frac{B}{S+B} + K_d \frac{B}{S+B} \text{----- (2.7)}$$

It can be expressed as follows too,

$$V_L = V_U = X/K_o$$

Where,

K_o = Cost of overall capital of unlevered firm

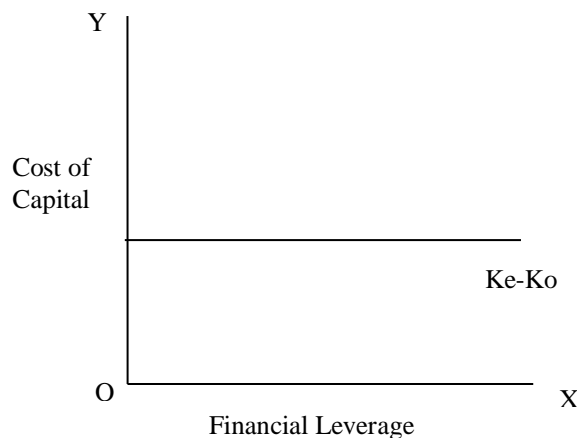
V_L = Value of levered firm

V_U = Value of unlevered firm

M-M concluded that the total market value of the firm is unaffected financing mix, it follows that the cost of capital is independent of the capital structure and is equal to the capitalization rate of pure equity stream of its class (Pandey, 1995).

Graphically, it can be shown as follows:

**Figure 11: Effect of Leverage on Cost of Capital
(M-M Hypothesis- Proposition I)**



The cost of capital function as hypothesis by M-M through proposition I shown above in figure 11. It is evident from this that average cost of capital is a constant and is not affected by leverage (Saxena and Vashist, 2002: p. 112).

Proposition II

Based on proposition I, M-M formulated proposition II which defines that cost of equity is the linear functions of the leverage. The M-M hypothesis argues that cost of capital K_e is equal to constant average cost of capital K_o plus a premium for the financial risk. The equation form of this proposition can be expressed as follows,

$$K_e = K_o + \text{Risk premium} \text{ ----- (2.8)}$$

The premium for financial risk equals to the difference between equity capitalization rate K_e and cost of debt multiplied by the ratio of B/S , that is

$$K_e = K_o + (K_o - K_d) \times B/S \text{ ----- (2.9)}$$

Validity of the M-M proposition II depends upon the assumption of ' K_e ' constant for any degree of leverage. But in real business world ' K_e ' increases with leverage beyond a certain acceptable level of Leverage.

According to this assumptions,

$$K_{OL} = K_{OU}$$

Where,

K_{OL} = Cost of overall capital of levered firm

K_{OU} = Cost of overall capital of unlevered firm

The relation between leverage, cost of capital and value of firm is shown graphically.

Figure 12: Effect of Leverage of Cost of Capital

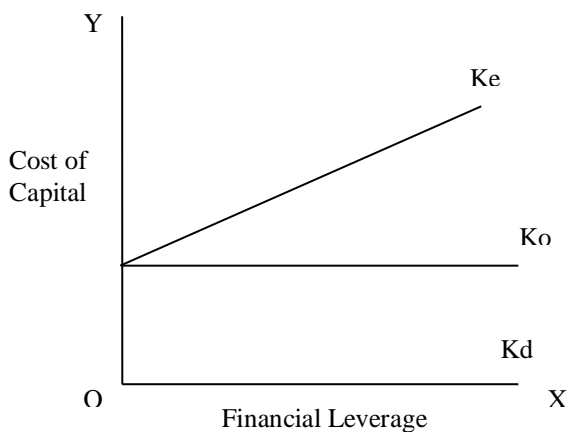
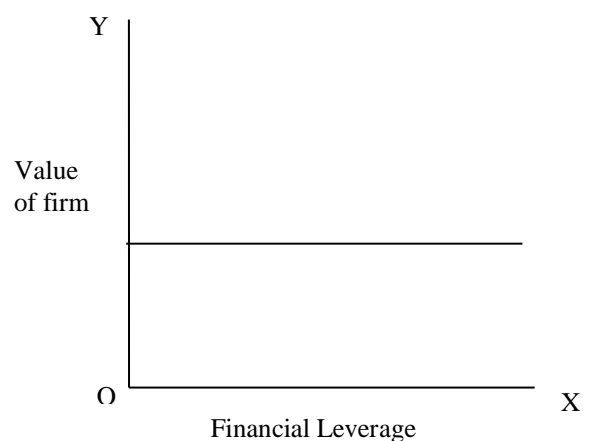


Figure 13: Effect of Leverage on Value of Firm



Arbitrage Process

M-M approach does not consider NI approach as valid approach. Their optimum clarify in two identical firms have market values/arbitrage will take place to

enable investors to engage personal or homemade leverage to restore equilibrium in the market except for the degree of leverage (Pandey, 1991).

The importance of arbitrage is to purchase securities or assets whose price are undervalued and sell those securities whose price are higher in related market.

Arbitrage Process

From levered to unlevered (U-L)

Step 1: Investor sells% of share of levered firm	xxx
Step 2: Investors borrows an equal amount of share in debt	
Capital of leverage firm	<u>xxx</u>
Total fund available of investment (A)	xxx
Step 3: Investor purchases equal % shares of unlevered firm (B)	<u>xxx</u>
Reduction of investment outlay (A-B)	xxx

From Unlevered to levered (U-L)

Step 1: Investor sells% of share of unlevered firm	xxx
Investors fund available of investment	<u>xxx</u>
Step2: Investors lends (to the same firm or elsewhere)	
An equal amount of his/her in debt of leverage firm (A)	<u>xxx</u>
Step 3: Investor purchases equal % shares of levered firm (B)	<u>xxx</u>
Reduction of investment outlay (A-B)	<u>xxx</u>

2.1.1.4 Some related Items to Capital Structure

(A) Earning Per Share (EPS)

Earning pear share is the amount, which is separated from net profit to each and every shareholder.

$$EPS = \frac{\text{Net Profit after Taxes-Preference Dividend}}{\text{Number of Common Shares Outstanding}}$$

Earning per share is one of the most used measures of firm's performance. To maximize EPS the plant will chose the highest level of debt. Earning per share is calculated after different phase such as first there will be earning before interest and tax then interest will be reduce. So the earning before tax is left. Again tax

amount is remained which is earning to equity. Then we use above formula to find earning per share.

(B) Cost of Capital

"The impact of financing decisions on the overall cost of capital should be evaluate and the criteria should be to minimize the overall cost of capital or to maximize the value of the firm" (Pandey, 1981).

(C) Flexibility

It means the firm's ability to adopt its capital structure to the needs of changing conditions. The capital structure of a firm is flexible if it has no difficulty in changing its capitalization or sources of funds. The company should be able to raise funds whenever needed to finance the profitability investment. The company should also in position to redeem its preference capital or debt whenever warranted by the future conditions. The financial plans of the company should be flexible enough to change the composition of the capital structure.

(D) Cash Flow Ability and Control

A company should be always prepared for the future so it should manage its cash flow. Some amount of the company should be paid which are known as fixed charges like interest, preference dividends and principal. Whenever the company things to raise the funds it should calculates its expected future cash flow to meet fixed charges if such fixed chares are not maintained than the company is dissolved.

Control in any company depends upon voting rights of shareholders so to manage the control debt capital can be used. But when a company use large amount of debt, lot of restriction are put by debt-holder on company to protected their interest. Large amount of debt can also cause bankrupt which means total loss of control.

(E) Size of the Company

In large companies, there is grater degree of flexibility of capital structure. The larger company is easy to make available long-term loan and easy selling of

common shares, debentures etc. But this kind of flexibility cannot be seen in small scale companies. Hence size of the company is an important consideration to make appropriate capital structure.

(F) Interest Rates and Taxes

Interest rates affect the choice of securities to be offered to investors. High interest rates make financing costly, when funds are obtained easily and cheaply.

The advantage of using debt will be greater if a firm's tax rate is higher. Financial statement means the statement, which has all financial matters of the company. Just as trial balance, profit and loss a/c and balance sheet.

In balance sheet we record assets and liabilities. In balance sheet total assets = total liabilities + equity capital. The balance sheet is just the mirror of the company. It reflects all assets, liabilities of companies and also equity from shareholders.

(G) Operating Income and Non Operating Income

Operating income for the business entity is the regular and prime source of revenue for the business. It is the main identity of a business regarding what a business stands for.

Non-operating incomes are the casual source, not the regular source of revenue for business entity. These incomes are not from regular course of business but from other source where the business entity can be involved legally as prescribed by the directives of related government authority.

2.1.2 Financial Leverage

Leverage refers to the use of assets or sources of funds, which involve fixed cost or returns. As a result, the return to the owners is affected and also their risk. There are two types of leverage: financial and operating.

The financial leverage implies the employment of source of funds, involving fixed return so as to cause more than a proportionate change in earning per share (EPS) due to change in operating profit.

The operating leverage refers to the use of the fixed operating cost to magnify the effect of a given change in the sales revenue on the earnings per share. It affects the total risk of the firm.

The term leverage may be defined as the use of those sources of funds in the business for which the firm has to pay fixed charges, irrespective to the earnings of the firm. Western and Brigham (Fred Weston and Brigham, 1981) viewed financial leverage as the ratio of total debt to total assets or the total value of the firm. Financial leverage refers to the response of shareholder income to change in EBIT (Earning before interest and tax) and is created by debt or preferred stock financing with fixed interest and dividend payment (Lawarance and Haley, 1983). There are two types of leverage, financial and operating. In financial management, leverage associated with investment activities is called operating leverage and leverage associated with financing activities is called financial leverage.

The use of fixed charged sources of funds, such as debt and preference capital along with the owner equity in the capital structure are described as financial leverage or "Trading on equity" (Martin, 1963). It is derived from the fact that it is the owners equity measured by ordinary share capital and reserve and surpluses that is used as a basis to raise debt and preference capital, the equity that is traded participation in companies profit and therefore, debt holder will insist on protection in values represented by ownership capital.

Under the favorable condition, the use of debt and preferred stock for financing provided income advantages over common stock of the firm, if it doesn't measure the risk. Thus, a company employs it intending to earn more on the fixe changes funds that their costs. The surplus will increase the return on equity. Due to the increase and principal payment is contractual obligation of the firm: the debt

financing is more risky from the view points of shareholders. Therefore, debt offers the greater income advantages as well as risk.

2.1.3 General Concept of Profitability

Each and every organization is established to earn some amount which is regarded as a profit. Therefore, we can say that every organization's motive will be to maximize its profit. In a simple word the difference of total revenue and total expenses is considered to be profit.

Many people may argue that Government Bank's first priority is service not profit, but they should not ignore the importance of profit, which ultimately makes the efficiency of any organization better.

Profitability is combined of two words "profit" and "ability". Here in an organization more way of increasing monetary value is considered to be profitability increment of that organization. In a commercial bank, its more efficiency can be seen by more amount of profit gained by that bank. Profit can be considered as a measuring rod, which reflects to all aspects of entire business organization which all also includes quality output.

A profitable company is likely to offer not only security of employment but also promotion, prospects, job opportunities and the intense personnel motivation that comes from being associated with success.

"Profit is the basic factor of any organization and the ability means the capacity of organization to earn more and more profit." (Argent, 1968: 34)

Profitability is relative measure; it is utilized to check the degree of efficiency of management of any organization. This measure helps the investor to calculate the amount of risk presents in the business, what amount of interest can be expected or generated from such organization. Measure, or forecast of profitability is again prepared by the help of current profit and one trend line is prepared and for the next year profit is forecasted.

The main objective of profitability is to see whether the organization is using its resources effectively or not, if not which sector is lacking the attention everything should be analysed. Though there are two definitions regarding of profit but relates the good of the organization. Some reasons are given below which illustrate importance of profit.

i) Measurement of Performance

If any kind of business, profit is considered as a measuring rod of performance. Profit finalized what are the things, which the company should achieve and in which direction the company is going on in future.

ii) Premium to Cover Cost of Staying in Business

Risk and uncertainties always follows business environment. To grasp the globally challenging technologies to stay in the market uncertainties, to replace and acquire assts enhancing business scope etc. call for a profit margin for a long stay in the business.

iii) To Ensure Supply of Capital for Future

Profit is necessary to plough back in the investments like innovations, business expansion and self-financing. It attracts investors for investment.

2.1.3.1 Profitability of Commercial Bank

Commercial bank invests public deposits on those sectors that derive the maximum income or higher rate of return in their assets. Hence, the investment or granting of loan and advance by them are highly influenced by profit margin. The profit of commercial banks depends upon the interest rate of the bank, volume of the loan provided, time period of loan and nature of investment in different securities. To cover all the expenses as interest to the depositors and other administrative cost, profit is required. Commercial bank also should pay dividend to the shareholders who have given their share to build the capital of bank.

Banks today are under great pressure to perform meet the objective of their shareholders, employees, depositors and borrowing customers, while somehow

keeping government regulators satisfied that the bank's policies, loans and investments are sound.

A successful bank is one who invests most of its fund in different earning assets standing safely from the problem of liquidity i.e. keeping cash reserve to meet day to day requirement of the depositors. After all the commercial bank is simply a business corporation organized for the purpose of maximizing the value of the shareholders wealth invested in the firm at an acceptable level of risk.

Profitability and liquidity maintain a highly negative co-relation. Since both are equaled important for commercial bank, banks cannot ignore any of them. So, the crucial decision for the management of the bank is to trade off between them. The more liquidity the less will be profitability and vice-versa.

2.1.4 Concept of Cost of Capital

Cost of capital is the minimum amount, which must be paid annually or at any periodical interval (other than principal) to the investor or creditor. It is minimum required rate of return of an investment which must be earned by a project remain unchanged its value or wealth.

The term "cost of capital" is used in different senses. In the past it was frequently used to refer to the cost of specific sources of capital, such as the cost of debt, the cost of equity etc. when used in the sense, the term carried the implication that, in order to accept or reject the proposed projects, their profitability should be evaluated on different cost bases depending on the specific sources of funds used to finance particular project. It has been however recognized recently that this position contained a basic fallacy. A firm's decision to use debt capital to finance its projects not only adversely affects its potential for using debt in the future by proportionately lowering its equity base, but also creates financial risk to the shareholder. Such risk in turn will influence the cost of equity, which moves upward. Similarly a firm's decision to use equity capital for financing its projects would enlarge its potential for borrowing in the future. Because if this connection between the method of financing and their

costs. It has been now agree that the term cost of capital should be used in the composite sense i.e. weighted Average cost of capital (Barges, 1963: P2)

The cost of capital is an important element as a basic information in capital investment decision. The cost of capital can be looked in slightly different prospective (Joy, 1977). In the operational term, it refers to the discount rate or minimum rate of return that a firm must earn on its investment for the market value of the firm to remain unchanged. In economic term, there are two approaches to define the cost of capital. Firstly, it is the cost of acquiring the funds required to finance the proposed project. That is the cost of capital is the borrowing rate. Secondly in terms of lending rate, it may refer to the opportunity cost of fund for the firm that is what firm could have earned by investment funds elsewhere. A project will be accepted if it has positive net present value method, when the future cash inflows are discounted at the cost of capital. In internal rate of return method, the project will be accepted if it has a rate of return greater than the cost of capital. In spite of these, the cost of capital is the standard against which the prospective investment project is compared. Hampton John J. (Hampton, 1977) defines the cost of capital as the rate of return, the firms required from an investment in order to increase the value of the firm in the market place. Van Home (Van Home, 1990) preferred to say about the cost of capital in the following words, "the cost of capital in terms of discount rate to serve as vehicle to judge the alternatives of an investment opportunity." Cost of capital, also known as capitalization rate, discount rate, hurdle rate, cut off rate, minimum required rate of return, opportunity cost etc that equates the net cost proceeds the firm receives with the present value of the capital supplies.

As discussed, the cost of capital of capital concept is of vital significance in the financial decision making of a firm, but there are number of problem attached to it. The first problem concern the measurement of the cost of specific sources of capital, and it is necessarily. The cost of specific source of finance may be defined as the discount that equates the present value of the funds received by the firm, net of under-writing and other costs, with the present value of expected outflows. These outflows may be interest payment, repayment of principal or

dividends. Thus, the explicit cost of specific sources of financing can be determined by solving the following equation for K.

$$I = \frac{C_1}{(1+K)^1} + \frac{C_2}{(1+K)^2} + \dots + \frac{C_n}{(1+K)^n}$$

$$I = \sum_{t=1}^n \frac{C_t}{(1+K)^t}$$

-----(2.10)

Where,

I= Outflow of funds at period 0 or initial outlay

C_t= Cash flow at time t;

N = Time duration over which the funds are provided

K = Cost of capital

It is clear from the above equation that the cost of capital is the minimum rate of return, which the firm must earn through the environment, which equates the cash outflows with the cash inflows, of an investment. The cost of each component of capital is the component cost of capital and overall cost of financing of an organization is known as weighted or composite cost of capital. Capital component includes various types of debt, preference share, and equity capital (including retained earning and other general resources and surplus). Therefore, any net increase in assets must be financed by an increase by an increase in one or more capital components. The symbols of the component of capital under this study are as follows;

K_d = before tax component cost of debt

K_d (1-t) = After tax component cost of debt, where 't' is marginal tax rate

K_{ps} = Component cost of preferred stock

K_r = Component cost of retained earnings

K_e = Component cost of equity capital

K_o = weighted/overall cost of capital

2.1.4.1 Cost of Debt Capital

The cost of Funds raised through debt in the form of debt in the form of debenture or loan from financial institutions can be called cost of debt. It is easy to calculate because amount of interest is known and fixed by the agreement between lender and the firm. Component cost of debt rate is calculated by

dividing the amount of interest by the total amount of loan provided or it is the ratio of interest and principal i.e.

$$Kd = \frac{\text{Total amount of interest}}{\text{Total amount of principal}} \dots\dots\dots (2.11)$$

The above equation provides the before tax annual interest rate. The cost of debt is tax deductible. Thus, after tax cost of debt is less than before tax it is equals to the before tax cost of debt times, one minus corporate tax rate i.e

$$\text{After tax cost of debt} = Kd (1-T) \dots\dots\dots (2.11)$$

2.1.4.1.1 Cost of perpetual Debt (or Irredeemable Debt)

Perpetual debt has usually infinite period if firm has practice of using certain fixed portion of debt in their capital structure permanently the debt is called perpetual debt on these debts only annual interest is paid. The cost of perpetual debt can be calculated as shown above in eqⁿ. (2.11).

2.1.4.1.2 Cost of Redeemable Debt

Redeemable debt has finite maturity period firm will pay annual fixed amount of interest and after the maturity principal will be paid it is calculated by using following equations:

$$Kd = \frac{\text{int} + (Rv - Po)/n}{(Rv - Po)^2} (1 - t) \dots\dots\dots (2.12)$$

$$Po = \frac{\text{Int}_1 + I_1}{(1 + Kd)^1} + \frac{\text{Int}_2 + I_2}{(1 + Kd)^2} + \dots\dots\dots + \frac{\text{Int}_n + I_n}{(1 + Kd)^n}$$

Where,

- Int = annual interest
- Rv = redeemable value
- T = tax rate
- Po = net proceed from sale of security
- I = Installment

2.1.4.2 Cost of Preference Share Capital

The cost of preference share capital may be defined as the dividend expected by preference shareholders. Preference stock has some characteristics of common stock and some of bond. Dividend of the preference stock is fixed and in cost calculation, it is treated as debt. The cost of preferred stock is a function of its

stated dividends like the rate of interest. The computation of the cost of preference shares is conceptually difficult as compared to the cost of debt. In the case of debt, as shown above the interest rate is the basis of calculating costs because payment of specific amount of interest is legal commitment on the part of the firm. But there is such obligation in regard to preference dividend. Although, it is true that a fixed dividend rate is stipulated on preference shares and that the holder of such shares have a preferential rights as regards payment to dividend as well as return of original investment, as compared to the ordinary shareholders. There are two types of preference shares, irredeemable and redeemable.

2.1.4.2.1 Cost of Irredeemable Preference Share

The cost of irredeemable preference shares, which has no specific maturity date, is given. It is calculated by using the preference share valuation model given below:

$$P_{so} = \frac{D_p}{(1+K_{ps})^1} + \frac{D_p}{(1+K_{ps})^2} + \dots + \frac{D_n}{(1+K_{ps})^n} \text{-----(2.13)}$$

Where,

P_{so} = Market price of preferred stock

D_p = Dividend paid to the preferred stock

K_{ps} = Cost of preferred stock

The cost of preference capital equals to:

$$K_{ps} = K_p / P_{so} \text{-----(2.14)}$$

Equation slightly modified in the presence of floatation cost

$$K_{ps} = \frac{D_p}{(1-K_{ps})^2} \text{----- (2.15)}$$

2.1.4.2.2 Cost of Redeemable Preference Share

The cost of redeemable preference share is the discount rate that equates the net proceeds of the sale of preference shares with the present value of the future dividends and principal repayment. The appropriate formula to calculate cost is given below:

$$P_o(1-f) = \frac{D_1}{(1+K_p)^1} + \frac{D_2}{(1+K_p)^2} + \frac{D_n}{(1+K_p)^n} + \frac{P_n}{(1+K_p)^n}$$

$$P_o(1-f) = \frac{D_n}{(1+K_p)^t} + \frac{P_n}{(1+K_p)^n} \text{----- (2.16)}$$

Where,

Po=expected sale price of preference shares

F=flotation cost of percentage of Po

D=Dividends paid on preference shares

D_n= repayment of preference share capital amount

2.1.4.3 Cost of Equity Capital

The cost of equity is defined as the minimum rate of return that a firm must earn on the equity financed portion of its investment in order to leave unchanged the market price of its stock. Measurement of cost of equity capital is more difficult and controversial. Common stock and retained earnings are the parts of equity capital. Common stock means proceeds received from the issue of equity. But a retained earnings is the retained portion of earnings of the firm.

2.1.4.3.1 Cost of Retained Earnings (Internal Equity)

Cost of retained earnings is the opportunity cost of the shareholders because when the firm decided to retain the current earnings in the firm, the shareholders give up their cash dividend. Thus, they accept that the firm should earn the same rate of return on retained earnings as it earns on common equity. That means, the cost of retained earnings (K_y) is equal to the rate of return on common stock (K_e or K_s). Thus, in the absence of flotation cost the cost of retained earnings and the cost of common stock is same.

2.1.4.3.2 Cost of Newly Issued Common Stock (External Equity)

Cost of new common stock is the rate of return, which is required by the shareholders. Due to flotation cost when issuing new common stock, the cost of common stock is greater than cost of retained earnings.

2.1.4.3.3 Approaches to Calculate the Cost of Equity

a) Gordon Model or Dividend Yield Approach

This model is also called the discounted cash flow method. The model can be used to estimate the rate of return investors required on equity. Dividends are expected to grow at a constant rate forever and the rate of return on equity, K_e, is greater than growth rate, g of dividends, it is calculated by following equations.

$$K_e = \frac{D_1}{P_0} + g \text{ -----(2.17)}$$

Where,

K_e =Cost of internal equity

D_1 = Dividend paid on next year or yearend expected dividend

P_0 = Current market price of common stock

G = Growth rate of dividend

b) Earning Model or Earning Yield Approach

According to this model, the cost of equity capital, K_e is equivalent to the rate, which must be earned after incremental issue of ordinary share so as to maintain the present value of investment factor. In other words, cost of equity capital is measures by earning price ratio (Ezana, Soloman, Theory of financial management, 1969).

Earning model is as follows;

$$K_e = \frac{E_0}{P_0} \text{ -----(2.18)}$$

Where,

E_0 =Current earning per share

P_0 = Current market price per share

C) Cost of new Common Equity

It is calculated by following equations.

$$K_N = \frac{D_1}{P_0(1-f)} + g$$

$$= \frac{D_1}{P_n} + g \text{ -----(2.19)}$$

Where

D_1 = Dividend paid on the next year

P_n = Net price paid to the stock

F =Flotation Cost

G =Growth rate of dividend

K_N = Cost of Equity

d) Capital Asset Pricing Model (CAPM)

Sharpe and Linter developed this model in 1960. The model explained the relationship between the expected return, unavoidable risk and the valuation of securities. The greater the unavoidable risk of security, the greater is the return expected by the investor from the security. Hence, in case the security doesn't provide adequate return to common surate with its unavoidable risk, the security will not find favour with the investor and thus its market value will fall.

With reference to the cost of capital prospective, the CAPM describes the relationship between the required rate of return or the cost of equity capital and the non-diversifiable or relevant risk of the firms as reflected in its index of non-diversifiable risk i.e. beta symbolically (Khan and Jain, Financial Management, 1992).

$$K_e = R_f + (K_m - R_f)b \text{ -----(2.20)}$$

Where,

K_e or $E(R_i)$ = Cost of equity capital or required rate of return

R_f = The rate of return required on risk free assets/.securities/investments

K_m = The required rate of return on market portfolio of assets. That can be viewed as the average rate of return on assets.

2.1.4.4 Weighted Average Cost of Capital

The weighted average or composite cost of capital is the weighted average of the cost of various sources of capital. Weigh is the proportion of each of the sources used in the capital structure. In financial decision making, the term cost of capital is used in the composite sense because a firm's decision to use debt capital to financial project will lower its cost but also make more risky. The increases risk to the shareholders will increase the cost of equity. Thus, the cost of capital should be used in composite sense.

The equation form of the weighted average cost of capital is given below

$$K_o = W_1 K_d + W_2 K_{ps} + W_3 K_r + W_4 K_e \text{ -----(2.21)}$$

Where,

W_1, W_2, W_3, W_4 are the proportion of debt, preferred stock, retained earning and new equity respectively. The weight can be expressed in book value or market

value but the use of market value weight is more appropriate because it represents the current costs.

2.2 Review of the Articles

This section contains a comprehensive review of relevant studies related to the topic. It reviews some basic academic course book, research-based journals and other related studies on it.

2.2.1 Modigliani and Miller Study (1958)

They used the previous work of Allen Smith in support of their independence hypothesis. In the first part of their work, MM tested their proposition I, the cost of capital is irrelevant to the firm capital structure, by correlating after tax cost of capital, with leverage, D/V they found that the correlation coefficient is statistically insignificant and positive insignificant. The reversion line does not suggest a curve-linear, 'U' shaped, cost of capital curve, when the data's are shown in scatter diagrams.

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

2.2.2 Western Study (1963)

The research work done by Western is "A test of cost of capital proposition". He made some important improvement in the cost of the capital model. He included firm size and growth as additional explanatory variables in his model. He found the regression coefficient of leverage to be positive and significant, when the used MM model. However, when the multiple regression were run, he found that the correlation coefficient is significant and the regression coefficient is negative and significant. When the influence of growth is isolated, leverage is found to be negatively correlated with the cost of capital. He concluded that the apparent lack of influence of leverage on the overall cost of capital observed by MM was due to the negative correlation on of leverage with earning growth.

Western also tested MM proposition II. When he used the MM model, his results were found to be consistent with their results i.e. cost of equity is the linear function of debt equity ratio.

2.2.3 Wippern Study (1966)

Wippern has also conducted a test of the relationship between leverage and the cost of capital by running regression on the data of 50 firms from even manufacturing industries in the years 1954, 1958, 1961 and 1963 (Wippern, Dec. 1966: p. 615-633). He tried to eliminate the principle problem of empirical study on the alternatives in determining the relationship between leverage and cost of capital. He urged that the leverage either the ratio of debt to equity at book values or at market values both of these measures contains important concealed bias. He therefore, used a different measure of leverage. viz. $i/e=25$, where 'I' is the current level of fixed charges, E is the most recent years cash flow operating income determined from a logarithmic regression of income on time over ten years period and 25 is equal to two standard error around the regression line. He has also included, uncertainty variables in his test equation to account for the inter firm differences. He therefore has been assumed in past investigation that homogeneity of business risk could be achieved by comparing firm in the same industry classifications. Besides these, he employed some proxy measures based on objectively determined data, and argues that the capitalization rate equates future earning to current market prices are not directly measurable.

The following equation was used to cost of capital hypothesis:

$$Y = a + b_1 \text{ leverage} + b_2 \text{ growth} + b_3 \text{ payout} + b_4 \text{ log of size} + b_5 \dots\dots\dots + b_{10} \text{ industry dummy variables}$$

Where,

Y = earning/price ratio

He concluded that shareholder wealth could be enhanced by a judicious use of debt function.

2.2.4 Pandey Study (1981)

This study is concerned with the test of relationship between the cost of capital and leverage, effect of leverage, cost of 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 year 1966, 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) he found the negative relationship between debt equity ratio and growth rate. Garg (1988) suggested that there exists the relationship between business risk and debt equity ratio. Pandey (1904) did the attitude survey of the practicing manager of 30 Indian companies and drew the conclusion that Indian practicing manager have the concept of optimal capital structure and it should be maintained by every company.

2.2.5 Adhikari Study (1991)

Adhikari conducted the empirical study of MM proposition in the Nepalese context. He used simple as well as multi regression equation to test the relationship between cost o capital and capital structure with other explanatory variables. His study was based on the five listed companies for the period of 1976-77 to 1988-89.

For the testing purpose he used the following equations:

$$K_o = a_1 + b_1 L + b_2 \log S + b_3 g + b_4 D/P + b_5 E.V. + b_6 \text{liq}$$

Where,

K_o = average cost of capital

L = leverage I

S = size

G = growth

Liq = liquidity

$E.V.$ = earning variability

Using the above equation on his study, he concluded that the traditional proposition, cost of capital is the function of leverage is accepted and again states that the result is not enough to establish the relationship between cost of capital and capital structure because coefficient of determination was very small.

He also tried to test the MM hypothesis that the use of leverage can lower the cost of capital, due to the tax deductibility of interest charges and concluded that there were not changes with result between the previous and later. His last study

was based on the cost of equity and debt equity ratio and other explanatory variables. The model used by him was as follows:

$$K_o = a_1 + b_1 L_1 + b_2 \log S + b_3 g + b_4 D/P$$

In this study used above model, he concluded that the result was not enough to establish the relationship between cost of equity and capital structure.

2.2.6 Pradhan Study (1994)

In his research financial management and practices in Nepal in 1992. The survey mainly dealt with financial function, sources and types of financing, financing decisions involving debt effect of change in taxes on capital structure, financial distress dealing with banks and dividend policy. The major finding of study connected with financial management is given as:

- The enterprises have a definite performance for bank loans at a lower level of debts.
- Most enterprises do not borrow from one bank only and they do switch between banks which ever offer best interest rate.
- Most enterprises find that banks are flexible in interest rates and convenience.

2.3 Review of the Thesis

Under this section various thesis related to this study have been reviewed, they are as follows:

Thapa (2004) has conducted research on "Study on Capital Structure Management of Gorakhali Rubber Udyog Limited." It was analyzed all the variables in the form of ratio analysis.

In these findings especially to the capital structure and profitability position, following issue had drawn.

- As compared to the shareholders equity and the trend of debt/equity ratio. The ratio was increasing every year.
- Company's debt servicing capacity was very poor due to the negative interest coverage ratio.
- The operational performance was not satisfactory due to negative earnings and low volume of sales revenue.

- The company was not able to utilize its capacity more than 50% which resulted the huge losses.

Sharma (2006) conducted the study on "Capital structure and its impact on cost of capital" in manufacturing and trading companies. His study was basically focused on following aspects, they are:

- To test the relationship between leverage and cost of capital in manufacturing and trading sector enterprises.
- To assess the relationship of leverage and cost of equity.
- To analysis the properties of portfolio formed on leverage.

To conduct his study, he has used simple as well as multiple regression analysis to accomplish the objectives. He found that the cost of capital can be affected by use of debt in capital structure and cost of capital decline with increase in leverage. He suggested that capital structure is not consistent so management should try to maintain their consistence capital structure. In his study, he has not done financial analysis which can make it more clear.

Shrestha (2007) has conducted a study on the topic of "focus on capital structure of selected and listed public companies." His study was basically focused on following aspects, they are:

- To analyze the capital structure of selected and listed companies
- To access the debt servicing capacity of selected and listed companies
- To examine correlation and the significance of their relationship between different ratios related to capital structure

To conduct his study, he used data from 19 companies and study has covered different sectors manufacturing, finance, utility service and other allied area. She had found that most of these companies have debt capital relatively very higher than equity capital. Consequently, most of them are operation at losses to the extent that of interest on loan has been serious issue. Most of the losses are after charging interest on loan. He has suggested that the government has to consider in public enterprises is that of evaluating the relationship between use of debt and its impact on overall earning of public enterprises. So, the government should be sure in knowing how much debt capital will minimize return. Government of Nepal invested large amount

of money in the public enterprises it should need to develop a suitable capital structure guideline to make public enterprise aware of the responsibility to repay the debt schedules. The other thing, which needs to be made public transparent that government money is not a lost less faulc. Government has to analyze cost and risk-return trade-off. Thus, capital structure needs to be made more determinate be realistic analysis of cost.

Pokharel (2008) has conducted a study on the topic of "Capital structure management and its effects on cost of capital of manufacturing and trading companies of Nepal." His study basically focused on following objectives they are:

- To highlight the capital structure management and cost of capital in general
- To know position of capital structure of manufacturing and trading companies in Nepal
- To examine the relationship of capital structure of with cost of capital in Nepalese companies

To conduct his study, he used data from 10 manufacturing and 5 trading companies. For the analysis, he used econometric analysis and analysis of the properties of port folio formed on leverage. In this study, simple as well as multiple regression analysis is used to accomplish the objective, cost of capital, cost of equity and tax adjusted yield are taken as department variable in the regression equation. After analysis he found that mean, average cost of capital in both sectors has same result. Average leverage, growth in total assets, size of capital employed, liquidity ratio an earning variability of manufacturing sector enterprises are more than that of trading sector enterprises on the other side, cost of equity, dividend payout ratio, tax adjusted stock yield on the manufacturing sector enterprises on less than that of trading sector enterprises.

He recommended that most of company's capital structures not consistence. Therefore management should try to maintain their consistence capital structure. Nepalese manufacturing and trading centre should be average that the debt financing results in tax advantages on interests changes that would help to maximize value of firm.

Gautam (2009) has done a study on "Capital structure of manufacturing companies using financial ratio." His study was basically focused on following aspects, they are:

- To assess the debt capacity of the selected companies
- To analyze cost of capital and return on capital in relation to the capital employed
- To analyze the financial and operating leverage effect on capital structure

To conduct his study, he used data from Nepal lube oil (NLOL) and Bottler Nepal Ltd (BNL). He used different types of ratio analysis such as debt to total assets, return on assets, EPS, DPS etc but not used statistical tools. After analysis, he concluded that profit margin on sales is the ratio of net income available to common stockholder on sales. This indicates the company should make such policy to earn high amount of profit by increasing operation efficiently. The average return on assets of NLOL has low ratio, which indicates that, the assets of these companies generating low profit. The Nepal lube oil limited to investors. After conclusion, he recommends that NLOL and BNL should increase the debt proportion in financing its assets. Both the companies are highly dependent on short term debt, it should try to adopt long-term source of debt to maximize return on assets.

Maharjan (2010) has done a study on "Capital structure and cost of capital in the context of Nepalese joint venture banks." Her study was basically focused on following aspects, they are:

- To study the relationship between cost of capital and capital structure of selected banks
- To examine the effect of other factors such as size of firm. Growth, DPS and liquidity on cost of capital
- To test the relationship between profitability and debt equity ratio

To conduct her study, she used data from Bok Ltd, HBL, NBB and NIBL. This study used simple as well as multiple regression equation to accomplish the objectives. It employed the simple regression equation to examine there relationship of cost of capital with each of the selected explanatory variable and multiple regression equation was used to examine the relationship between cost of capital and leverage and cost of equity and debt ratio. The study concluded that along the cost of capital is declining

function of leverage and the cost of equity first declines with leverage and then rises. After conclusion, she recommend that firm have to properly analyze and evaluate the investment proposal and determine whether it is beneficial or not. After making investment decision the management of the firm should be clear about the investment. It means that knowledge of capital structure and cost of capital plays vital role in investment. The analysis of cost of capital is very important in project appraisal because of the increasing cutthroat competition and critical Nepalese.

2.4 Research Gap

Various studies have been conducted on capital structure management of various study owned and public limited companies of Nepal. Most of the study individual that sound principle of capital structure, cost of capital and its management have not been followed thoroughly by the enterprises in Nepal. The studies also observed defect in capital structure. As for example, in many enterprises their debt capital was comparatively high than equity, progress of time, there to bring down the amount of beta capital. Despite the companies performance have not better signs of recovery the defective capital structure shown in the studies induced the research for the further study on the subject.

The researcher has tried his best to fill up the gap created by previous studies. Even there are not enough study conducted on the topic of impact of capital structure on cost of capital of joint venture banks in Nepal. Therefore this study is also devoted to test the impact of capital structure on cost of capital of joint venture banks in Nepal.

This study is different in the sense that the selected companies are totally different from the above previous studies. The study totally revolves around the banking and the named of selected joint venture banks. This study done considering the data of five year (2005/06-2009/10) of all the selected banks. This study tried to analyze and evaluate the relationship of capital structure with various variables on like, leverage ratio, cost of capital, cost of equity and so on.

CHAPTER - III

RESEARCH METHODOLOGY

3.1 Introduction

The main purpose of this chapter is to discuss the method of research followed in this study. Research methodology is a systematic way to solve the research problem. In other words, research methodology describes the methods and process applied in the entire aspect of the study. Research methodology refers to the various sequential steps (along with a rationale of each step) to be adopted by a researcher in studying a problem with certain objectives in view (Kothari, Delhi 1994, p. 19). It may be understood as a science of studying how research is done scientifically.

This chapter deals with the methodology that adopted in analysis of the data for the study. The research design, population and sample, source and data collection technique, data processing and analysis tools and various limitations, which are associated with the study, have been discussed in this chapter. It helps us to find out accuracy, validity and suitability. The justification on the present study cannot be obtained without help of proper research methodology. The research methodology used in present study is briefly mentioned below.

3.2 Research Design

A research design is the arrangement of condition for collecting and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. It is strategy concept of investigation for acquiring the information needed. Thus a research design is a plan for the collection and analysis of data. For research there exists different types of research design like: Historical research, descriptive research, case study research, field study research, analytical research, true experimental research and so on. Research design is the plan, structure and strategy of investigation conceived so as to obtain answers to research questions and to control variance.

The study is evaluative and analytical type of study regarding the impact of capital structure on cost of capital. The research design used in the study is descriptive and

evaluative. The data relative to topics are collected through financial statement of the bank and other available source. The data for five years had been collected and various financial and statistical tools had been used to resolve the objectives.

3.3 Population and Sample

These days a number of commercial banks have been emerging rapidly. Some have already been established and others are in the process of establishment. Currently, there are 34 commercial banks are operating in Nepal. In this study, all the commercial banks operating in Nepal are considered as the population of the study. Among them six are joint venture banks. Only four joint venture banks has been selected as sample for the present study on the basis of good financial performance and their dominant in Nepalese banking sector and market.

Similarly, financial statements of four JVBS for five years research period have been taken as sample for the same purpose.

S.N.	Joint Venture Banks	Sample	Joint Venture With
1	Nabil Bank Ltd.	1	National Bank Limited, Bangladesh
2	Standard Chartered Bank Nepal Ltd.	1	Standard Chartered Bank
3	Himalayan Bank Ltd.	1	Habib Bank Limited, Pakistan
4	Everest Bank Ltd.	1	Punjab National Bank of India
		Sample (n)=4	

3.4 Types and Sources of Data

There are two types of data taken for the study. They are primary and secondary data.

Primary Data: The primary data are those which are collected a fresh and for the first time and thus happen to be original in character. Primary data are collected through interview, questionnaires, observation and direct meeting with concerned persons. In this regard questionnaire will be used as a primary data.

Secondary Data: Secondary data are those which have already been collected by someone else and already been passes through the statistical processes. The secondary data has been collected through various published and unpublished documents of the concerned authorities and another institution. The sources of secondary data are as follows:

- Journals, newspaper and magazines

- Annual report, periodical report, supporting data and other information provided by the concerned firm.
- Nepal Rastriya Banks booklet, document and government material related to this thesis.
- Unpublished master degree thesis.
- Books related to financial managements
- Different websites

3.5 Data Collection and Processing Techniques

In order to collect the data, annual reports polished by banks, NRB report, economic report and other published statistical data will be used, and to obtain the additional information, informal talks and procedures will be used. Similarly, information may be collected from bulletin, booklets and journals published from relevant banks and other external sources also have been used.

Almost secondary data has been taken in this study. All the data which are required are identified and selected. These data are taken out from financial statement of Banks. These data are managed properly for the study. The needed data are collected from the balance sheet, profit & loss account, other related books of account of the concerned bank, security board and Nepal Rastra bank. The primary data has been taken from interviews, questionnaires, observations and direct meeting with concerned persons.

3.6 Tools and Techniques used for Analysis

For the objectives and achievement of the study, the collected data are computed and analyzed using various financial and statistical tools. The analysis of data will be done according to the pattern of available data. The descriptions of financial as well as statistical tools are as follows.

3.6.1 Financial Tools

The financial tools are used to find the financial strengths, weakness, opportunity and threats of a firm. An analysis of financial statements helps to take managerial and

financial decisions. In this study, various financial tools will be employed for the sake of analysis but the basic tools for financial analysis will be ratio analysis.

Ratio analysis has been accepted as the most dominant financial tools to analyze and interpret the financial statements. It represent the relationship of the numerical values between two terms in financial statement. The relationship between two accounting figures, expressed mathematically is known as financial ratio (ratio analysis) [Pandey, 1991:110]. It is the systematic use of ratio to interpret the financial statement so that the strength and weakness of the firms as well as its historical performance and current financial conditions can be determined. Ratio helps to summarize large quantities of financial data and to make qualitative judgement about the firm's financial performance. We have different kinds of ratios as:

- i. Liquidity Ratio
- ii. Leverage or Capital Structure Ratio
- iii. Activity or Turnover Ratio
- iv. Profitability Ratio

There are four kinds of ratio. In this study, we are going to discuss two ratios. Leverage ratio and profitability ratio.

Leverage ratio explains about the capital structure of the banks where as profitability ratio explains about financial condition of the company.

Leverage Ratio

The terms that are related with capital structure are studies within this ratio. The leverage ratios are calculated to judge the long term financial position of a firm. These ratio measure the enterprise's ability to pay the interest regularity and to repay the principal on maturity financial leverage rises the expected rate of return to stockholders for two reasons (a) since interest is deductive, the debt financing lower the tax bill and leaves more of the firms operating income available to its investors (b) if the rate of return on assets (EBIT/Total assets) exceeds the interest rate on debt as it to finance assets pay the interest on the debt and have something left over as a "Bonus" for its shareholders (Western & Brigham, 1982, p. 290).

The following ratios are included in leverage ratio for the study.

i) Debt to Total Assets Ratio

This ratio measures the extent to which borrowed funds have been used to finance the company's assets. It shares the relationship between total debt and total assets of the firm. The total debt includes long-term debt and current liabilities. The total asset consists of permanent assets and other assets. It is calculated as:

$$\text{Debt to Total Asset Ratio} = \frac{\text{Total Debt}}{\text{Total Assets}} \times 100$$

Lower ratio is better for the company. The lower total debt to total assets ratio indicates that the creditors claim in the total assets of the company is lower than the owner's claim and vice-versa.

ii) Debt to Equity (Shareholder's Fund) Ratio

This ratio measures the proportion of Debt holder's amount in respect to shareholder's fund. Debt means the amount bears interest and fund of shareholder has share capital and general reserves. Debt and shareholder's equity are used in financing assets of the companies. So, it reflects the relative claims of creditors and shareholders against the assets of the firm. Debt to equity ratio indicates the relative proportions of debt and equity. The relationship between outsiders claim and owners capital can be shown by debt equity ratio. It is calculated as:

$$\text{Debt to Equity Ratio} = \frac{\text{Total Debt}}{\text{Shareholder's Equity}} \times 100$$

This ratio is also known as debt to net worth ratio. A high debt equity ratio indicates that the claims of the creditors are greater than that of shareholders or owners of the company.

iii) Long-term Debt to Total Debt Ratio

The long-term debt to total debt ratio measures the percentage of long-term debt to total debt used in the companies. So, it is the percentage of long-term debt among the total debt employed by the company. It is calculated as:

$$\text{Long-term Debt to Total Debt Ratio} = \frac{\text{Long-term Debt}}{\text{Total Debt}} \times 100$$

iv) Interest Coverage Ratio

This ratio indicates the ability of a firm to pay interest charges on its borrowed capital. The interest coverage ratio use to test the firm's debt describing capacity. It is also called "Debt Service Ratio" or "Time Interest Earned Ratio". It is calculated by dividing net profit before interest and taxes (EBIT) by the amount of fired interest charges. It is calculated as:

$$\text{Interest Coverage Ratio} = \frac{\text{Earning Before Interest and Tax}}{\text{Annual Interest}}$$

A high interest coverage ratio indicates the company's strong capacity to meet interest obligations. A firm always prefers high interest coverage ratio because low interest coverage ratio is a danger signal lower interest coverage ratio means the firm is using excessive debt and does not have an ability to offer assumed payment of interest to the creditors.

iv) Capital Structure Analysis

Different approached have been developed under the relevancy of capital structure to value of the firm and cost of capital. Net income approach and traditional approach argued capital structure as relevant matter and net operating income approach and MM approach argued capital structure as irrelevant matter.

Under the NI and NOI approach we can sort out some formula

Overall Capitalization Rate (Under NI approach)

The overall capitalization rate (overall cost of capital) is measured by dividing net operating income (EBIT) by the value of the firm. The value of the firm is the book value of debt and market value of the equity. It is calculated as:

$$\begin{aligned} \text{Overall Capitalization Rate (K}_o\text{)} &= \frac{\text{Net Operating Income}}{\text{Value of the firm}} \\ &= \frac{\text{EBIT}}{V} \end{aligned}$$

Impact of debt on value and overall cost

- If amount of debt increase, value of firm also increases and overall capitalization rate decreases.
- If amount of debt decreases, value of firm also decreases and overall capitalization rate increases.

Equity Capitalization Rate (Under NOI Approach)

Under this approach, net operating income is capitalized at an overall capitalization rate to obtain the total market value of the firm. The market value of the debt, then, is deducted from the total market value to obtain the market value of the stock it is measured by dividing net income by the value of equity. It is calculated as:

$$\text{Equity Capitalization Rate (Ke)} = \frac{\text{Net Income}}{\text{Value of Equity}}$$
$$= \frac{\text{EBIT} - I}{S}$$

Impact of debt on value, overall cost and equity capitalization rate

- A change in amount of debt in capital structure does not affect the value of firm and overall cost of capital.
- If amount of debt increases, equity capitalization rate (Cost of equity) also increases and vice-versa.

Profitability Ratio

The earning capacity of a business is measured by profitability ratio. Profitability ratio is related to profit and shows the overall efficiency of the business concern. It indicates the degree of the success in achieving desired profit. Profit is the difference between revenue and expenses over certain period of time. Profit is ultimate output of the company and its existence is not justified if it fails to make sufficient profit. So, profits are essential for every firm to survive and to grow a long period of time. Profitability ratios are efficiency of the business. The profitability ratio can be study in relation to sales and investment.

The following ratios are calculated under the profitability ratio for the study.

I) Return on Total Assets

Return on total assets explains the contribution of assets to generating net profit. This ratio indicates the efficiency of the assets mobilization. In other word, ROA is an overall profitability, which measure earning power and overall efficiency of the organization. The ratio explains net income for each unit of assets. It is calculated as:

$$\text{Return on Total Assets (ROA)} = \frac{\text{Net Profit After Tax}}{\text{Total Assets}}$$

Higher ratio indicates higher efficiency in utilizing of assets of the firm and vice-versa. From the point of view of judging operational efficiency, rate of return on total assets is more useful measure.

II) Return on Shareholder's Equity

The equity capital of the bank is its owned capital. The main objective of any bank is wealth maximization i.e. to earn high profit by maximizing return on its equity capital. Shareholders are the owners of the company and their funds must be utilized to raise the profit. This ratio analyze whether the company has been able to provide higher return on investment to the owners or not. It is calculated as

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

A company's owner always prefer higher ratio of return on shareholders' equity and higher ratio represents the higher efficiency of the bank in utilizing shareholders fund and vice-versa.

III) Earning Per Share

Ordinary shareholders want some return on their investment which is known as earning per share. Earning per share of an organization gives the strength of the share in the market. It shows how much of the total earnings belong to the ordinary shareholder it is calculated as:

$$\text{Earning Per Share (EPS)} = \frac{\text{Net Profit after Tax} - \text{Preference Dividend}}{\text{Nuber of Equity (Common) Shares}}$$

The more per share return, the more excellent it is and the less per share return, the worse it is.

IV) Dividend Per Share

When a portion of the profit is paid to the common shareholders, on a per share basis the payment is known as dividend per share. Dividend per share is calculated to know the share of dividend that the shareholders receive in relation to the paid up value of the share. A large number of present and potential investors may be interested in the dividend per share, rather than the earning per share. Therefore, an institution offering a high dividend per share is regarded as efficient in fulfilling shareholders expectations, which will also enable to increase the value of an institution. It is calculated as:

$$\text{Dividend Per Share (DPS)} = \frac{\text{Total Dividend (i.e.earning available to equity shareholders)}}{\text{Nuber of Equity Shares}}$$

The dividend per share is considered excellent when it is higher.

V) Price Earnings Ratio

Price earnings ratio describes investor's expectation about the growth of the firm earning. This ratio is closely related to the earning yield. The reciprocal of the earning yield is called price earning ratio. This ratio is drawn out by dividing the market value per share by earning per share. It is calculated as:

$$\text{Price Earnings Ratio} = \frac{\text{Market Value Per Share}}{\text{Earning Per Share}}$$

Higher market price suggests that investors expect earning to grow and this gives a high P/E implies that investors feel that earning are not likely to rise.

3.6.2 Statistical Tools

Statistical and research cannot be separated whenever research work is carried on statistics should have output of the research. In today's world there is hardly any research work which we can find complete without statistical data and statistical methods. The statistical tools used in the study are as follows:

i) Arithmetic Mean (Average)

Arithmetic mean can be expressed as the average value or sum of all values divide by number of value. It is calculated as:

$$\begin{aligned} \text{Arithmetic Mean}(\bar{X}) &= \frac{X_1 + X_2 + X_3 + \dots + X_n}{N} \\ &= \frac{\sum X}{N} \end{aligned}$$

Where,

$\sum X$ = Sum of all values of the variables

N = Number of observation

ii) Standard Deviation

The standard deviation describes about risk of the concerned firm. It 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 the magnitude of the deviation of the values from their mean (\bar{X}) and vice-versa. It is calculated as:

$$\text{Standard Deviation } (\sigma) = \sqrt{\frac{\sum (X - \bar{X})^2}{N}}$$

Where,

$\sum (X - \bar{X})^2$ = The sum of difference between values and their mean

N = Number of observation

iii) Coefficient of Correlation

Correlation can be defined as a degree of linear relationship existing between two or more variables. Correlation is an analysis of the covariance between two or more variables and correlation analysis deals to determine the degree of relationship between variables. There are simple, partial and multiple correlations. It may be positive, negative and zero correlation can be classified as linear and non-linear.

Coefficient of correlation is an important measure to describe how one variable explains another. It is the simplest of ascertaining the correlation between two variables. It is not influenced by the size of the extreme items. Between different processes of correlation, we use Karl Pearson's coefficient of correlation method. The correlation between two variables X and Y for N observation is measure by:

$$\text{Coefficient of Correlation (r)} = \frac{N \sum XY - \sum X \sum Y}{\sqrt{[N \sum X^2 - (\sum X)^2][N \sum Y^2 - (\sum Y)^2]}}$$

Where,

N= Number of observation of X and Y

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

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

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

$\sum X^2$ = Sum of square of the observation in variable X

$\sum Y^2$ = Sum of square of the observation in variable Y

The result of correlation 'r' always lies between +1 and -1, i.e. correlation can either be positive or Negative. If correlation is positive, it explains that the variables are moving in the same direction. If correlation is negative, it explains that the variables are moving in the opposite direction.

iv) Probable Error (P.E.)

The probable error (P.E.) helps to test the reliability of the calculated value of correlation coefficient. With the help of the P.E., it is possible to determine the reliability of the value of coefficient. Decision rules for significant tests are:

a) if $r < P.E.$, the value of 'r' is not significant no matter how high the value of 'r' is, i.e. there is no evidence of correlation between the variables.

b) if $r > 6 P.E.$, the value of 'r' is significant.

c) if 'r' does not satisfy either of the above two conditions the relation is inconclusive.

The probable error is calculated as:

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

The P.E of correlation Coefficient may be used to determine the limits within which the population correlation coefficient lies. By adding and subtraction the P.E from the 'r' we get respectively the upper and lower limit within which 'r' in the population can be expected to lie. Therefore, the limit of the population correlation coefficient is r ± P.E.

(v) Regression Analysis

Regression is one of the statistical tools which is used to determine relationship between two or more variables and to make estimate of one variable on the basis of the other variable. It helps which unknown value of one variable can estimated on the basis of known value of the variable. In this study, simple regression equation is used.

Simple Regression Analysis

Regression analysis is used as a tool of determining the strength of relationship between two variables. Thus, it is a statistical value of known variable when the value of other variables is known. The unknown variables, which have to be predicted is called dependent variable and the known variable is called independent variable (Shrestha and Silwal, 249-250). The general form of simple regression line is:

$$Y = a + bx$$

Where,

Y=dependent variable

X=independent variable

a=intercept of y on x or regression constant

b= slope of the regression line or regression coefficient

Regression Constant (a)

It is known as numerical constant that determine the distance to the fitted line directly above or below the origin (i.e. Y-intercept). The value of the constant, which is intercept of the model, indicates the leverage level of dependent variable when independent variable is zero. In other words, it is better to understand that constant indicates mean or average effect on dependent variable if all the variables omitted from the model.

Regression coefficient (b)

The regression coefficient of each independent variable (b) indicated the marginal relationship between that variable and value of dependent variable, holding constant effect of all other independent variables in the regression model. It is known as the slope of regression line. In other words, the coefficient describes how to change in dependent variable affect the variable of the dependent variable estimate. It is also that the numerical constant change in dependent variable.

(vi) Test of Hypothesis

The test of hypothesis is a process of testing population on the basis of the sample drawn from the population. The computed value of statistics may differ from the hypothetical value of the parameter due to sampling fluctuation. If the differences are small, we consider that has arisen due to sampling fluctuation. Hence the difference is considered to be insignificant and the hypothesis is rejected. (Shrestha and Manandhar, Valley publishers, P.6-11)

Another type to measure the statistical analysis is significance of the slope of the line has been calculated. For this purpose, null hypothesis will be formulates, as the slope of the line is zero. This can be formulated as follows:

$$S_y = \sqrt{\frac{\sum Y^2 - a \sum Y - b \sum XY}{N-2}}$$

Where,

S_y =indicates the standard error of the 'Y' value.

The s_y value results are again put in calculating the standard error of estimate of the slope of the line. That is:

$$S_b = \frac{S_y}{\sqrt{\sum(x - \frac{\sum X}{N})^2}}$$

The resultant figure is put in the following formula and compared it with the tabulated value, which determine statistically significant of the slope of the line that is,

$$t = \frac{b}{S_b}$$

Where,

t indicates the calculated t-value

Decision - t calculated value \leq t tabulated at $\alpha=5\%$ level of significance, it is not significant.

CHAPTER - IV

PRESENTATION AND ANALYSIS OF DATA

This chapter is the most important part of the study. The chapter deals with the presentation and analysis of collected and filtered data of the Joint Venture Banks of Nepal in order to fulfilled the objectives of the study. To obtain the best result, the data have been analyzed according to the research methodology as mentioned in third chapter.

The basic objective of the study is to explore the impact of capital structure on cost of capital of sampled banks in order to accomplish the mentioned objective both the descriptive and evaluate research methodologies had been employed. To make our study effective and precise as well as easily understandable this chapter is categorized in three parts; presentation, analysis and interpretation. The analysis is based on primary data and secondary data available. In presentation section data are presented in terms of table, graph chart of figures according to need. The presented data are then analyzed using different financial and statistical tools earlier mentioned in chapter three. At last the results of analysis are interpreted. Various financial and statistical tools have been used to analyze the impact of capital structure on cost of capital of sampled banks.

4.1 Financial Analysis

Financial analysis designed to determine the relative strengths and weakness of business operations. It also provides a frame work for financial planning and control financial analysis concentrates on financial statement analysis, which highlights the key aspects of firm's operation. Financial statement analysis involves a study of the relationship between income statement and balance sheet accounts, how these relationship change over time and how a particular firm compares with other firms in its industry (comparative ratio analysis). Different types of ratios are computed under financial tools analysis which are describes below.

4.1.1 Debt to Total Assets Ratio

Total debt to total assets ratio measures the percentage of the firm's assets financed by creditors. The funded debt comprises of interest bearing debt (i.e. Borrowing, Bills payables and other liabilities). In the same manner, the total assets consists of permanent assets and other assets. The following table and figure shows the position of Debt to total assets ratio in the banks over the past five-year (2005/06) - 2009/10).

Table No. 7

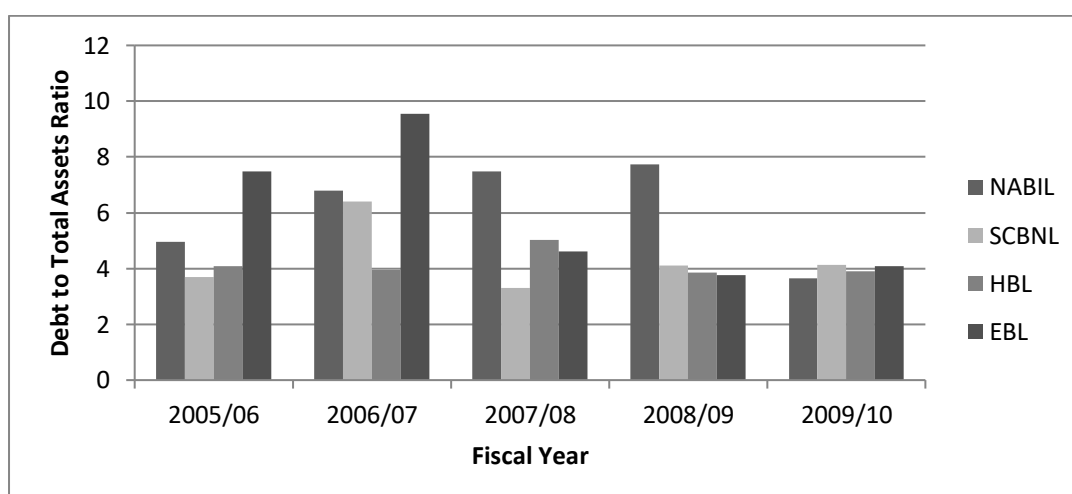
Comparative Debt to Total Assets Ratio of selected Banks

Fiscal Year Bank	2005/06	2006/07	2007/08	2008/09	2009/10	Total	Average	S.D
NABIL	4.96	6.80	7.49	7.73	3.65	30.63	6.13	1.57
SCBNL	3.70	6.41	3.30	4.10	4.13	21.64	4.33	1.08
HBL	4.08	3.95	5.03	3.86	3.90	20.82	4.16	0.44
EBL	7.48	9.54	4.61	3.77	4.09	29.49	5.90	2.25

Source: Annual Report of concerned bank and Annex 1 and 13

Figure No. 14

Presentation of debt to Total Asset Ratio of selected Banks



The above table and multiple bar diagram shows the debt to total assets ratio of NABIL in the year 2005/06 is 4.96%. It indicates that in total assets 4.96% of amount is financed by creditors. Same as in year 2006/07, 2007/08, 2008/09, 2009/10 are 6.80%, 7.49%, 7.73% and 3.65% respectively. The average ratio of debt to total assets is 6.13% and standard deviation is 1.57. The highest ratio was in year 2008/09 and lowest ratio was in year 2009/10.

Similarly, in case of SCBNL it shows the debt to total assets ratio in the year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 are 3.70%, 6.41%, 3.30%, 4.10% and 4.13% respectively. The average ratio is 4.33% and standard deviation is 1.08. The highest ratio was in year 2006/07 and lowest ratio was in year 2007/08.

Again, it shows the debt to total assets ratio HBL is 4.08% in the year 2005/06. Which means it has 4.08% of amount financed by creditors. Same as in year 2006/07, 2007/08, 2008/09 and 2009/10 are 3.95%, 5.03%, 3.86% and 3.90% respectively. The average ratio of debt to total asset is 4.16% and standard deviation is 0.44. The highest ratio was in year 2007/08 and lowest ratio was in year 2008/09.

Same as in EBL, it shows the debt to total assets ratio in the year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 are 7.48%, 9.54%, 4.61%, 3.77% and 4.09% respectively. The average ratio is 5.90% and standard deviation is 2.25. The highest ratio was in year 2006/07 and lowest ratio was in year 2008/09.

Comparatively, NABIL has highest share of funded debt in total assets of 6.13% and HBL has lowest share of funded of 4.16%. EBL has higher changes in ratio so its standard deviation is higher than other banks, it is 2.25.

4.1.2 Long-term Debt to Total Debt Ratio

The relationship between long term debt and total debt has a decisive impact on the financial structure of the companies. This relationship indicates what percentage of total debt is covered by long term debt of the firm. Normally firms use short term and long term debt. If the firm use large amount of short term loans and occur current liabilities and provision in the larger amount, the percentage of long-term debt on total debt will be low and vice-versa. The higher ratio of long term debt to total debt indicates the higher claim of long term debt holders upon the total debt and the lower ratio indicates the higher portion of short term loans and current liabilities in the total debt of the firm. The following table and figure shows the position of long-term debt to total debt ratio in the banks over the past five years (2005/06 - 2009/10).

Table No. 8

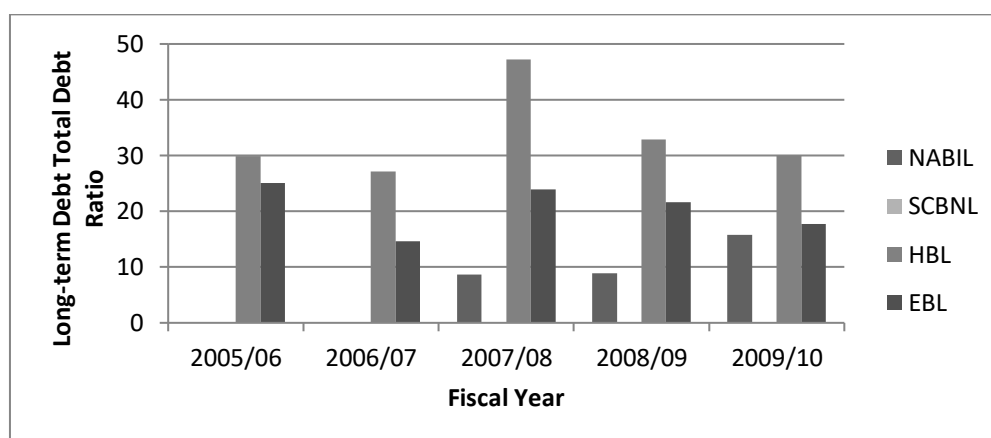
Comparative long-term Debt to Total Debt Ratio of Selected Banks

Fiscal year Banks	2005/06	2006/07	2007/08	2008/09	2009/10	Total	Average	S.D
NABIL	-	-	8.63	8.85	15.75	33.23	6.35	6
SCBNL	-	-	-	-	-	-	-	-
HBL	29.92	27.19	47.26	32.91	30.00	167.28	33.46	7.14
EBL	25.12	14.67	23.97	21.58	17.74	103.08	20.62	3.90

Source: Annual Report of concerned bank and Annex 2 and 14

Figure No. 15

Presentation of Long term Debt to Total Debt Ratio of Selected Banks



The above table and multiple bar diagram shows the long term debt to total debt ratio of NABIL in the year 2007/08, 2008/09, 2009/10 are 8.63%, 8.85% and 15.75% respectively. There is no long-term debt in year 2005/06 and 2006/07. The average long-term debt to total debt is 6.65% and its standard deviation is 6. The highest ratio was in the year 2009/10 and lowest ratio was in the year 2007/08.

In case o SCBNL, there is no long-term debt in year 2005/06 to 2009/10.

In case of HBL, it shows the long terms debt to total debt in the year 2005/06 2006/07 2007/08, 2008/9, 2009/10 are 29.92%, 27.19%, 47.26%, 32.91% and 30% respectively. The average ratio is 33.46% and standard deviation is 7.14. The highest ratio was in the year 2008/09 and lowest ratio was in the year 2006/07.

Same as in EBL, it shows the long-term debt to total debt in the year 2005/06 2006/07 2007/08 2008/9 and 2009/10 are 25.12%, 14.67%, 23.97%, 21.85% and 17.74% respectively. The average ratio is 20.62% and standard deviation is 3.90. The highest ratio was in the year 2005/06 and lowest ratio was in the year 2006/07.

Comparison among selected banks, HBL has highest average long-term debt to total debt an NABIL has lowest average long-term debt to total debt. It shows that HBL subscribe higher long term debt than other banks. HBL has higher standard deviation of 7.14 which shows higher changes of long term debt during the study period.

4.1.3 Debt to Equity Ratio

The debt to equity ratio is the relationship between fund and owners capital. It is determined to measure the firm's obligation to creditors in relation to funds invested by owner. A high debt to 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 shareholders equity includes share capital, general reserve and surplus. The following table and figure shows the position of Debt to equity ratio in the banks over the past five year (2005/06–2009/10).

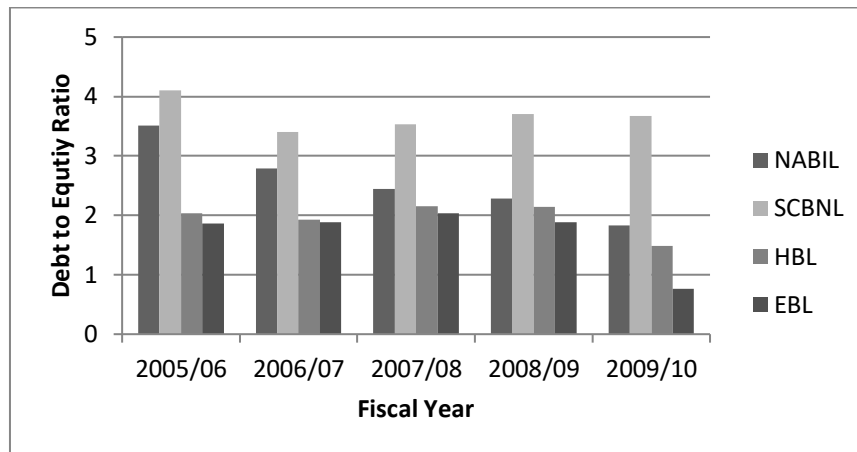
Table No. 9
Comparative Debt to Equity Ratio of Selection Banks

Fiscal year Bank	2005/06	2006/07	2007/08	2008/09	2009/10	Total	Average	S.D
NABIL	59.07	90.13	114.09	108.26	49.67	421.22	84.24	25.81
SCBNL	54.28	86.63	44.10	54.49	49.29	288.79	57.76	14.93
HBL	68.13	61.69	72.41	48.69	48.46	299.38	59.88	9.84
EBL	124.02	170.19	65.16	63.09	61.30	483.76	96.75	43.65

Source: Annual Report of concerned bank and Annex 3 and 15

Figure No. 16

Presentation of Debt to Equity Ratio of Selected Banks



The above table and multiple bar diagram shows the debt to equality ratio of NABIL in the year 2005/06 is 59.07%. Same as in year 2006/07, 2007/08, 2008/09 and 2009/10 are 90.13%, 114.09%, 108.26% and 49.67% respectively. The average debt to equity ratio is 84.24% and its standard deviation is 25.81 after computation of debt to equity ratio, we came to know that highest ratio was in year 2007/08 and lowest ratio was in year 2009/10.

Similarly, in case of SCBNL, it shows the debt to equity ratio in the year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 are 54.25%, 86.63%, 44.10%, 54.49% and 49.29% respectively. The average ratio is 57.76% and its standard deviation is 14.93. The highest ratio was found in year 2006/07 and lowest ratio was found in year 2007/08.

Again, it shows the debt to equity ratio of HBL is 68.13% in the year 2005/06. Same as in year 2006/07, 2007/08, 2008/09 and 2009/10 are 61.69%, 72.41%, 48.69% and 48.46% respectively. The average ratio of debt to equity ratio is 59.88% and its standard deviation is 9.84. The highest ratio was in year 2007/08 and lowest ratio was in year 2009/10.

Same as in EBL, it shows the debt to equity ratio in the year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 are 124.02%, 170.19% 65.16% 63.09% and 61.30% respectively. The average ratio is 96.75% and its standard deviation is

43.65. The highest ratio was in year 2006/07 and lowest ratio was in year 2009/10.

Comparatively, EBL has highest average debt to equity ratio of 96.75% than other banks which indicates EBL has employed more funded debt than other banks. EBL has higher standard deviation which shows that there was higher change in ratio during the study period.

4.1.4 Interest Coverage Ratio

The interest coverage ratio is useful tool to measure long term debt serving capacity of the firm. It is also called interest earned ratio. Interest coverage ratio reflects the firms 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. This ratio uses the concept of net profit before tax because interest is tax deductible or tax is calculated after paying interest on loan. This ratio examines the interest paying capacity of the firm by how many times the interest charges are covered by EBIT. The following table and figure shows the position of interest coverage ratio in the banks over the past five-years (2005/06 - 2009/10)

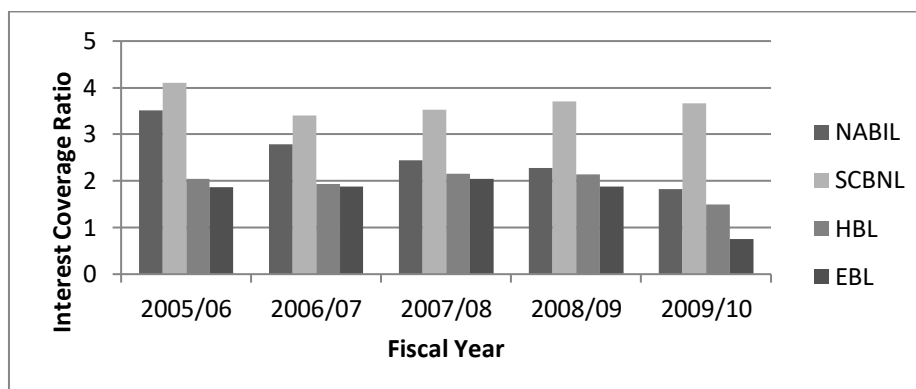
Table No. 10
Comparative Interest Coverage Ratio of Selected Banks

Fiscal year Bank	2005/06	2006/07	2007/08	2008/09	2009/10	Total	Average	S.D
NABIL	3.51	2.79	2.44	2.28	1.83	12.85	2.57	0.56
SCBNL	4.10	3.46	3.53	3.70	3.67	18.46	3.70	0.23
HBL	2.04	1.93	2.15	2.14	1.49	9.75	1.95	0.25
EBL	1.86	1.88	2.04	1.88	0.76	8.42	1.68	0.47

Source: Annual report of concerned bank and Annex 4 and 16

Figure No. 17

Presentation of Interest Coverage Ratio of Selected Banks



The above table and multiple bar diagram shows the interest coverage ratio of NABIL in the year 2005/06 is 3.51, which implies the number of times the interest covered by its EBIT. Same as in year 2006/07, 2007/08, 2008/09 and 2009/10 are 2.79, 2.44, 2.28 and 1.83 respectively. The average ratio of interest coverage is 2.57 and its standard deviation is 0.56. The highest interest coverage ratio was in year 2005/06 and lowest was in year 2009/10.

Similarly, in case of SCBNL, it shows the interest coverage ratio in the year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 are 4.10, 3.46, 3.53, 3.70 and 3.67 respectively. The average ratio is 3.70 and its standard deviation is 0.23. The highest ratio was in year 2005/06 and lowest ratio was in year 2006/07.

And, the interest coverage ratio of HBL in the year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 are 2.04, 1.93, 2.15, 2.14 and 1.49 respectively. The average ratio is 1.95 and standard deviation is 0.25. The highest ratio was in year 2007/08 and lowest ratio was in year 2009/10.

Again, it shows the interest coverage ratio of EBL in the year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 are 1.86, 1.88, 2.04, 1.88 and 0.76 respectively. The average ratio is 1.68 and its standard deviation is 0.47. The highest ratio was in year 2007/08 and lowest ratio was in year 2009/10.

Comparatively, the above information describes that SCBNL has highest average debt servicing capacity (interest coverage ratio) of 3.70 times than other banks

and NABIL has higher standard deviation of 0.56 which indicates that highly changes in ratio than other banks.

4.1.5 Degree of Financial Leverage

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:

$$DFL = \frac{\text{Percentage change in EBT}}{\text{Percentage change in EBIT}}$$

$$DFL = \frac{EBIT}{EBT}$$

The following table and figure shows the position of Degree of financial leverage in the banks over the past five-year (2005/06 - 2009/10).

Table No. 11

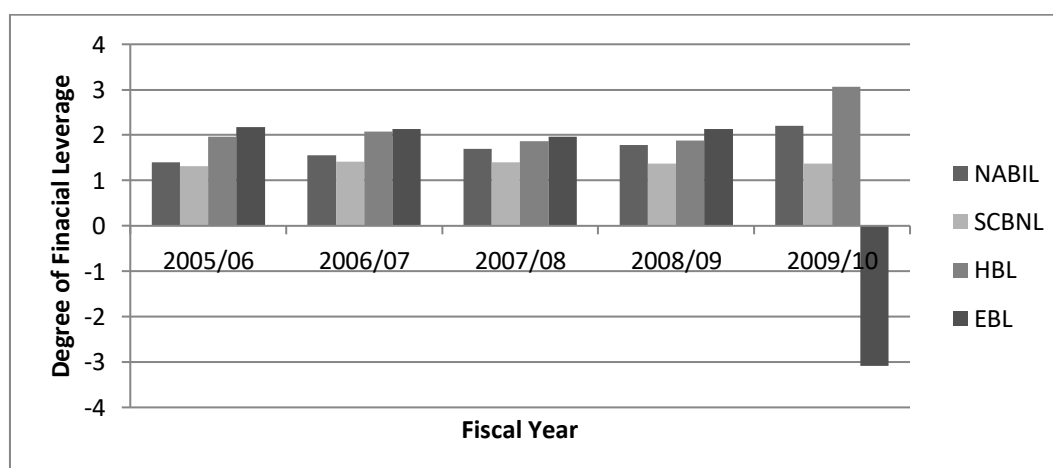
Comparative Degree of Financial Leverage of Selected Banks

Fiscal year Bank	2005/06	2006/07	2007/08	2008/09	2009/10	Total	Average	S.D
NABIL	1.40	1.56	1.70	1.78	2.21	8.65	1.73	0.27
SCBNL	1.32	1.41	1.40	1.37	1.37	6.87	1.37	0.08
HBL	1.96	2.07	1.87	1.88	3.06	10.84	2.17	0.45
EBL	2.17	2.14	1.96	2.14	-3.09	5.32	1.06	2.08

Source: Annual report of concerned bank and Annex 5 and 17

Figure No. 18

Presentation of Degree of Financial Leverage of Selected Banks



The above table and multiple bar diagram shows the degree of financial leverage of NABIL in the year 2005/06 is 1.40. Same as in year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 are 1.56, 1.70, 1.78 and 2.21 respectively. The

average of degree of financial leverage is 1.73 and its standard deviation is 0.28. The highest leverage was in year 2009/10 and lowest leverage was in year 2005/06.

In case of SCBNL, the degree of financial leverage are 1.32, 1.41, 1.40, 1.37 and 1.37 in the year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 respectively. The average leverage is 1.37 and its standard deviation is 0.08. The highest leverage was in year 2006/07 and lowest leverage was in year 2005/06.

In case of HBL, the degree of financial leverage are 1.96, 2.07, 1.87, 1.88 and 3.06 in the year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 respectively. The average leverage is 2.17 and standard deviation is 0.45. The highest leverage was in year 2009/10 and lowest leverage was in year 2007/08.

Similarly, the degree of financial leverage of EBL are 2.17, 2.14, 1.96, 2.14 and - 3.09 in the year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 respectively. There is negative leverage in the year 2009/10 because there is higher interest expense than EBIT. The average leverage is 1.06 and standard deviation is 2.08. The highest leverage was in year 2005/06 lowest leverage was in year 2009/10.

Above information proves that the highest average DFL is 2.17 of HBL than other banks. EBL has higher standard deviation which indicates highly changes in the ratio during study period.

4.1.6 Return on Total Assets

Return on total assets ratio measures the profitability of bank that explains a firm to earn satisfactory return on all financial resources invested in the bank's assets. The ratio explains net income for each unit of assets. Higher ratio indicates efficiency in utilizing its overall resources and vice-versa. The following table and figure shows the position of Return on total assets in the banks over the past five years (2005/06 - 2009/10).

Table No. 12

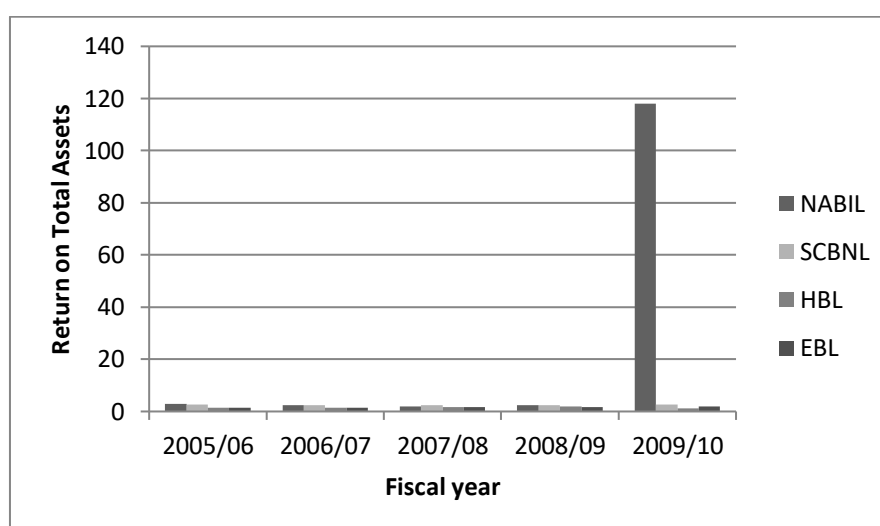
Comparative Return on Total Assets of Selected Banks

Fiscal year Bank	2005/06	2006/07	2007/08	2008/09	2009/10	Total	Average	S.D
NABIL	2.84	2.47	2.01	2.35	2.18	11.85	2.37	0.29
SCBNL	2.56	2.42	2.46	2.53	2.70	12.67	2.53	0.11
HBL	1.55	1.47	1.76	1.91	1.19	7.88	1.58	0.25
EBL	1.49	1.38	1.66	1.73	2.01	8.27	1.65	0.22

Source: Annual report of concerned bank an Annex 6 and 18

Figure No. 19

Presentation of Return on Total Assets of Selected Banks



The above table and multiple bar diagram shows the Return on total assets of NABIL in the year 2005/06, 2006/07, 2006/07, 2007/08, 2008/09 and 2009/10 are 2.84%, 2.47%, 2.01%, 2.35% and 2.18% respectively. The average ROA is 2.37% and its standard deviation is 0.29. After computation of ROA, We came to know that highest ROA was in year 2005/06 and lowest ROA was in year 2007/08.

Similarly, in case of SCBNL, it shows the ROA in the year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 are 2.56%, 2.42%, 2.46%, 2.53% and 2.70% respectively. The average ROA is 2.53% and standard deviation is 0.11. The highest ROA was in year 2009/10 and lowest ROA was in year 2006/07.

And, the ROA of HBL are 1.55%, 1.47%, 1.76%, 1.91% and 1.19% in the year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 respectively. The average ROA

is 1.58% and standard deviation is 0.25. The highest ROA was in year 2008/09 and lowest ROA was in year 2009/10.

Again, it shows the ROA of EBL in the year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 are 1.49%, 1.38%, 1.66%, 1.73% and 2.01% respectively. The average ROA is 1.65 and standard deviation is 0.22. The highest ROA was in year 2009/10 and lower ROA was in year 2006/07.

From the above calculation, we came to know that SCBNL has higher average ROA of 2.53% and HBL has lower ROA of 1.58%. NABIL has higher standard deviation of 0.28 which reflects greater change in the ratio during the study period.

4.1.7 Return on Shareholder's Equality

Shareholders' fund represent that part of long-term source of funds, which is collected by issuing equity share and preference shares. Shareholders are actually the owners of the company. Shareholders have ultimate claim in the return of the company. To measure the return earned by shareholders, return on shareholders' equity (ROSE) is used or this ratio is calculated to find out the profitability on the owner's capital or investment. The high ROSE represents the high profitability of the firm and vice-versa. The following table and figure shows the position of return on shareholders' equity in the banks over past five year (2005/06 - 2009/10).

Table No. 13

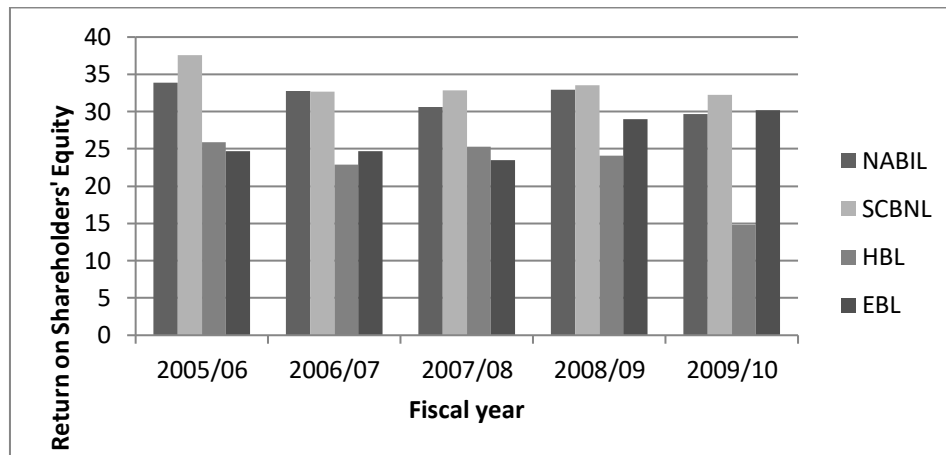
Comparative Return on Shareholder's Equity of Selected Banks

Fiscal year Bank	2005/06	2006/07	2007/08	2008/09	2009/10	Total	Average	S.D
NABIL	33.88	32.76	30.63	32.94	29.70	159.91	31.98	1.56
SCBNL	37.55	32.68	32.85	33.58	32.22	168.88	33.78	1.94
HBL	25.90	22.91	25.30	24.13	14.79	113.03	22.61	2.96
EBL	24.65	24.67	23.49	28.99	30.15	131.95	26.39	2.66

Source: Annual report of concerned bank Annex 7 and 19

Figure No. 20

Presentation of Return on Shareholder's Equity of selected Banks



From the above table and multiple bar diagram shows the Return on Shareholder's Equity of NABIL in the year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 are 33.88%, 32.76%, 30.63%, 32.94% and 29.70% respectively. The average ROSE is 31.98% and its standard deviation is 1.56. The highest ROSE was in year 2005/06 and lowest ROSE was in year 2009/10.

In case of SCBNL, the ROSE are 37.55%, 32.68%, 32.85%, 33.58% and 32.22% in the year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 respectively. The average ROSE is 33.78% and standard deviation is 1.94. The highest ROSE was in year 2005/06 and lowest ROSE was in year 2009/10.

Similarly, the ROSE of HBL are 25.90%, 22.91%, 25.30%, 24.13% and 14.79% in the year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 respectively. The average ROSE is 22.61% and standard deviation is 2.96. The highest ROSE was in year 2005/06 lowest RSOE was in year 2009/10.

Again, it shows the ROSE of EBL are 24.65%, 24.67%, 23.49%, 28.99% and 30.15% in the year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 respectively. The average ROSE is 26.39% and standard deviation is 2.66. The highest ROSE was in year 2009/10 and lowest ROSE was in year 2007/08.

Comparatively, SCBNL was found to be efficient to provide higher return to shareholders because it has highest average ROSE of 33.78% and HBL has

lowest average ROSE of 22.61%, so it provide lower return to shareholders. HBL has higher standard deviation of 2.96 which indicates the higher change during study period.

4.1.8 Earning Per Share

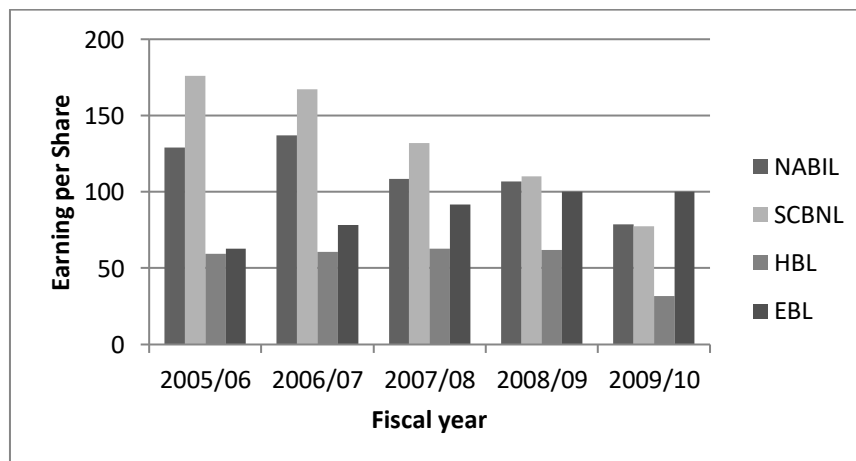
The profitability of bank from the point of view of the ordinary shareholders is earning per share. The ratio explains net income for each unit of share; it does not reflect how much is paid as dividend and how much is retained in the business. It shows how much theoretically belongs to the ordinary shareholders. It is an important index of the banks performance and the investors rely heavily on it for their investment decision. EPS of an organization gives the strength of the share in the market. The following table and figure shows the position of EPS in the banks over past five years (2005/06 - 2009/10).

Table No. 14
Comparative Earning per Share of selected Banks

Fiscal year Bank	2005/06	2006/07	2007/08	2008/09	2009/10	Total	Average	S.D
NABIL	129.21	137.08	108.31	106.76	78.61	559.97	111.99	20.40
SCBNL	175.84	167.37	131.92	109.99	77.65	662.77	132.55	36.36
HBL	59.24	60.66	62.75	61.90	31.80	276.34	55.27	11.79
EBL	62.78	78.42	91.82	99.99	100.16	433.17	86.63	14.32

Source: Annual report of concerned bank and Annex 8 and 20

Figure No. 21
Presentation of Earning per Share of Selected Banks



From the above table and multiple bar diagram shows the Earning per share of NABIL are Rs. 129.21, Rs. 137.08, Rs. 108.31, Rs. 106.86 and Rs. 78.61 in the year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 respectively. The average EPS is Rs. 111.99 and standard deviation is 20.40. The highest EPS was in the year 2006/07 and lowest EPS was in the year 2009/10.

Similarly, in case of SCBNL, it shows the EPS in the year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 are Rs. 175.84, Rs. 167.37, Rs. 131.92, Rs. 109.99 and Rs. 77.65 respectively. The average EPS is Rs. 132.55 and standard deviation is 36.36. The highest EPS was in the year 2005/06 and lowest EPS was in the year 2009/10.

And, the EPS of HBL are Rs. 59.24, Rs. 60.66, Rs. 62.74, Rs. 60.90 and Rs. 31.80 in the year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 respectively. The average EPS is Rs. 55.27 and standard deviation is 11.79. The highest EPS was in the year 2007/08 and lowest EPS was in the year 2009/10.

Again, it shows the EPS of EBL in the year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 are Rs. 62.78, Rs. 78.42, Rs. 91.82, Rs. 99.99 and Rs. 100.16 respectively. The average EPS is Rs. 86.63 and standard deviation is 14.32. The highest EPS was in the year 2009/10 and lowest EPS was in year 2005/06.

Comparison among selected banks, SCBNL has highest average EPS of Rs. 132.55 and HBL has lowest average RPS of Rs. 55.27. It shows SCBNL is more efficient to provide higher return to their shareholder than any other banks. SCBNL has higher standard deviation of 36.36 which indicates the higher changes during the study period.

4.1.9 Dividend Per Share

Dividend per share is evaluated to know the share of dividend that the shareholders receive in relation to the paid up value of the share. Companies like to follow a stable dividend policy. Since investors generally prefer such policy for certainly reason a stable dividend policy does not constitute constant DPS,

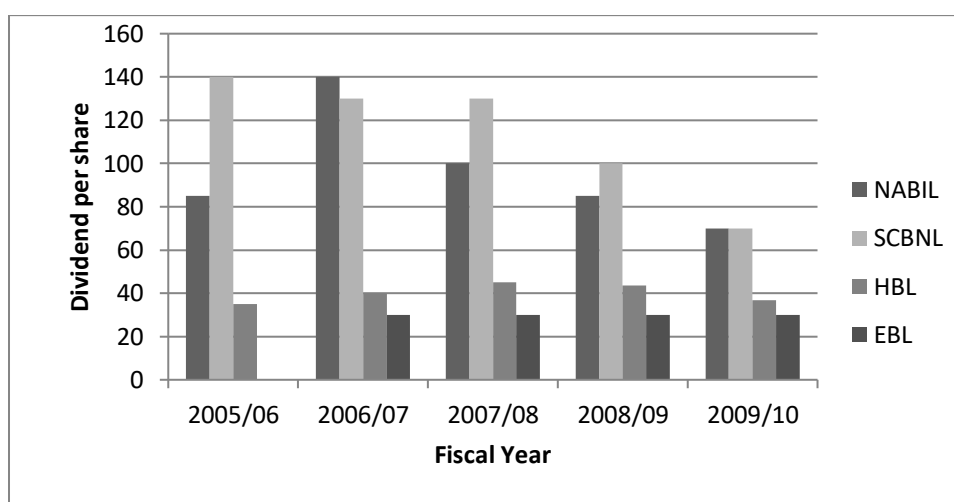
but a reasonable predicable dividend policy. The following table and figure shows the position of DPS in the banks over past five year (2005/06-2009/10)

Table No. 15
Comparative Dividend Per Share of Selected Banks

Fiscal year Bank	2005/06	2006/07	2007/08	2008/09	2009/10	Total	Average	S.D
NABIL	85	140	100	85	70	480	96	23.96
SCBNL	140	130	130	100	70	570	114	25.77
HBL	35	40	45	43.56	36.84	200.40	40.08	3.81
EBL	0	30	30	30	30	120	24	12

Source: Annual report of concerned bank and Annex 9 and 21

Figure No. 22
Presentation of Dividend Per Share of Selected Banks



From the above table and multiple bar diagram shows the Dividend per share of NABIL in the year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 are Rs. 85, Rs. 140, Rs. 100, Rs. 85 and Rs. 70 respectively. The average DPS is Rs. 96 and standard deviation is 23.96. The highest DPS was in year 2006/07 and lowest DPS was in year 2009/10.

In case of SCBNL, the DPS are Rs. 140, Rs. 130, Rs. 130, Rs. 100 and Rs. 70 in the year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 respectively. The average DPS is Rs. 114 and standard deviation is 25.77. The highest DPS was in the year 2005/06 and lowest DPS was in the year 2009/10.

In case of HBL, the DPS are Rs. 35, Rs. 40, RS. 45, Rs. 13.56 and Rs. 36.84 in the year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 respectively. The average DPS is Rs. 40.08 and standard deviation is 72.64. The highest DPS was in year 2007/08 and lowest DPS was in year 2005/06.

Similarly, the DPS of EBL are Rs. 30, Rs. 30, Rs. 30 and Rs. 30 in the year 2006/07, 2007/08, 2008/09 and 2009/10 respectively. There is no dividend paid in the year 2005/06 and after then are DPS same upto 2009/10. The average DPS is Rs. 24 and standard deviation is 12.

Comparison among selected banks, SCBNL has highest average DPS of Rs. 114 and EBL has lowest average DPS of Rs. 24 it shows SCBNL is more efficient to provide higher return to their shareholders than any other banks. SCBNL has higher standard deviation of 25.77 which indicates the higher changes during the study period.

4.1.10 Price Earning Ratio

Price earning ratio reflects the price currently being paid by the market for each rupees of currently reported EPS. In other words, it measures inventor's expectation and the market appraisal of the performance of the performance of the firm. It is an indication of the way investor's think that the bank would perform better in the future. The following table that and figure shows the position of P/E ratio in the banks over past five years (2005/06–2009/10).

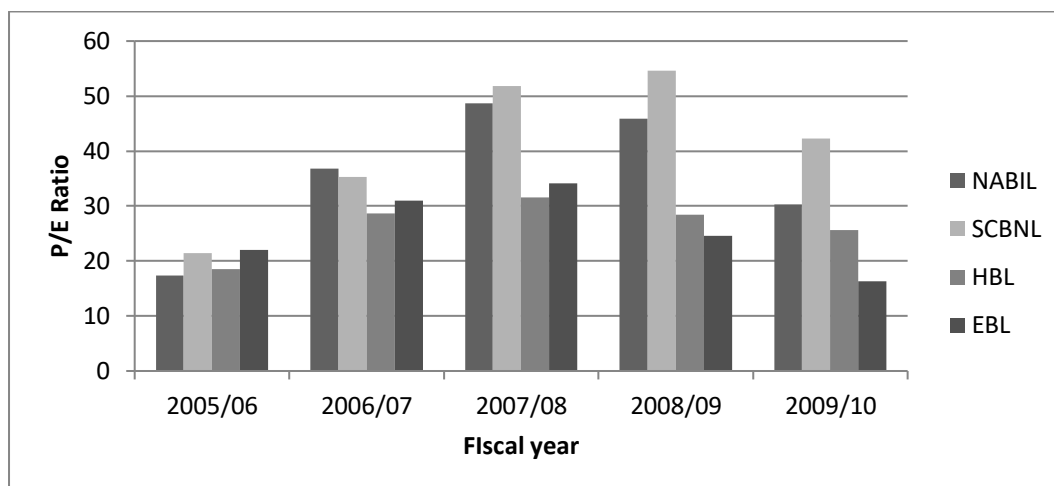
Table No. 16
Comparative Price Earning Ratio of Selected Banks

Fiscal year Bank	2005/06	2006/07	2007/08	2008/09	2009/10	Total	Average	S.D
NABIL	17.34	36.84	48.70	45.89	30.33	179.10	35.82	11.31
SCBNL	21.47	35.25	51.77	54.64	42.23	205.36	41.07	11.98
HBL	18.57	28.69	31.56	28.43	25.66	132.91	26.58	4.42
EBL	21.97	30.99	34.11	24.55	16.27	127.89	25.58	6.37

Source: Annual Report of Concerned Bank and Annex 10 and 22

Figure No 23

Presentation of Price Earning Ratio of selected Books



From the above table and multiple bar diagram shows the price earning ratio of NABIL in the year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 are 17.34, 36.84, 48.70 45.89 and 30.33 respectively. The average P/E ratio is 35.82 and standard deviation is 11.31. The highest ratio was in the year 2007/08 and lowest ratio was in the year 2005/06.

In case of SCBNL, the P/E ratio are 21.47, 35.25, 51.77, 54.64 and 42.23 in the year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 respectively. The average P/E ratio is 41.70 and standard deviation is 11.98. The highest ratio was in the year 2008/09 and lowest ratio was in the year 2005/06.

In case of HBL, the P/E ratio are 18.57, 28.69, 31.56, 28.43 and 25.66 in the year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 respectively. The average P/E ratio is 26.58 and standard deviation is 4.42. The highest ratio was in the year 2007/08 and lowest ratio was in the year 2005/06.

Similarly, the P/E ratio of EBL are 21.97, 30.99, 34.11, 24.55 and 16.27 in the year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 respectively. The average P/E ratio is 26.58 and standard deviation is 4.42. The highest ratio was in the year 2007/08 and lowest ratio was in the year 2009/10.

Comparison among selected banks, SCBNL has highest average P/E ratio of 41.07 and EBL has lowest average P/E ratio of 25.58. The ratio varies due to the variation among the EPS of different banks and market value of it. SCBNL has higher standard deviation of 11.98 which indicates the higher changes during the study period.

4.1.11 Overall Capitalization Rate

Overall cost of capital reflects the total cost of capital collected from various sources by the company. The overall capitalization rate was calculated on the basis of NI approach. This approach assumes the cost of debt is less than the cost of equity. Based on this approach the overall capitalization rate of the firm can be lower by increasing the amount of debt in capital structure. The following table and figure shows the position of overall capitalization rate in the banks over past five year (2005/06 – 2009/10).

Table No. 17

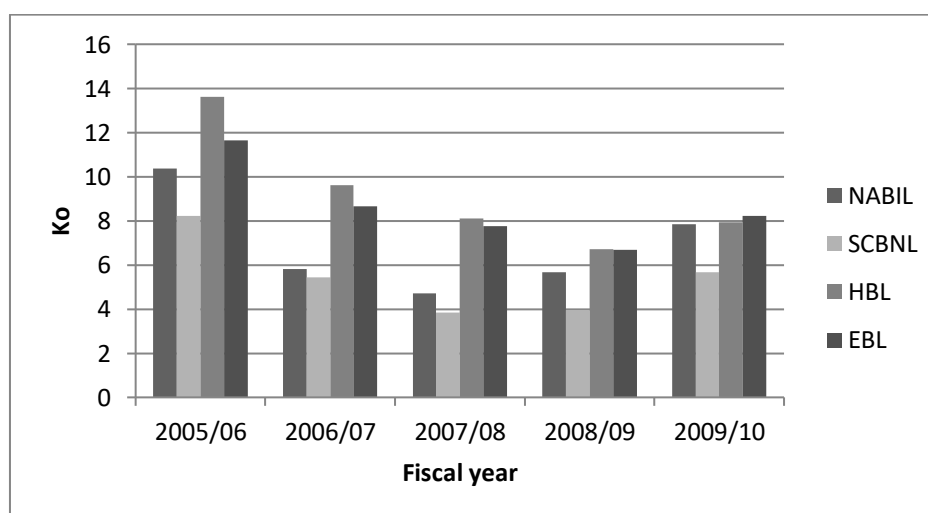
Comparative overall Capitalization Rate of Selected Banks

Fiscal year Bank	2005/06	2006/07	2007/08	2008/09	2009/10	Total	Average	S.D
NABIL	10.36	5.81	4.72	5.67	7.84	34.40	6.88	2.01
SCBNL	8.23	5.45	3.83	3.95	5.67	27.13	5.43	1.59
HBL	13.62	9.62	8.10	6.72	7.94	46	9.20	2.39
EBL	11.64	8.65	7.76	6.68	8.23	42.96	8.59	1.66

Source: Annual report of concerned bank and Annex 11 and 23

Figure No. 24

Presentation of Overall Capitalization Rate of Selected Banks



From the above table and multiple bar diagram shows the overall capitalization rate of NABIL in the year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 are 10.36%, 5.81%, 4.72%, 5.67% and 7.84% respectively. The average overall capitalization rate is 6.88% and standard deviation is 2.01. The highest ratio was in the year 2005/06 and lowest ratio was in the year 2007/08.

In case of SCBNL, the overall capitalization rate are 8.23%, 5.45%, 3.83%, 3.95% and 5.67% in the year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 respectively. The average overall capitalization rate is 5.43% and standard deviation is 1.59. The highest ratio was in the year 2005/06 and lowest ratio was in the year 2007/08.

In case of HBL, the overall capitalization rate are 13.62%, 9.62%, 8.10%, 6.72% and 7.94% in the year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 respectively. The average overall capitalization rate is 9.20% and standard deviation is 2.39. The highest ratio was in the year 2005/06 and lowest ratio was in the year 2008/09.

Similarly, the overall capitalization rate of EBL in the year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 are 11.64%, 8.65%, 7.76%, 6.68% and 8.23% respectively. The average overall capitalization rate is 8.59% and standard deviation is 1.66. The highest ratio was in the year 2005/06 and lowest ratio was in the year 2008/09.

Comparison among selected banks, HBL has highest average overall capitalization rate of 9.20%, and SCBNL has lowest average overall capitalization rate of 5.43%, HBL has higher standard deviation of 2.39% which shows higher changes in the ratio during the study period.

4.1.12 Equity Capitalization Rate

The equity capitalization rate was calculated based on NOI approach. 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 and vice-

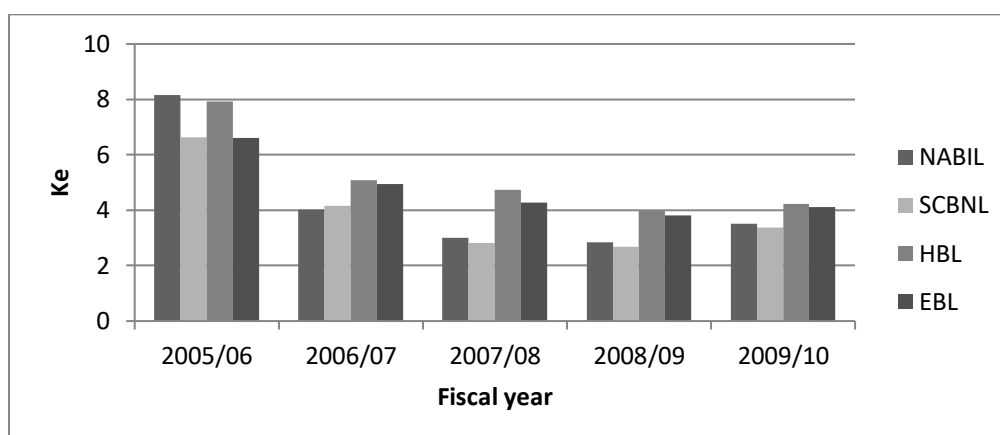
versa. The following table and figure shows the position of Equity capitalization rate in the banks over past five year (2005/06 – 2009/10).

Table No 18
Comparative Equity Capitalization Rate of Selected Banks

Fiscal year Bank	2005/06	2006/07	2007/08	2008/09	2009/10	Total	Average	S.D
NABIL	8.15	4.01	3.00	2.85	3.51	21.52	4.30	1.97
SCBNL	6.64	4.17	2.81	2.67	3.37	19.66	3.93	1.45
HBL	7.92	5.09	4.73	3.98	4.23	25.95	5.19	1.42
EBL	6.60	4.95	4.28	3.81	4.11	23.75	4.75	1.00

Source: Annual report of concerned bank and Annex 12 and 24

Figure No. 25
Presentation of Equity Capitalization Rate of Selected Banks



From the table and multiple bar diagram shows the Equity Capitalization rate of NABIL in the year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 are 8.15%, 4.01%, 3%, 2.85% and 3.51% respectively. The average equity capitalization rate is 4.30 and standard deviation is 1.97. The highest rate was in the year 2005/06 and lowest rate was in the year 2008/09.

In case of SCBNL, the equity capitalization rate are 6.64%, 4.17%, 2.81%, 2.67% and 3.37% in the year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 respectively. The average equity capitalization rate is 3.93% and standard deviation is 1.45. The highest rate was in the year 2005/06 and lowest rate was in the year 2008/09.

In case of HBL, the equity capitalization rate are 7.92%, 5.09%, 4.73%, 3.98% and 4.23% in the year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 respectively. The average equity capitalization rate is 5.19% and standard deviation is 1.42. The highest rate was in the year 2005/06 and lowest rate was in the year 2008/09.

Similarly, the equity capitalization rate of EBL in the year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 are 6.60%, 4.95%, 4.28%, 3.81% and 4.11% respectively. The average equity capitalization rate is 4.75% and standard deviation is 1. The highest rate was in the year 2005/06 and lowest rate in the year 2008/09.

Comparison among selected banks, HBL has highest average equity canalization rate of 5.19% and SCBNL has lowest average equity capitalization rate of 3.93% NABIL has higher standard deviation of 1.97 which shows higher changes in the rate during the study period.

4.2 Statistical Analysis

The statistical analysis incorporates various techniques for measuring the relationship between two or more than two variables as well as significance. In this study coefficient of correlation, simple regression, probable error and t-statistics has been used to achieve the objective of the study.

4.2.1 Correlation Analysis

4.2.1.1 Coefficient of Correlation between Debt Equity Ratio and Return on Shareholders' Equity

The correlation coefficient between D/E ratio and ROSE will give us information on increase debt capital portion in the capital structure increase return on equity. Here D/E ratio (x) is independent variable and ROSE (y) is dependent variable. positive values shows the positive relation and negative values shows the negative relation.

The following result is obtained for selected banks

Table 19**Coefficient of correlation between D/E Ratio an ROSE**

Banks	Correlation (r)	P.E	6 P.E	Level of significance	Remarks
NABIL	0.0912	0.2991	1.7946	Insignificant	$r < 6 \text{ P.E}$
SCBNL	-0.1266	0.2968	1.7808	Insignificant	$r < 6 \text{ P.E}$
HBL	0.6726	0.1652	0.9912	Insignificant	$r < 6 \text{ P.E}$
EBL	-0.5226	0.2193	1.3158	Insignificant	$r < 6 \text{ P.E}$

Source: Annex 25 (I and II)

Above table shows correlation coefficient between D/E ratio and ROSE of NABIL, SCBNL, HBL and EBL are 0.0912, -0.1266, 0.6726 and -0.5226 respectively. The correlation coefficient of NABIL and HBL shows positive relationship i.e. increase in debt capital will increase in ROSE and vice versa where as correlation coefficient of SCBNL and EBL shows negative relationship i.e. increase in debt capital will decrease in ROSE and vice versa. Considering the probable error (P.E), the value of 'r' is less than six time of P.E in the banks. Therefore, it is depicted that the value of 'r' in all banks are insignificant relationship between D/E ratio and ROSE.

4.2.1.2 Coefficient of Correlation between Debt Equity Ratio and Return on Assets

The correlation coefficient between D/E ratio and ROA of selected 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 debt capital and return. Here D/E ratio (x) is independent variable and ROA (y) is dependent variable positive values shows positive relation and negative values shows that negative relation.

The following result is obtained for selected banks

Table No. 20

Coefficient of Correlation between D/E Ratio and ROA

Banks	Correlation (r)	P.E	6 P.E	Level of significance	Remarks
NABIL	-0.4369	0.2441	1.4646	Insignificant	$r < 6 \text{ P.E}$
SCBNL	-0.5374	0.2145	1.2870	Insignificant	$r < 6 \text{ P.E}$
HBL	0.2090	0.2885	1.7310	Insignificant	$r < 6 \text{ P.E}$
EBL	-0.8501	0.0836	0.5016	Insignificant	$r < 6 \text{ P.E}$

Source: Annex 26 (I and II)

Above table shows correlation coefficient between D/E ratio and ROA of NABIL, SCBNL, HBL and EBL are -0.4369, -0.5374, 0.2090 and -0.8051 respectively. The correlation coefficient of NABIL, SCBNL and EBL shows negative relationship i.e. increase in debt capital will decrease in ROA and vice versa whereas HBL shows the positive relationship i.e. increase in debt will increase in ROA and vice versa.

Considering the probable error, the value of 'r' is less than 6 times of P.E in selected 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 banks are insignificant in-terms of debt to equity on assets.

4.2.1.3 Coefficient of Correlation between Overall Capitalization Rate and Debt Equity Ratio

The correlation coefficient between overall capitalization rate and debt equity ratio in terms of fixed deposit to net worth was calculated in order to measure whether increase in debt equity ratio decreases overall capitalization rate of the bank. Here, overall capitalization rate (x) is dependent variable and D/E ratio (y) is independent variable. Positive values shows the positive relation and negative values shows the negative relation.

The following result is obtained for Selected Banks

Table No. 21**Coefficient of Correlation between Overall Capitalization Rate and D/E Ratio**

Banks	Correlation (r)	P.E	6 P.E	Level of significance	Remarks
NABIL	-0.8480	0.0847	0.5082	Insignificant	$r < 6 \text{ P.E}$
SCBNL	0.1305	0.2965	1.779	Insignificant	$r < 6 \text{ P.E}$
HBL	0.5567	0.2082	1.2492	Insignificant	$r < 6 \text{ P.E}$
EBL	0.5270	0.1427	0.8562	Insignificant	$r < 6 \text{ P.E}$

Source: Annex 27 (I and II)

Above table shows correlation coefficient between overall capitalization rate (Ko) and D/E ratio of NABIL, SCBNL, HBL and EBL are -0.8480, 0.1305, 0.5567 and 0.5270 respectively. The correlation coefficient of SCBNL, HBL and EBL shows positive relation i.e. increase in debt capital will also increase in overall capitalization rate and vice versa. Whereas NABIL shows the negative relationship i.e. increase in debt capital portion in capital structure will decrease in overall capitalization rate and vice versa. Considering the probable error, the value of 'r' is less than 6 time of P.E. in the selected banks. So, the relationship between Ko and D/E ratio is insignificant.

4.2.1.4 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 the banks. It is assumed that there is significant relationship between EBIT and interest payment. Here, EBIT (x) is independent variable and interest payment (y) is dependent variable. Positive values shows the positive relation and negative values shows the negative relation

The following result is obtained for selected Banks

Table No. 22**Coefficient of Correlation between EBIT and Interest Payment**

Banks	Correlation (r)	P.E	6 P.E	Level of significance	Remarks
NABIL	0.9949	0.0031	0.0186	Significant	$r > 6 \text{ P.E}$
SCBNL	0.9569	0.0130	0.0780	Significant	$r > 6 \text{ P.E}$
HBL	0.8196	0.0544	0.3264	Significant	$r > 6 \text{ P.E}$
EBL	0.4436	0.2423	1.4538	Insignificant	$r < 6 \text{ P.E}$

Source: Annex 28 (I and II)

Above table shows correlation coefficient between EBIT and interest payment of NABIL, SCBNL, HBL and EBL are 0.9949, 0.9569, 0.8196 and 0.4436 respectively. The correlation coefficient of all banks shows positive relation i.e. increase in EBIT will also increase in interest payment and vice versa. Considering the probable error, the value of 'r' is greater than 6 times of P.E. in the NABIL, SCBNL and HBL. So, the relationship between EBIT and interest payment is significant in these three banks which shows that these three banks are significantly able to service their debt. Whereas the value of 'r' is less than 6 times of P.E. in the EBL. So, the relationship between EBIT and interest payment is insignificant.

4.2.2 Simple Regression Analysis

The simple regression helps to determine the relationship between different variable considering one as dependent and the other as independent variables. With the help of known variable one unknown variable can be estimated and it determined the relation between each dependent and independent variable. For the study only regression analysis has been considered.

4.2.2.1 Relationship between Cost of Equity and Leverage

The main objective of this section is to determine the relationship between leverage and cost of equity of the selected banks. Based on the traditional view K_e either remains constant or raise slightly with moderate level of debt and increase with leverage at increasing rate. Beside, the MM proposition argues that the cost of equity increase linearly with leverage. Above stated view-hold the equity decrease or remaining constant up to a point with the leverage. The relation between K_e and D/S can be present mathematically as below:

The simple regression equation is,

$$K_e = a + b D/S$$

Where,

$$K_e = y = \text{cost of equity} = \text{dependent variable}$$

$$D/S = x = \text{leverage} = \text{independent variable}$$

Under t-statistic test,

Null hypothesis H_0 : $b = 0$, The regression model of y on x is not significant

Alternative hypothesis H_1 : $b \neq 0$, The regression model of y on x is significant.

Table No. 23
Coefficient of Regression between Ke and D/S

Banks	Constant (a)	Regression coefficient (b)	t-value (calculated)	t-value (tabulated)	Relationship	Level of significance
NABIL	7.9680	-0.0435	-1.2050	3.182	Negative	Insignificant
SCBNL	2.8120	0.0194	0.3521	3.182	Positive	Insignificant
HBL	0.1060	0.0849	1.2596	3.182	Positive	Insignificant
EBL	4.4020	0.0036	0.2880	3.182	Positive	Insignificant

Source: Annex 29 (I, II, III & IV)

The above table shows the regression coefficient of Ke on D/S of SCBNL, HBL and EBL are positively related which indicates there is linear relationship between Ke and D/S. this means increase in D/S leads to increase in Ke and vice versa. Whereas regression coefficient of NABIL is negatively related which indicates that decrease in D/S leads to increase in Ke and vice versa and t-statistics for the variables is insignificant in all the banks because t-calculated value of all the banks are less than t-tabulated value. Thus, null hypothesis of cost of equity on leverage is not significant is accepted.

4.2.2.2 Relationship between Return on Shareholders' Equity and Leverage

The relationship between ROSE and D/S of the selected banks reveals whether the ROSE changes linearly or not with change in D/S. ROSE is taken as dependent variable and D/S, which is independent variable. The relation between ROSE and D/S are presented mathematically below:

The simple regressing equation is,

$$\text{ROSE} = a + b\text{D/S}$$

Where,

$$\text{ROSE} = y = \text{Return on shareholders' equity} = \text{dependent variable}$$

$$\text{D/S} = x = \text{Leverage} = \text{independent variable}$$

Under t-statistics test,

Null hypothesis H_0 : $b = 0$, The regression model of y on x is not significant

Alternative hypothesis H_1 : $b \neq 0$, The regression model of y on x is significant

Table No. 24
Coefficient of Regression between ROSE and D/S

Banks	Constant (a)	Regression coefficient (b)	t-value (calculated)	t-value (tabulated)	Relationship	Level of significance
NABIL	31.5180	0.0055	0.1596	3.182	Positive	Insignificant
SCBNL	34.7240	-0.0164	-0.2216	3.182	Negative	Insignificant
HBL	6.0680	0.2762	1.5738	3.182	Positive	Insignificant
EBL	29.46600	-0.0318	-1.0600	3.182	Negative	Insignificant

Source: Annex 29 (I, II, III & IV)

The above table shows the regression coefficient of ROSE on D/S of NABIL and HBL are positively related whereas SCBNL and EBL are negatively related. The positive relation indicates that the increase as in leverage leads to increase in ROSE and vice versa whereas negative relation indicates that the decrease in leverage leads to increase in ROSE and vice versa. And t-statistics is insignificant in all the banks because t-calculated value is less than t-tabulated value. Thus, Null hypothesis of Return on shareholders' equity on leverage is not significant is accepted.

4.2.3 Relationship between Earning Per Share and Leverage

In this section using simple regression, the relation between the EPS and D/S for selected banks had been calculated. The impact of leverage upon EPS of selected banks had been explored by taking EPS as dependent variable and D/S as independent variable.

The relation between EPS and D/S can be present mathematically as below:

The simple regression equation is,

$$\text{EPS} = a + b \text{ D/S}$$

Where,

EPS = y = Earning per share = dependent variable

D/S = x = Leverage = independent variable

Under t-statistic test

Null hypothesis H_0 : $b = 0$, The regression model of y on x is not significant

Alternative hypothesis H_1 : $b \neq 0$, The regression model of y on x is significant

Table No. 25

Coefficient of Regression between EPS and D/S

Banks	Constant (a)	Regression coefficient (b)	t-value (calculated)	t-value (tabulated)	Relationship	Level of significance
NABIL	95.9880	0.1900	0.4291	3.182	Positive	Insignificant
SCBNL	59.9060	1.2578	1.0448	3.182	Positive	Insignificant
HBL	14.4500	0.6817	1.1974	3.182	Positive	Insignificant
EBL	110.4740	-0.2464	-1.9712	3.182	Negative	Insignificant

Source: Annex 31 (I, II, III and IV)

The above table shows the regression coefficient of EPS on D/S of NABIL, SCBNL and HBL are positively related which indicate that the increase in leverage also increase in EPS and vice versa where as in case of EBL is negatively related which indicates that the decrease in leverage will increase in EPS and vice versa and t-statistics is insignificant in all the banks because t-calculated value is less than t-tabulated value. Thus, Null hypothesis of Earning per share on leverage is not significant is accepted.

4.2.2.4 Relationship between Price Earning Ratio and Leverage

The objective of this section was to determine the empirical relationship between P/E ratio and D/S. The study tried to find out whether P/E ratio changes proportionately or not with the change in leverage. The result is calculated by using regression model in which P/E ratio was taken as dependent variable and D/S as independent variable. The relation between P/E ratio and D/S can be presented mathematically as below:

The simple regression equation is,

$$\text{P/E ratio} = a + b \text{ D/S}$$

Where,

P/E ratio = y = price earning ration = dependent variable

D/S = x = leverage = independent variable

Under t-statistic test,

Null hypothesis H_0 : $b = 0$, The regression model of y on x is not significant

Alternative hypothesis H_1 : $b \neq 0$, The regression model of y on x is significant

Table No. 26

Coefficient of Regression between P/E ratio and D/S

Banks	Constant (a)	Regression coefficient (b)	t-value (calculated)	t-value (tabulated)	Relationship	Level of significance
NABIL	3.2680	0.3864	3.2335	3.182	Positive	Significant
SCBNL	56.6260	-0.2693	-1.9486	3.182	Negative	Insignificant
HBL	27.8280	-0.0208	-0.0803	3.182	Negative	Insignificant
EBL	21.5720	0.0414	0.5124	3.182	Positive	Insignificant

Source: Annex 32 (I, II, III and IV)

The above table shows the regression coefficient of P/E ratio on D/S of NABIL and EBL are positively related which indicates that increase in leverage will also increase P/E ratio and vice versa. Whereas in case of SCBNL and HBL are negatively related which indicates that decrease in leverage will increase in P/E ratio and vice versa and t-statistic of NABIL is significant because its t-calculated value is greater than t-tabulated value. Thus, alternative hypothesis of P/E ratio on leverage is significant is accepted. Whereas t-statistic of SCBNL, HBL and EBL are insignificant because its t-calculated value is less than t-

tabulated value. Thus, Null hypothesis of P/E ratio on leverage is not significant is accepted.

4.3 Primary Data Analysis

Primary data are collected from listed companies and individual academicians. More than one respondent have been included from the same organization as possible. The respondent of data cover personalities involving in policy formulation, investment and capital market

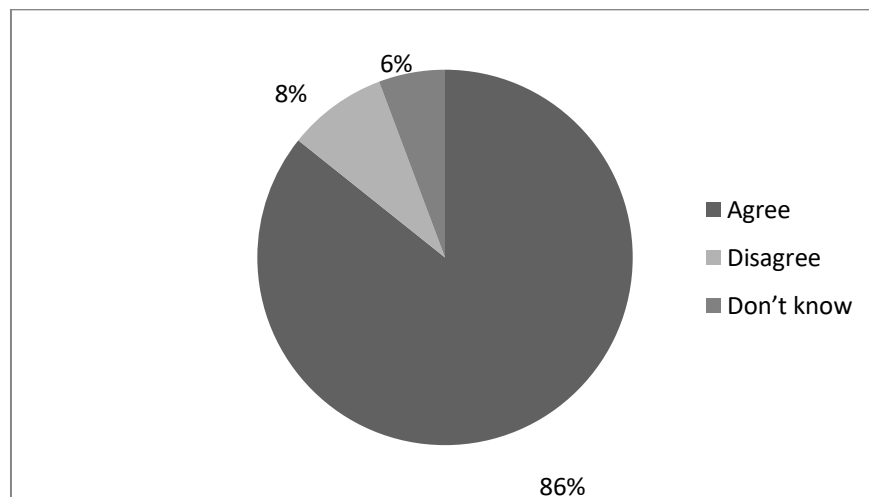
The following table contains profile of the respondent of the primary data. This profile contains finance managers, academicians, investor, service user and account officer.

Table No. 27
Profile of Respondents

S.N	Respondents Designation	No. of Respondent
1	Finance Managers	10
2	Academicians	7
3	Investors	7
4	Service users	6
5	Account officers	5

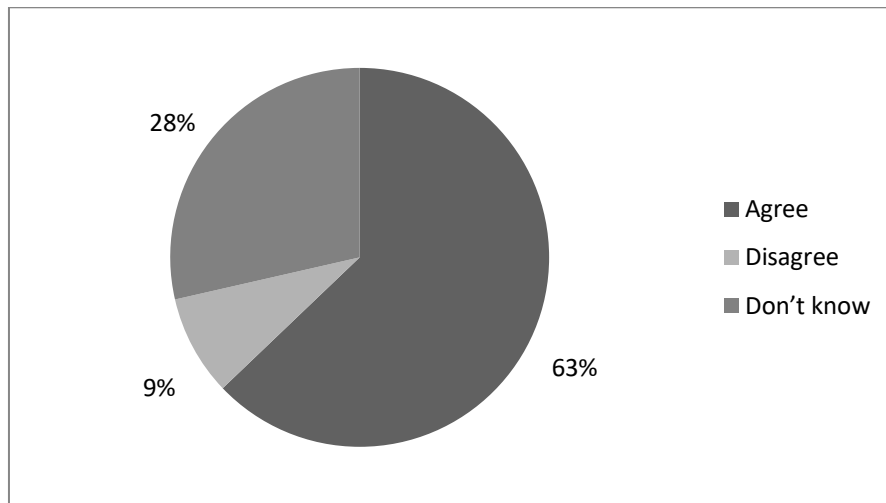
All together 35 observation are collected in this section. The analysis of the questionnaire is as follows:

Q.N. 1 Do you agree that use of debt affects the value of the firm?



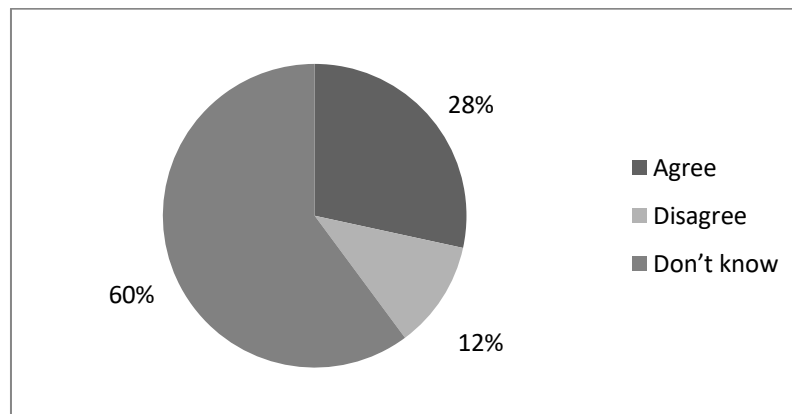
From the analysis of the pie-chart presented above it is found that 85.72% of the total respondent showed their agreement to the statement, 5.71% of them disagree while 8.57% says they don't know about the statement.

Q.N. 2. Do you agree that is there any necessity to maintain debt ratio as per other similar firms?



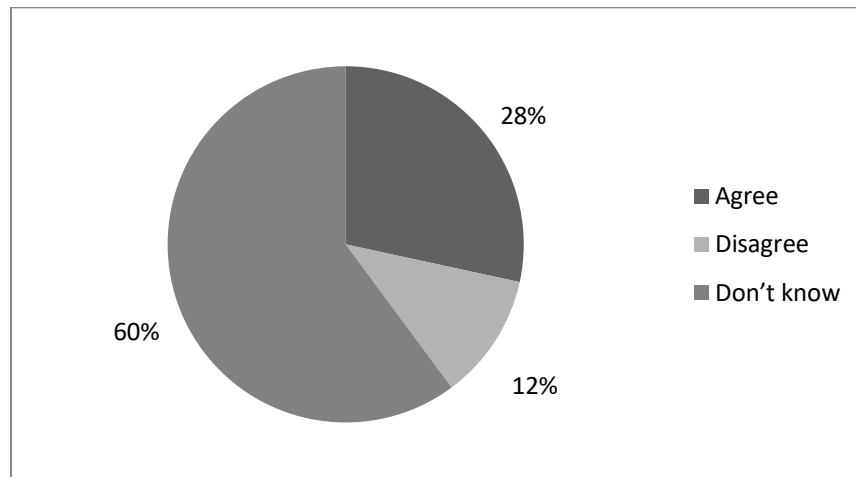
From the analysis of the pie-chart presented above it is found that 62.88% of the total respondents agree to the statement that the firms have to maintain debt level as per industry norm. 28.57% of the respondent disagree to the statement, they opined the debt level is not necessary to follow industry average but it depends on the projects and other factors to the particular firm while 8.57% of the respondent says they don't know about the statement.

Q.N. 3 Do you agree that the government policy affect the combination of debt and equity?



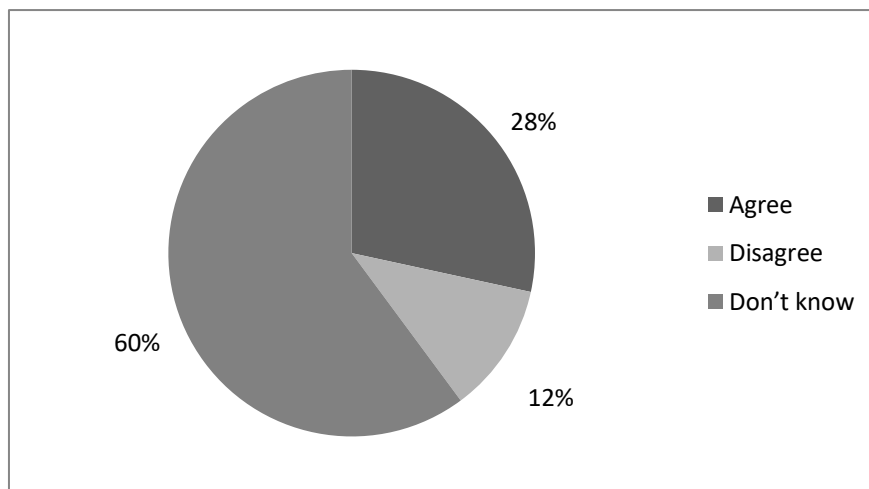
From the analysis of the pie-chart presented above it is found that 68.57% of the total respondent agree to the statement, 17.14% of them disagree to the statement while 14.29% says they don't know about the statement.

Q.N. 4 Do you agree that the degree of risk associated with in bank will also increase as leverage increase?



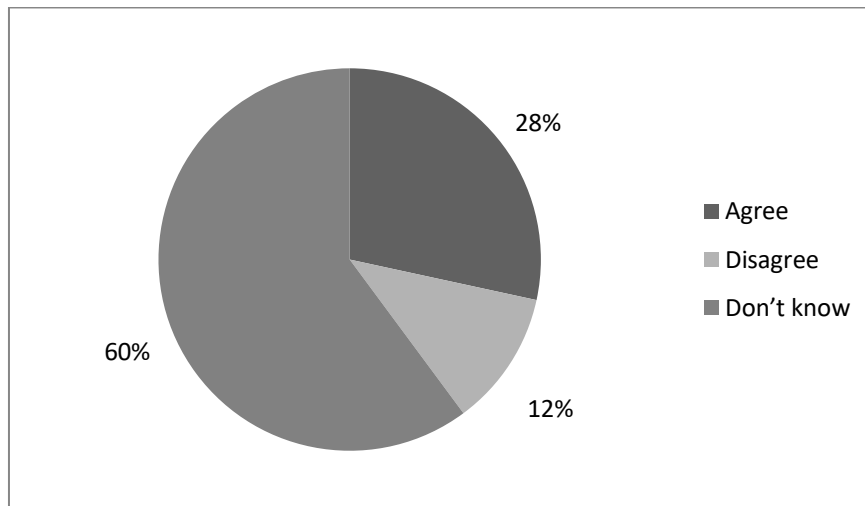
From the analysis of pie-chart presented above it is found that 85.72% of the total respondent agree to the statement, 5.71% of them disagree to the statement while 8.57% says they don't know about the statement.

Q. N. 5 Do you agree that the capital structure followed by bank is in optimal level?



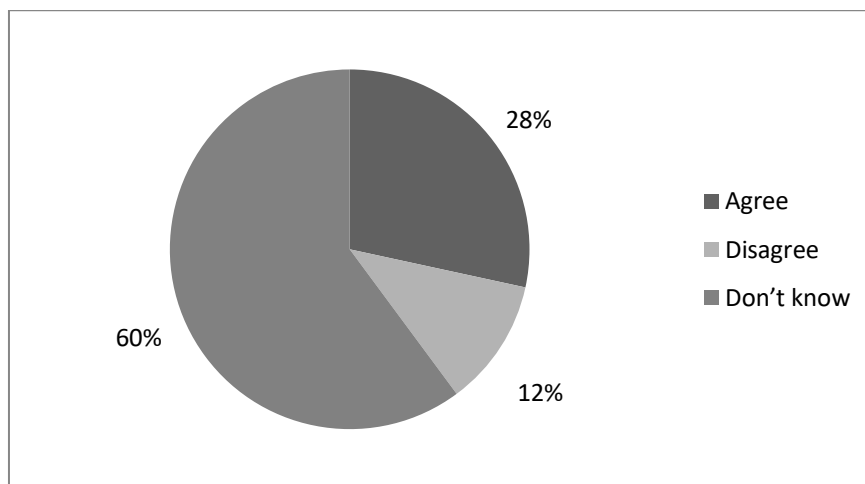
From the analysis of the pie-chart presented above it is found that 34.29% of the total respondents agree to the statement, 42.86% of them disagree to the statement. While 22.85% says they don't know about the statement.

Q.N. 6 Do you agree that the use of debt helps to maximize the market value of the share?



From the analysis of the pie-chart presented it is found that 57.14% of total respondent agree to the statement, 34.29% of them disagree to the statement while 8.57% says they don't know about the statement.

Q.N. 7 Could you opine that there is no difference between the information obtained by investors and management.



From the analysis of the pie-chart presented above, it is found that 28.57% of the total respondent believes that there is no information symmetry, 60% of them believe that there is definitely difference in information while 11.43% says they don't know about the statement.

Q.N. 8 If you have options to finance a new project, how do you rank the following alternatives?

In eighth question, the respondents records are presented in the panel A and its analysis is presented in panel B successively.

Following table contains the list of alternative source of financing. Alternatives provided to the respondent to rank were to use retained earning, issue of the debt, issue of equity stock and issue of preferred stock. Panel A exhibits respondents rank against alternative source of finance and panel B exhibits the composite mean and rank.

Table No. 28
List of alternative Source of Financing

Panel A	Rank				Panel B		
Alternative Sources of financing	1	2	3	4	Total Points	Mean	Rank
Use retained earnings	17	5	6	7	73	2.09	1
Issue of the debt	7	9	13	5	84	2.40	2
Issue of equity stock	4	11	10	8	88	2.51	3
Issue of preferred stock	1	9	12	9	91	2.60	4

From the above table, in the panel A, the responses of the sample have been presented as it is. As some of the respondents did not assign the rank for the given alternatives; they have been shown in the no response column. On the basis of the presentation of the responses; retained earning is ranked the first by Nepalese practitioners followed by debt. Equity stock seems to be popular among Nepalese practitioners compared to preference stock.

Four people did not rank for preferred stock, two for equity stock and one for issue of debt. The ranking of the respondents is in favour of the pecking order hypothesis of Myers and Masluf (1984) even if they prefer equity stock to preference stock. Their preference of equity to preference share is be the reflection of imperfect Nepalese capital market that has not experienced extensive use of preference stock.

Q.N. 9 What happens if the information obtained by the investor differs from that of management?

In ninth question, four different statement, were provided to the respondent and requested to assign in five point Likert scale as one for they strongly agree, two for agree, three for they do not know, four for disagree and five for strongly disagree.

Following table consists responses of respondents against the different alternatives as investors behave when they feel asymmetric information. Panel A contains response score and panel B contains composite mean and rank.

Table No. 29
Response of Respondents against the different Alternatives

Panel A	Scale					Panel B		
Alternative Statement	1	2	3	4	5	Total Points	Mean	Rank
Investors demand more return on their investment	18	7	2	1	4	62	1.77	1
Overall cost of capital will tend to increase	6	5	13	5	1	80	2.29	2
Company has to incur expenses as investors suspect on management	5	7	5	6	5	83	2.37	3
Investors may not feel any discrepancies	4	5	8	7	4	86	2.46	4

From the above table, among the four alternatives provided, the respondents ranked that investors would demand more return on their investment if it is considered that there is difference in information obtained by investors and management. They ranked that overall cost of capital would tend to increase due to information asymmetry.

As per the responses recorded, company has to incur expenses as investors suspect on management. This statement was included in opinion collection on the ground that management has to spend on disclosure of the transactions. The weighted average mean of the respondents is higher as it is the least preferred

statement by the respondents. Basically, this query was made to examine whether the responses of preceding question tally. Since investors do not feel any difference has the least priority, the responses of the previous question are consistent with these answers because twenty one people do agree that there is definitely difference in information obtained by management and investors.

4.4 Major Findings

This study deals with the capital structure and cost of capital of Joint Venture Banks. To fulfill the research objectives of the study various types of tools such as standard deviation, graphical representation, correlation of coefficient and simple regression has been used in the study. It employed the coefficient of correlation and simple regression equation to examine the relationship of cost of capital with each of the selected explanatory variables and leverage with other variables. The major findings of the study are described in the following.

- i. Debt to total assets ratio express the relationship between creditors fund and total assets. In terms of total debt to total assets shows that the selected banks are low leveraged on five year time horizon. It means the assets of selected banks have been financed more funds collected from shareholders. The average total debt to total assets ratio of NABIL, SCBNL, HBL and EBL are 6.13%, 4.33%, 4.16% and 5.90% respectively. Among them, the highest average ratio 6.13% of NABIL indicates only 6.13% assets are purchased by creditors fund. Shareholders have 93.87% contributions in the assets of the company.
- ii. Long-term debt to total debt ratio indicates that what percentage of total debt is converted by long-term debt of the firm. The average term debt to total debt ratio of NABIL, HBL and EBL are 6.65%, 33.46%, and 20.62% respectively. There is no long-term debt used by SCBNL during the study period. The analysis of all selected banks reveals that NABIL is in increasing and HBL and EBL are in fluctuating trend of long-term debt to total debt ratio. Among them, HBL has used maximum long-term debt in comparison to NABIL and EBL. The highest average long-term debt to total debt ratio of 33.46% indicates that about 66.54% of the total debt is contributed by current liabilities.

- iii. Debt equity ratio is used to show the relationship between funds and owners capital. The average D/E ratio of NABIL, SCBNL, HBL and EBL are 84.24%, 57.76%, 59.88% and 96.75% respectively. D/E ratio shows in the EBL the creditors have 96.75% claim on the assets which is very highest among the four banks. It also indicates that the company has higher amount to be paid as interest on debt. In case of SCBNL, the claim on assets is 57.76% which is lesser among four banks.
- iv. Interest coverage ratio shows how many times the interest chares are covered by EBIT out of which they will be paid. The conclusion drawn by the study is the average interest coverage of NABIL is 2.57 times, SCBNL is 3.70 times, HBL is 1.95 times and EBL is 1.68 times, which shows that all the sample banks are able to cover the interest but as the higher interest coverage ratio is better, SCBNL seems to have higher ratio than other three banks.
- v. The degree of financial leverage of HBL has the highest ratio of 2.17 times on an average, which reflects the bank has higher degree of financial risk. EBL constitutes lower degree of financial leverage of 1.06 times, which represents lower financial risk for the bank. Average DFL of NABIL is 1.73 times and SCBNL is 1.37 times.
- vi. The Return on total assets shows the efficiency of the assets mobilization. In comparison, SCBNL seems to have the highest average ROA of 2.53%, which indicates that the bank is utilizing its overall resources efficiently than other three banks. The average ROA of NABIL, HBL and EBL are 2.37%, 1.58% and 1.65% respectively.
- vii. The return on shareholders equity of NABIL, SCBNL, HBL ad EBL are in so fluctuating trend. The average ROSE of NABIL is 31.98% which indicates that the shareholders earned 31.98 paisa investing rupee one. Same as SCBNL, HBL and EBL have 33.78%, 22.61% and 26.39% respectively. By analyzing the average return, we can conclude that return earned by the shareholders equity of SCBNL is highest i.e. 33.78% and the return of HBL is least i.e. 22.61% among four banks. Least ROSE of HBL shows the weak performance of bank in the maximizing of shareholders equity.

- viii. Earning per share of an organization shows the strength of the share in the market. The analysis of all selected banks reveals that NABIL and HBL are in fluctuating trend and SCBNL is in decreasing and EBL is in increasing trend of EPS. The average EPS of NABIL, SCBNL, HBL and EBL are Rs. 111.99, Rs.132.55, Rs. 55.27 and Rs. 86.63 respectively. Among the four banks, SCBNL has the highest average EPS which shows that strong position of share in the market.
- ix. Dividend per share is the earning distributed to ordinary shareholders. The average DPS of NABIL, SCBNL, HBL and EBL are Rs. 96, Rs. 114, Rs. 40.08 and Rs.24 respectively. Among them, SCBNL has paid highest dividend and EBL has paid the least dividend.
- x. Trend of price earning ratio shows the fluctuating trend. Average P/E ratio of NABIL, SCBNL, HBL and EBL are 35.82, 41.07, 26.58 and 25.58 respectively. Among them, SCBNL has highest average P/E ratio and EBL has lowest average P/E ratio.
- xi. Overall capitalization rate measures the financial degree of leverage of the company. Under the net income approach, the average K_o of NABIL, SCBNL, HBL and EBL are 6.88%, 5.43%, 9.20% and 8.59% respectively. It can be concluded that the K_o is in fluctuating trend because of fluctuation in EBIT and value of the firm. Among the four banks, the average K_o of SCBNL is less than other banks.
- xii. Equity capitalization rate of all banks was fluctuating is active. The average K_e of NABIL, SCBNL, HBL and EBL are 4.30%, 3.93%, 5.19% and 4.75% respectively. Among the four banks, the average K_e of SCBNL is less than other banks.
- xiii. The calculated correlation coefficient between D/E ratio and ROSE of NABIL, SCBNL, HBL and EBL are 0.0912, -0.1266, 0.6726 and -0.5226 respectively. Here, the relationship of NABIL and HBL is positive and SCBNL and EBL have negative relationship. The calculated correlation coefficient is less than six times of P.E. of respected correlation in all the banks. This means that there is insignificant relationship between D/E ratio and ROSE in all the banks.
- xiv. The calculated correlation coefficient between D/E ratio and ROA of NABIL, SCBNL, HBL and EBL are -0.4369, -0.5374, 0.2090 and -0.8501

respectively. Here, the relationship of HBL is positive and other three banks have negative relationship. The calculated correlation coefficient is less than six times of P.E. of respected correlation. This means that there is insignificant relationship between D/E ratio and ROA in all the banks.

- xv. The correlation coefficient between Ko and D/E ratio of SCBNL, HBL and EBL are positive relationship. Whereas, NABIL has negative relationship. The correlation of NABIL, SCBNL, HBL and EBL are -0.8480, 0.1305, 0.5567 and 0.5270 respectively. The calculated correlation is less than six times of P.E. This means that there is insignificant relationship between Ko and D/E ratio in all the banks.
- xvi. The correlation coefficient between EBIT and interest payment of all banks are positive relationship. The correlation of NABIL, SCBNL, HBL and EBL are 0.9949, 0.9569, 0.8196 and 0.4436 respectively. The calculated correlation of NABIL, SCBNL and HBL are greater than six times of P.E., so the relationship is significant and correlation of EBL is less than 6 times of P.E., so the relationship is insignificant.
- xvii. Regression analysis based on cost of equity and leverage. Regression coefficient of SCBNL, HBL and EBL are 0.0194, 0.849 and 0.0036 respectively which shows positively related whereas NABIL of -0.0435 is negatively related. T-statistics for the variables is insignificant in all the banks because t-calculated value of all the banks are less than t-tabulated value. So, regression result is closely with traditional view.
- xviii. Regression analysis based on ROSE and leverage regression coefficient of NABIL and HBL are 0.0055 and 0.2762 respectively which shows positively related whereas SCBNL and EBL of -0.0164 and -0.0318 are negatively related. T-statistics for the variables is insignificant in all the banks because t-calculated value is less than t-tabulated value at 5% level of significance with (5-2) degree of freedom.
- xix. Regression analysis based on EPS and leverage. Regression coefficient of NABIL, SCBNL and HBL are 0.1900, 1.2578 and 0.6817 which shows the positively related. Whereas EBL of -0.2464 is negatively related of EPS on leverage. T-statistics for the variable is insignificant in all the banks because t-calculated value is less than t-tabulated value at 5% level of significance with (5-2) degree of freedom.

- xx. Regression analysis based on P/E ratio and leverage. Regression coefficient of NABIL and EBL are 0.3864 and 0.0414 respectively which shows the positively related whereas SCBNL and HBL of -0.2693 and -0.0208 are negatively related of P/E ratio on leverage. T-statistics for the variable is significant in case of NABIL because its t-calculated value is greater than t-tabulated value whereas in case of SCBNL, HBL and EBL are insignificant because its t-tabulated value is less than t-tabulate value at 5% level of significance with (5-2) degree of freedom.
- xxi. Most of the respondents agree that the use of debt affects the value of firm. 2 respondents disagree and rest three didn't make any response.
- xxii. 10 respondents opined that the debt level is not necessary to follow industry level. However 22 respondents opined to maintain the debt level as per industry norms and remaining 3 respondents ticked don't know.
- xxiii. Most of the respondents agree that government policy affect the combination of equity and debt capital. 6 respondents disagree and rest 5 don't know about the question.
- xxiv. About 30 respondents agree that risk increase with increase in leverage ratio. 3 respondents say they don't have idea and remaining 2 is disagreeing with this statement.
- xxv. Most of the respondents say that capital structure of bank is not optimal. Whereas 12 respondents agree and rest 8 respondent don't know about the statement.
- xxvi. Most respondent agree that use of debt help to maximize the market value of share. On this light, majority of the respondents align towards the tax advantage of the use of debt.
- xxvii. About 21 respondents argue that the information obtained by management and investors is difference. 10 respondents says that there is no difference and rest 4 says that they don't know about the statement.
- xxviii. On the uses of presentation of response, retained earning is ranked first by the Nepalese practitioners and academician followed by debt. Equity stock seems to be popular among Nepalese practioners compared to preferred stock.

xxix. If there is difference held investors demand more return on their investment which is ranked first among different affect due to difference in information obtain by investors and management.

CHAPTER - V

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter is the important for the research because this chapter is the extract of all the previously discussed chapters. This chapter is divided into three parts: Summary, Conclusion and Recommendation. In summary part, revision or summary of all four chapters is made. In conclusion part, the result from the research is summed up and in recommendation part, suggestion and recommendation is made based on the result and experience of thesis. Recommendation is made for improving the present situation to the concerned parties as well as for further research.

5.1 Summary

The history of industrialization in Nepal started only after the Second World War. At that time a few number of industries were established particularly in Eastern Nepal. Jute and Cotton industries were given priority at the initial period of industrialization. Establishment of manufacturing companies is the main way of industrial development in the country. Whereas banking sector directly and indirectly involved in industrial development. Banking sector is the back bone for industrial development. Banking sector plays an important role in the economic development of the country. Commercial banks are one of the vital aspects of this sector, which deals in the process of channeling the available resources in the needed sectors. It is the intermediary between the deficit and surpluses of financial resources.

Every business firm need capital to operate the business. Capital is the blood or root of the business. Capital is a scare sources and much more essential to maintain smooth operation of any firm. As in order form, capital structure is crucial part for banking industry too. Sound capital structure is required to operate business smoothly and achieve the business goal. Capital structure is concerned with analyzing the capital composition of the company (Weston & Brigham: 1978, p.555). The capital structure concept has an important place in the theory of financial management. A proper balance between debt and equity is

necessary to ensure a tradeoff between risk and return to the shareholders. A capital structure with a reasonable proportion of debt and equity capital is called optimum capital structure. The main function of manager is to determine the proportion of equity and debt capital. If a company can increase its total valuation by varying its capital structure, an optimal financing mix would be increase. The capital structure and cost of capital both are important in maximizing the wealth of shareholders. So, financial manager should try his/her best to minimize the overall cost of capital by optimizing the capital structure.

This study "impact of capital structure on cost of capital of joint venture banks in Nepal" is primarily prepared for the partial fulfillment of the requirement of master of business studies (M.B.S). This study is mainly based on secondary and primary data provided by concerned banks and respondents. Among 32 commercial banks only four commercial banks are selected as sample of study which represents almost 13% of population respectively. The study mainly aims to analyze the relationship among capital structure, cost of capital and other variables in the context of Nepalese commercial banks. Among many commercial banks, Nabil bank Limited, Standard Chartered Bank Nepal Ltd. Himalayan Bank Limited and Everest Bank Limited are taken as sample for the study because all four banks are joint venture banks and providing same type of service to he customers. Due to the time and resources constraints, all types of analysis are not conducted. The study covers five fiscal years starting from 2005/06 to 2009/10. To make the study more reliable, the whole study has been divided into five chapter. The summaries of each chapter are presented below:

Chapter First: First chapter starts with historical background of the study. In this chapter, origin and growth of modern banks, development of joint venture banks, introduction of the banks selected for the study, statements of the problems, objective of the study, significance of the study and limitation of the study presented briefly.

Chapter Second: In this chapter various books, research studies and articles concerned in the capital structure and cost of capital have been reviewed and presented as the review of literature to make the concept of capital structure and cost of capital more clear. Capital structure theories 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, journals, articles as well as related Nepalese studies have been presented as well.

Chapter Third: 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 data used in this study are secondary in nature that is annual reports provide by concerned banks. Five years data are taken as sampled years and are analyzed by using financial and statistical tools such as ratio analysis, capital structure, leverage analysis, profitability analysis, correlation analysis, regression analysis, probable error etc. methods, which the study is going to use, are exhibited in this chapter.

Chapter Four: The data mentioned in the third chapter are presented and analyzed in this chapter using methods mentioned in the chapter third above such as ratios, capital structure, leverage analysis, correlation, regression and probable errors. Details calculations are presented in this chapter are shown as annex which is presented after fifth chapter.

Chapter Five: In this chapter main findings are concluded as the conclusion of the study. Based on the analysis and conclusion of the study some recommendations are made in this chapter which are helpful to take corrective action in capital structure decision for the second companies for their betterment.

5.2 Conclusion

This study tries to analyzed the capital structure of the sample companies based on the data provided in the financial statements as well as other concerned information. From the study, it is tried to establish the relationship between leverage and profitability. Some ratios, which are related with capital structure, are computed overall capitalization rate and equity capitalization rate, correlation between some relevant variables are also included. The analysis of data is presented in chapter four. Based on these calculation and analysis, the following conclusion is drawn from the study.

- i. All the four banks are using equity as well as debt capital in their capital structure. The ratio of debt is slightly fluctuating trend; the creditors margin of safety is very low, which shows high risk, the selected banks

are low leveraged in terms of debt to total assets ratio on five year time horizon which shows all four banks have lower level of debt financing of assets. On average, NABIL has used higher level of debt to total asset ratio than other banks which is 6.13%.

- ii. By analyzing the long-term debt to total debt ratio, it is known that SCBNL is not using long-term debt during the study period which really minimizes the interest burden. Among the four banks, HBL has used maximum long term debt in comparison to NABIL and EBL. The highest average long-term debt to total debt is 33.46% which indicates that about 66.54% of the total debt is contributed by current liabilities.
- iii. From the study of Debt to equity ratio all the four banks are found to be highly leveraged. All the banks financial mix account a higher proportion of debt which is above 50%. It also indicates that the banks has higher amount to be paid as interest on debt. The highest average D/E ratio of EBL is 96.75% which shows higher claim of outsiders that, there of the equity holders.
- iv. The average interest coverage ratio of SCBNL is 3.70 times, which is highest ratio in four banks. It shows that the interest payment of SCBNL is covered by EBIT and it has higher debt servicing capacity. The average interest coverage ratio for NABIL, HBL and EBL are 2.57 times, 1.95 times and 1.68 times respectively. The EBL has low interest coverage ratio than others.
- v. The leverage position of the company can be analyzed with the help of different leverage analysis. Generally, there are two types of leverage but both leverage are concerned each other and only financial leverage is enough to analyze the financial activities of the company. NABIL, SCBNL and HBL have positive financial leverage. So, the positive change in their EPS in the reason of change in their EBIT. Whereas EBL has negative financial leverage. So, the negative change in their EPS. The DFL of HBL has the highest ratio of 2.17 times on average which shows high financial risk to the creditor and DFL of EBL has the lowest ratio of 1.06 times which shows low financial risk. It can be say that the financial activities have been efficiently handled by HBL than other because it has higher DFL than others.

- vi. The ROA of SCBNL is higher than other banks. It means that SCBNL is utilizing its assets in profitable investment. The ROA of HBL is lower than other banks. It means that HBL is not properly using its assets than other banks. The average ROA of SCBNL and HBL are 2.53% and 1.58% respectively.
- vii. ROSE of all banks is in good conditions, which is above 20%. The highest average ROSE of SCBNL is 33.78, which indicates good performance of bank whereas the lowest average ROSE of HBL is 22.61% which indicates weak performance of bank is maximizing shareholders equity than other banks.
- viii. Earning per share of SCBNL is higher than other banks and EPS of HBL is lower than other banks. Here SCBNL progress strength on earning per share, which help to maximize the shareholders wealth. The net profit of SCBNL is in good condition. So, investors always wants to invest in the share of SCBNL. Average EPS of SCBNL is Rs. 132.55 and HBL is Rs. 55.27. In the study period, EPS Of the banks have a fluctuating trend.
- ix. Dividend per share of NABIL, HBL and EBL are lower than SCBNL. SCBNL paid highest average DPS of Rs. 114 and EBL paid lowest average DPS of Rs. 24.
- x. Price earning ratio of all banks shows fluctuating trend in the study period. The average P/E ratio of SCBNL is 41.07 which is highest than other banks because its market value per share is in increasing trend. Whereas EBL has lowest average P/E ratio of 25.58 because it's market value per share is in decreasing trend.
- xi. According to NI approach, the market value of firm is not affected by a change in capital structure. In this approach, net operating income is capitalized at an overall capitalization rate to obtain the total market value of firm. In this approach, overall capitalization (K_o), as well as the cost of debt (K_d) stay the same, regardless of the degree of leverage. So, the company can use high amount of debt capital with the same rate of interest. As per the approach, the required rate of return on equity increase. With the increasing amount of debt capital with same rate of interest with this analyze, it can be say that HBL had to pay high K_o for the fiscal year 2005/06, altogether the debt amount is not so much high.

Ko is almost increasing trend in SCBNL and average Ko is 5.43% which is less than highest Ko of HBL which is 9.20%. Debt capital is highly issued by SCBNL but Ko for it is not increasing during the study period. Therefore, the overall analysis show that Ko doesn't depend upon the leverage position of the company.

- xii. Another aspect of NOI approach is that the required rate of return increases with the decreasing value of debt. From the analysis of equity capitalization rate it is clearly known that Ke, is in high percentage for those companies, which are giving priority to equity than debt. So, Ke of HBL and EBL seems to be high and Ke of NABIL and SCBNL is decreased. From the study it is seemed that Ke is directly affected by the leverage position of the company (i.e. increasing leverage position is the reason for decreasing rate of Ke). The conclusion of this study is that the market value of the firm is not affected by the leverage position of the firm and than only Ke depends upon the leverage position of the firm.
- xiii. Correlation coefficient between D/E ratio and ROSE of NABIL and HBL are positive relationship which indicates that increase in debt capital will increase in ROSE and vice-versa whereas SCBNL and EBL are negative relationship which indicates that increase in debt capital will decrease in ROSE and vice-versa. The calculated correlation coefficient is less than six times of P.E. so, relation is significant in all the banks.
- xiv. Correlation coefficient between D/E ratio and ROA of HBL is positive and other three banks have negative relationship. Positive Relation of HBL shows increase in Debt will increase in ROA and Negative relation shows increase in debt will decrease in ROA. The calculated correlation coefficient is less than six times of P.E. in all the banks. So, relation is insignificant.
- xv. Correlation coefficient between Ko and D/E ratio of SCBNL, HBL and EBL are positive and NABIL is negative relationship. Positive relation shows increase in debt capital will also increase in Ko and negative relationship shows increase in debt capital will decrease in Ko. The calculated correlation coefficient is less than six times of P.E. in all the banks, so relation between Ko and D/E ratio is insignificant.

- xvi. Correlation coefficient between EBIT and interest payment of all the banks are positive relationship which indicates that increases in EBIT will also increase in interest payment. The calculated correlation of NABIL, SCBNL and HBL are greater than six times of P.E. So, relation is significant and correlation of EBL is less than six times of P.E., so the relationship is insignificant.
- xvii. Regression coefficient between cost of equity and leverage of SCBNL, HBL and EBL are positively related whereas NABIL is negatively related. Positive relation indicates that increases in funded debt to shareholders fund leads to increase in Ke and Negative relation indicates that decrease in funded debt to shareholder's fund leads to increase in Ke. T-calculated value of all banks are less than t-tabulated value. So, t-statistics is insignificant.
- xviii. Regression coefficient between ROSE and leverage of NABIL and HBL are positively related whereas SCBNL and EBL are negatively related. Positive relation indicates that increase in funded debt to shareholders fund leads to increase in ROSE and negative relation indicates that decrease in funded debt to shareholder's fund leads to increase in ROSE. t-calculated value of all banks are less than t-tabulated value. So, t-statistics is insignificant.
- xix. Regression coefficient between EPS and leverage of NABIL, SCBNL and HBL are positively related whereas EBL is negatively related. Positive relation indicates that increase in funded debt to shareholders fund leads to increase in EPS and negative relation indicates that decrease in funded debt to shareholders fund leads to increase in EPS. t-calculated value of all banks are less than t-tabulated value. So, t-statistics is insignificant.
- xx. Regression coefficient between P/E ratio and leverage of NABIL and EBL are positively related whereas SCBNL and HBL are negatively related. Positive relation indicates that increase in funded debt to shareholders fund leads to increase in P/E ratio and negative relation indicates that decrease in funded debt to shareholders fund leads to increase in P/E ratio. T-statistics of NABIL is significant because its t-calculated value is greater than t-tabulated value whereas in case of SCBNL, HBL and EBL are insignificant because its t-tabulated value is

less than t-tabulated value at 5% level of significance with (5-2) degree of freedom.

- xxi. The respondents of the practitioners and academicians are not support of particular theory of capital structure as it is evidence that they ranked retained earnings as the first alternative sources of financing for the new project.

5.3 Recommendations

In this section of the study, few points that can be helpful to stakeholders as well as to the company are recommended based upon above calculation and drawn conclusions. These recommendations are guidelines, which would be helpful in taking prompt and appropriate decision about capital structure and cost of capital. These recommendations are given below:

- i. First of all, Nepalese commercial banks have not properly using the concept of capital structure and cost of capital in practice. Theories developed by the scholars have not able to attract the management. Thus, overall structural scenarios of the banks are in confusing state. Therefore, we may recommend that the management of the commercial banks should be clear about the generation of fund needed for investment. It means that the knowledge of capital structure and cost of capital plays vital role in uplifting the financial position of the banks. The analysis of cost of capital is very much important in making investment at different projects because of competition. So, the management of the banks always be well informed about sources of capital, their reliability and their cost.
- ii. The capital structure of selected banks is highly leveraged. SCBNL has lower leverage ratio in compared to other banks. It is good making handsome return by employing outsiders fund but at same time it also brings risk to the bank. The proportion of debt and equity capital should be decide keeping in mind that 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.

- iii. The ROA, ROSE and EPS of HBL and EBL are very low in comparison to NABIL and SCBNL. So, they need to seek more profitable area 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 ROSE and profitability of the banks.
- iv. Dividend payout ratio should be determined considering the shareholders expectation and the growth requirements of the banks. A higher payment attracts both the existing and potential investors leading to increase in market price of the share, which consequently leads to the strength of financial capacity. Hence, HBL and EBL banks are recommended to maintain consistent dividend payout ratio.
- v. The earnings of all the selected banks are fluctuating yearly. This may be due to the providing economic, political condition of the country. But the banks need to enhance their profitability by increasing efficiently in their productivity and decreasing the cost.
- vi. It is found that HBL has high DFL but NABIL, SCBNL, and EBL has low DFL. It is the impact of interest cost, which ultimately affects the profitability of the banks. So to earn higher level of profit, all the banks should maintain the optimal level of interest cost in business. The banks which are suffering from losses are suggested to decrease interest cost and increase operating profit. So, that ROA and ROSE will be increased.
- vii. Commercial banks are basically concentrated on mobilization of their deposit funds in productive areas. So, they are proposed to come forward to match government obligation by financing the priority sector development programs.
- viii. 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 enterprises tour and need of the changing time and situation for the managerial level employees.
- ix. The central bank as regarding, supervising and directing bank mandates all the commercial banks to increase their capital funds to Rs. 2 billion

and also to maintain sufficient capital adequacy ratio as per NRB directives. So the bank needs to adopt the guidance of the central bank to maintain appropriate capital structure to safeguard the depositor's money.

- x. Banks needs to employ better marketing strategy in order to keep handsome benefit and so sustain for long periods.
- xi. The banks 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 moral and motivation. The bank has to enhance effectiveness, efficient and proper coordination of its departmental tasks to continuously reviewing its structural design in accordance with the need of the changing time and situation.

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Annex 1: Calculation of Debt to Total Asset Ratio

Fiscal Year	NABIL			SCBNL		
	Total Debt	Total Asset	Ratio(%)	Total Debt	Total Asset	Ratio(%)
2005/06	1107577221	22329971078	4.96	952181210	25767352068	3.70
2006/07	1854057966	27253393008	6.80	1833315335	28596689451	6.41
2007/08	2780512693	37132759149	7.43	1099241536	33335788326	3.30
2008/09	3388901027	43867397504	7.73	1663277151	40587468009	4.10
2009/10	1904782190	52150237343	3.65	1660889028	40213319926	4.13
Fiscal Year	HBL			EBL		
	Total Debt	Total Asset	Ratio(%)	Total Debt	Total Asset	Ratio(%)
2005/06	1203362416	29460389672	4.08	1194031398	15959284687	7.48
2006/07	1324223700	33519141111	3.95	2044805493	21432574300	9.54
2007/08	1819750679	36175531637	5.03	1251806769	27149342884	4.61
2008/09	1519096353	39320322069	3.86	1390277353	36916848654	3.77
2009/10	1666717209	42717124613	3.90	1691312848	41382760711	4.09

Annex 2: Calculation of Long-term Debt to Total Debt Ratio

Fiscal Year	NABIL			SCBNL		
	Long-term Debt	Total Debt	Ratio (%)	Long-term Debt	Total Debt	Ratio (%)
2005/06	-	1107577221	-	-	952181210	-
2006/07	-	1854057966	-	-	183315335	-
2007/08	240000000	2780512693	8.63	-	1099241536	-
2008/09	300000000	3388901027	8.85	-	1663277151	-
2009/10	300000000	1904782190	15.75	-	1660889028	-
Fiscal Year	HBL			EBL		
	Long-term Debt	Total Debt	Ratio (%)	Long-term Debt	Total Debt	Ratio (%)
2005/06	360000000	1203362416	29.92	300000000	1494031398	25.12
2006/07	360000000	1324223700	27.19	300000000	2044805493	14.67
2007/08	860000000	1819750679	47.26	300000000	1251806769	23.97
2008/09	500000000	1519096353	32.91	300000000	1390277353	21.58
2009/10	500000000	1666717209	30.00	300000000	1691312848	17.74

Annex 3: Calculation of Debt to Equity Ratio

Fiscal Year	NABIL			SCBNL		
	Total Debt	Total Equity	Ratio(%)	Total Debt	Total Equity	Ratio(%)
2005/06	1107577221	1874994417	59.07	952181210	1754138777	54.28
2006/07	1854057966	2057049715	90.13	1833315335	2116353361	86.63
2007/08	2780512693	2437198989	114.09	1099241536	2492547996	44.10
2008/09	3388901027	3130240637	108.26	1663277151	3052469731	54.49
2009/10	1904782190	3834754525	49.67	1660889028	3369709444	49.29
Fiscal Year	HBL			EBL		
	Total Debt	Total Equity	Ratio(%)	Total Debt	Total Equity	Ratio(%)
2005/06	1203362416	1766175616	68.13	1194031398	1194031398	124.02
2006/07	1324223700	2146499655	61.69	2044805493	2044805493	170.19
2007/08	1819750679	2512991602	72.41	1251806769	1251806769	65.16
2008/09	1519096353	3119880537	48.69	1390277353	2203625055	63.09
2009/10	1666717209	3439205130	48.46	1691312848	2759137855	61.30

Annex 4: Calculation of Interest Coverage Ratio

Fiscal Year	NABIL			SCBNL		
	EBIT	Interest	Ratio(%)	EBIT	Interest	Ratio(%)
2005/06	1255165097	357161304	3.51	1242572950	303198419	4.10
2006/07	1550751070	555710109	2.79	1429150366	413055152	3.46
2007/08	1847426216	758436212	2.44	1665102660	471729700	3.53
2008/09	2561947762	1153280052	2.28	2010992312	543786600	3.70
2009/10	3585290680	1160107902	1.83	2112107888	575740660	3.67
Fiscal Year	HBL			EBL		
	EBIT	Interest	Ratio(%)	EBIT	Interest	Ratio(%)
2005/06	1321240757	648841818	2.04	745441598	401397351	1.86
2006/07	1484814306	767411247	1.93	971874698	517166241	1.88
2007/08	1772583689	823744838	2.15	1291296064	632609264	2.04
2008/09	2001384008	934778015	2.14	1904193064	1012874353	1.88

2009/10	2309257971	1553530687	1.49	1187991041	1572790306	0.76
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Annex 5: Calculation of Degree of Financing Leverage

Fiscal Year	NABIL			SCBNL		
	EBIT	Interest	Ratio(%)	EBIT	EBT	Ratio(%)
2005/06	1255165097	898003793	1.40	1242572950	939374531	1.32
2006/07	1550751070	995045961	1.56	1429150366	1016095214	1.41
2007/08	1847426216	108990004	1.70	1665102660	1193372960	1.40
2008/09	2561947762	1478667710	1.78	2010992312	1467205712	1.37
2009/10	3585290680	1625182778	2.21	2112107888	1536367228	1.37
Fiscal Year	HBL			EBL		
	EBIT	Interest	Ratio(%)	EBIT	Interest	Ratio(%)
2005/06	1321240757	672398939	1.96	745441598	344044247	2.17
2006/07	1484814306	717403059	2.07	971874698	454708457	2.14
2007/08	1772583689	948838851	1.87	1291296064	658886800	1.96
2008/09	2001384008	1066605993	1.88	1904193064	891318711	2.14
2009/10	2309257971	755727284	3.06	1187991041	-384799265	-3.09

Annex 6: Calculation of Return on Total Assets

Fiscal Year	NABIL			SCBNL		
	Net profit after tax	Total Assets	Ratio(%)	Net Profit after Tax	Total Assets	Ratio(%)
2005/06	635266650	22329971078	2.84	658755881	25767352068	2.56
2006/07	673959698	27253393008	2.47	691668064	28596689451	2.42
2007/08	746468394	37132759149	2.01	818921008	33335788326	2.46
2008/09	1031053098	43867397504	2.35	1025114536	40587468009	2.53
2009/10	1139099399	52150237343	2.18	1085871694	40213319926	2.70
Fiscal Year	HBL			EBL		
	Net profit after tax	Total Assets	Ratio(%)	Net Profit after Tax	Total Assets	Ratio(%)
2005/06	457457696	29460389672	1.55	237290936	15959284687	1.49
2006/07	491822905	33519141111	1.47	296409281	21432574300	1.38
2007/08	635868519	36175531637	1.76	451218613	27149342884	1.66
2008/09	752834735	39320322069	1.91	638732757	36916848654	1.73

2009/10	508798193	42717124613	1.19	831765632	41382760711	2.01
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Annex 7: Calculation of Return on Shareholders' Equity

Fiscal Year	NABIL			SCBNL		
	Net profit after tax	Total Equity	Ratio(%)	Net Profit after Tax	Total Equity	Ratio(%)
2005/06	635266650	1874994417	33.88	658755881	1754138777	37.55
2006/07	673959698	2057049715	32.76	691668064	2116353361	32.68
2007/08	746468394	2437198989	30.63	818921008	2492547996	32.85
2008/09	1031053098	3130240637	32.94	1025114536	3052469731	33.58
2009/10	1139099399	3834754525	29.70	1085871694	3369709444	32.22
Fiscal Year	HBL			EBL		
	Net profit after tax	Total Equity	Ratio(%)	Net Profit after Tax	Total Equity	Ratio(%)
2005/06	457457696	1766175616	25.90	237290936	962808301	24.65
2006/07	491822905	2146499655	22.91	296409281	1201515266	24.67
2007/08	635868519	2512991602	25.30	451218613	1921237580	23.49
2008/09	752834735	3119880537	24.13	638732757	2203625055	28.99
2009/10	508798193	3439205130	14.79	831765632	2759137855	30.15

Annex 8: Calculation of Earning Per Share

Fiscal Year	NABIL (in Rs.)	SCBNL (in Rs.)	HBL (in Rs.)	EBL (in Rs.)
2005/06	129.21	175.84	59.24	62.78
2006/07	137.08	167.37	60.66	78.42
2007/08	108.31	131.92	62.74	91.82
2008/09	106.76	109.99	61.90	99.99
2009/10	78.61	77.65	31.80	100.16

Annex 9: Calculation of Dividend Per Share

Fiscal Year	NABIL (in Rs.)	SCBNL (in Rs.)	HBL (in Rs.)	EBL (in Rs.)
2005/06	85	140	35	-
2006/07	140	130	40	30
2007/08	100	130	45	30
2008/09	85	130	43.56	30
2009/10	70	70	36.84	30

Annex 10: Calculation of Price Earning Ratio

Fiscal Year	NABIL (Ratio)	SCBNL (Ratio)	HBL (Ratio)	EBL (Ratio)
2005/06	17.34	21.47	18.57	21.97
2006/07	36.84	35.25	28.69	30.99
2007/08	48.70	51.77	31.56	34.11
2008/09	45.89	54.64	28.43	24.55
2009/10	30.33	42.23	25.66	16.27

Annex 11: Calculation of Overall Capitalization Rate

Fiscal Year	NABIL (%)	SCBNL (%)	HBL (%)	EBL (%)
2005/06	10.36	8.23	13.62	11.64
2006/07	5.81	5.45	9.62	8.65
2007/08	4.72	3.83	8.10	7.76
2008/09	5.67	3.95	6.72	6.68
2009/10	7.84	5.67	7.94	8.23

Annex 12: Calculation of Equity Capitalization Rate

Fiscal Year	NABIL (%)	SCBNL (%)	HBL (%)	EBL (%)
2005/06	8.15	6.64	4.92	6.60
2006/07	4.01	4.17	5.09	4.95
2007/08	3.00	2.81	4.73	4.28
2008/09	2.85	2.67	3.98	3.81
2009/10	3.51	3.37	4.23	4.11

Annex 13: Calculation of Mean (\bar{X}) and Standard Deviation (σ) for Debt to total Asset Ratio (X)

Fiscal Year	NABIL		SCBNL		HBL		EBL	
	X	$(X - \bar{X})^2$	X	$(X - \bar{X})^2$	X	$(X - \bar{X})^2$	X	$(X - \bar{X})^2$
2005/06	4.96	1.37	3.70	0.40	4.08	0.01	7.48	2.50
2006/07	6.80	0.45	6.71	4.33	3.95	0.04	9.54	13.25
2007/08	7.49	1.85	3.30	1.06	5.03	0.76	4.61	1.66
2008/09	7.73	2.56	4.10	0.05	3.86	0.09	3.77	4.54
2009/10	3.65	6.15	4.13	0.04	3.90	0.07	4.09	3.28
N=5 Total	$\sum X = 30.63$	$\sum (X - \bar{X})^2 = 12.38$	$\sum X = 21.64$	$\sum (X - \bar{X})^2 = 5.88$	$\sum X = 20.82$	$\sum (X - \bar{X})^2 = 0.97$	$\sum X = 29.49$	$\sum (X - \bar{X})^2 = 25.23$
Mean (\bar{X})	6.13		4.33		4.16		5.90	
S.D. (σ)	1.57		1.08		0.44		2.25	

Where, for mean

$$\text{NABIL } (\bar{X}) = \frac{\sum X}{N} = \frac{30.63}{5} = 6.13$$

$$\text{SCBNL } (\bar{X}) = \frac{\sum X}{N} = \frac{21.64}{5} = 4.33$$

$$\text{HBL } (\bar{X}) = \frac{\sum X}{N} = \frac{20.82}{5} = 4.16$$

$$\text{EBL } (\bar{X}) = \frac{\sum X}{N} = \frac{29.49}{5} = 5.90$$

For S.D.

$$(\sigma) \text{ NABIL} = \sqrt{\frac{\sum (X - \bar{X})^2}{N}} = \sqrt{\frac{12.38}{5}} = 1.57$$

$$(\sigma) \text{ SCBNL} = \sqrt{\frac{\sum (X - \bar{X})^2}{N}} = \sqrt{\frac{5.88}{5}} = 1.08$$

$$(\sigma) \text{ HBL} = \sqrt{\frac{\sum (X - \bar{X})^2}{N}} = \sqrt{\frac{0.97}{5}} = 0.44$$

$$(\sigma) \text{ EBL} = \sqrt{\frac{\sum (X - \bar{X})^2}{N}} = \sqrt{\frac{25.23}{5}} = 2.25$$

Same Calculation for Others

Annex 14: Calculation of mean (\bar{X}) and S.D (σ) for Long-term Debt to Total Debt Ratio (X)

Fiscal Year	NABIL		SCBNL		HBL		EBL	
	X	$(X - \bar{X})^2$	X	$(X - \bar{X})^2$	X	$(X - \bar{X})^2$	X	$(X - \bar{X})^2$
2005/06	0	44.22	-	-	29.92	12.53	25.12	20.25
2006/07	0	44.22	-	-	27.19	39.31	14.67	35.40
2007/08	8.63	3.92	-	-	47.26	190.44	23.97	11.22
2008/09	8.85	4.84	-	-	32.91	0.30	21.58	0.92
2009/10	15.75	82.84	-	-	30.00	11.97	17.74	8.29
N=5 Total	33.23	180.01	-	-	167.28	254.55	103.08	76.08
Mean (\bar{X})	6.65		-		33.46		20.62	
S.D.(σ)	6		-		7.14		3.90	

Annex 15: Calculation of mean (\bar{X}) and S.D (σ) for Debt to Equity Ratio (X)

Fiscal Year	NABIL		SCBNL		HBL		EBL	
	X	$(X - \bar{X})^2$	X	$(X - \bar{X})^2$	X	$(X - \bar{X})^2$	X	$(X - \bar{X})^2$
2005/06	59.07	633.53	54.28	12.11	68.13	68.06	124.02	743.65
2006/07	90.13	34.69	86.63	833.48	61.69	3.28	170.19	5393.43
2007/08	114.09	891.02	44.10	186.60	72.41	157.00	65.16	997.93
2008/09	108.26	576.96	54.49	10.69	48.69	125.22	63.09	1132.99
2009/10	49.67	1195.08	49.29	71.74	48.46	130.42	31.30	1256.70
N=5 Total	421.22	3331.28	288.79	1114.62	299.38	483.98	483.76	9524.70
Mean (\bar{X})	84.24		57.76		59.88		96.75	
S.D.(σ)	25.81		14.93		9.84		43.65	

Annex 16: Calculation of mean (\bar{X}) and S.D (σ) for Interest Coverage Ratio (X)

Fiscal Year	NABIL		SCBNL		HBL		EBL	
	X	$(X - \bar{X})^2$	X	$(X - \bar{X})^2$	X	$(X - \bar{X})^2$	X	$(X - \bar{X})^2$

2005/06	3.51	0.88	4.10	0.16	2.04	0.01	1.86	0.03
2006/07	2.79	0.05	3.46	0.06	1.93	0.01	1.88	0.04
2007/08	2.44	0.02	3.53	0.03	2.15	0.04	2.04	0.13
2008/09	2.28	0.08	3.70	0	2.14	0.04	1.88	0.04
2009/10	1.83	0.55	3.67	0.01	1.49	0.21	0.76	0.85
N=5 Total	12.85	1.58	18.46	0.26	9.75	0.31	8.42	1.09
Mean (\bar{X})	2.57		3.70		1.95		1.68	
S.D.(σ)	0.56		0.23		0.25		0.47	

Annex 17: Calculation of mean (\bar{X}) and S.D (σ) for Degree of Financial Language (X)

Fiscal Year	NABIL		SCBNL		HBL		EBL	
	X	$(X - \bar{X})^2$	X	$(X - \bar{X})^2$	X	$(X - \bar{X})^2$	X	$(X - \bar{X})^2$
2005/06	1.40	0.11	1.32	0.01	1.96	0.04	2.17	1.23
2006/07	1.56	0.03	1.41	0.01	2.07	0.01	2.14	1.17
2007/08	1.70	0.01	1.40	0.01	1.87	0.09	1.96	0.81
2008/09	1.78	0.01	1.37	0	1.88	0.089	2.14	1.17
2009/10	2.21	0.23	1.37	0	3.06	0.79	-3.09	17.22
N=5/ Total	8.65	0.39	6.87	0.03	10.84	1.01	5.32	21.60
Mean (\bar{X})	1.73		1.37		2.17		1.06	
S.D.(σ)	0.28		0.08		0.45		2.08	

Annex 18: Calculation of mean (\bar{X}) and S.D (σ) for Return on Total Assets (x)

Fiscal Year	NABIL		SCBNL		HBL		EBL	
	X	$(X - \bar{X})^2$	X	$(X - \bar{X})^2$	X	$(X - \bar{X})^2$	X	$(X - \bar{X})^2$
2005/06	2.84	0.22	2.56	0.01	1.55	0.01	1.49	0.03
2006/07	2.47	0.01	2.42	0.01	1.47	0.01	1.38	0.07
2007/08	2.01	0.13	2.46	0.01	1.76	0.03	1.66	0.01
2008/09	2.35	0.01	2.53	0	1.91	0.11	1.73	0.01
2009/10	2.18	0.04	2.70	0.03	1.19	0.15	2.01	0.13
N=5 Total	11.85	0.41	2.53	0.06	7.88	0.31	8.27	0.25
Mean (\bar{X})	2.37		2.53		1.58		1.65	
S.D.(σ)	0.29		0.11		0.25		0.22	

Annex 19: Calculation of mean (\bar{X}) and S.D (σ) for Return on Shareholders' Equity (x)

Fiscal Year	NABIL		SCBNL		HBL		EBL	
	X	$(X - \bar{X})^2$	X	$(X - \bar{X})^2$	X	$(X - \bar{X})^2$	X	$(X - \bar{X})^2$
2005/06	33.88	3.61	37.55	14.21	25.90	10.82	24.65	3.03
2006/07	32.76	0.61	32.68	1.21	22.91	0.09	24.67	2.96
2007/08	30.63	1.82	32.85	0.86	25.30	7.24	23.49	8.41
2008/09	32.94	0.92	33.58	0.04	24.13	2.31	28.99	6.76
2009/10	29.70	5.20	32.22	2.43	14.79	23.23	30.15	14.14
N=5 Total	159.91	12.16	168.88	18.75	113.03	43.69	131.95	35.30
Mean (\bar{X})	31.98		33.78		22.61		26.39	
S.D.(σ)	1.56		1.94		2.96		2.66	

Annex 20: Calculation of mean (\bar{X}) and S.D (σ) for Earning per Share (x)

Fiscal Year	NABIL		SCBNL		HBL		EBL	
	X	$(X - \bar{X})^2$	X	$(X - \bar{X})^2$	X	$(X - \bar{X})^2$	X	$(X - \bar{X})^2$
2005/06	129.21	296.53	175.84	1874.02	59.24	15.76	62.78	568.82
2006/07	137.08	629.51	167.37	1212.43	60.66	29.05	78.42	67.40
2007/08	108.31	13.54	131.92	0.40	62.74	55.80	31.82	26.94
2008/09	106.76	27.35	109.99	508.95	61.90	43.96	99.99	178.49
2009/10	78.61	1114.22	77.65	3014.01	31.80	550.84	100.16	183.06
N=5/ Total	559.97	2081.15	662.77	6609.81	276.34	695.41	433.17	1024.71
Mean (\bar{X})	111.99		132.55		55.27		86.63	
S.D.(σ)	20.40		36.36		11.79		14.32	

Annex 21: Calculation of mean (\bar{X}) and S.D (σ) for Dividend per Share (x)

Fiscal Year	NABIL		SCBNL		HBL		EBL	
	X	$(X - \bar{X})^2$	X	$(X - \bar{X})^2$	X	$(X - \bar{X})^2$	X	$(X - \bar{X})^2$
2005/06	85	121	140	676	35	25.81	0	576
2006/07	140	1936	130	256	40	0.01	30	36
2007/08	100	16	130	256	45	24.21	30	36
2008/09	85	121	100	196	43.56	12.11	30	36
2009/10	70	676	70	1936	36.84	10.50	30	36
N=5 Total	480	2870	570	3320	200.40	72.64	120	720
Mean (\bar{X})	96		114		40.08		24	
S.D.(σ)	23.96		25.77		3.81		12	

Annex 22: Calculation of mean (\bar{X}) and S.D (σ) for Price Earning Ratio (x)

Fiscal Year	NABIL		SCBNL		HBL		EBL	
	X	$(X - \bar{X})^2$	X	$(X - \bar{X})^2$	X	$(X - \bar{X})^2$	X	$(X - \bar{X})^2$
2005/06	17.34	341.51	21.47	384.16	18.57	64.16	21.94	13.03
2006/07	36.84	1.04	35.25	33.87	28.69	4.45	30.99	29.27
2007/08	48.70	165.89	51.77	114.49	31.56	24.80	34.00	72.76
2008/09	45.89	101.40	54.64	184.14	28.43	3.42	24.55	1.06
2009/10	30.33	30.14	42.23	1.35	25.66	0.85	16.27	86.68
N=5 Total	179.10	639.98	205.36	718.01	26.58	97.68	127.89	202.80
Mean (\bar{X})	35.82		41.07		26.58		25.58	
S.D.(σ)	11.31		11.98		4.42		6.37	

Annex 23: Calculation of mean (\bar{X}) and S.D (σ) for Overall Capitalization Rate

(x)

Fiscal Year	NABIL		SCBNL		HBL		EBL	
	X	$(X - \bar{X})^2$	X	$(X - \bar{X})^2$	X	$(X - \bar{X})^2$	X	$(X - \bar{X})^2$
2005/06	10.36	12.11	8.23	7.84	13.62	19.54	11.64	9.30
2006/07	5.81	1.14	5.45	0.01	9.62	0.78	8.65	0.01
2007/08	4.72	4.67	3.83	2.56	8.10	1.21	7.76	0.69
2008/09	5.67	1.46	3.95	2.19	6.72	6.15	6.68	3.65
2009/10	7.84	0.92	5.67	0.06	7.94	1.59	8.23	0.13
N=5 Total	34.40	20.30	27.13	12.66	46	28.67	42.96	13.78
Mean (\bar{X})	6.88		5.43		9.20		8.59	
S.D.(σ)	5.43		1.59		2.39		1.66	

Annex 24: Calculation of mean (\bar{X}) and S.D (σ) for Equity Capitalization Rate

(x)

Fiscal Year	NABIL		SCBNL		HBL		EBL	
	X	$(X - \bar{X})^2$	X	$(X - \bar{X})^2$	X	$(X - \bar{X})^2$	X	$(X - \bar{X})^2$
2005/06	8.15	14.82	6.64	7.34	7.92	7.45	6.60	3.42
2006/07	4.01	0.08	4.17	0.06	5.09	0.01	4.95	0.04
2007/08	3.00	1.69	2.81	1.25	4.73	0.21	4.28	0.22
2008/09	2.85	2.10	2.67	1.59	3.98	1.46	3.81	0.88
2009/10	3.51	0.62	3.37	0.31	4.23	0.92	4.11	0.41
N=5 Total	21.52	19.31	19.66	10.55	25.95	10.05	23.75	4.97
Mean (\bar{X})	4.30		3.93		5.19		4.75	
S.D.(σ)	1.97		1.45		1.42		1.00	

Annex 25: (I) Calculation of Correlation Coefficient (r) between Debt Equity Ratio and ROSE

Fiscal Year	NABIL					SCBNL				
	D/E Ratio (x)	ROSE (y)	xy	x ²	y ²	D/E Ratio (x)	ROSE (y)	xy	x ²	y ²
2005/06	59.07	33.88	2001.29	3489.26	1147.85	54.28	37.55	2038.21	4946.32	1410.00
2006/07	90.13	32.76	2952.66	8123.42	1073.22	86.63	32.68	2831.07	7504.76	1067.98
2007/08	114.09	30.63	3494.58	13016.53	938.20	44.10	32.85	1448.69	1944.81	1079.12
2008/09	108.26	32.94	3566.08	11720.23	1085.04	54.49	33.58	1829.77	2969.16	1127.62
2009/10	49.67	29.70	1475.20	2467.11	882.09	49.29	32.22	1588.12	2429.50	1038.13
N=5 Total	ΣX=421.22	Σy=159.91	Σxy=13489.81	Σx ² =38816.55	Σy ² =5126.40	Σx=288.79	Σy=168.88	Σxy=9735.86	Σx ² =17794.55	Σy ² =5722.85

We have,

For NABIL,

$$r = \frac{N \sum xy - \sum x \sum y}{\sqrt{N \sum x^2 - (\sum x)^2} \times \sqrt{N \sum y^2 - (\sum y)^2}} = \frac{5 \times 13489.81 - 421.22 \times 159.91}{\sqrt{5 \times 38816.55 - (421.22)^2} \times \sqrt{5 \times 5126.40 - (159.91)^2}} = 0.0912$$

$$r^2 = (0.0912)^2 = 0.0083$$

$$P.E. = \frac{0.6745(1-r^2)}{\sqrt{N}} = \frac{0.6745(1-0.0083)}{\sqrt{5}} = 0.2991$$

$$6P.E. = 6 \times 0.2991 = 1.7946$$

For SCBNL,

$$r = \frac{N \sum xy - \sum x \sum y}{\sqrt{N \sum x^2 - (\sum x)^2} \times \sqrt{N \sum y^2 - (\sum y)^2}} = \frac{5 \times 9735.86 - 288.79 \times 168.88}{\sqrt{5 \times 17794.55 - (288.79)^2} \times \sqrt{5 \times 5722.85 - (168.88)^2}} = -0.1266$$

$$r^2 = (-0.1266)^2 = 0.0160$$

$$P.E. = \frac{0.6745(1-r^2)}{\sqrt{N}} = \frac{0.6745(1-0.0160)}{\sqrt{5}} = 0.2968$$

$$6P.E. = 6 \times 0.2968 = 1.7808$$

Annex 25: (II) Calculation of Correlation Coefficient (r) between Debt Equity Ratio and ROSE

Fiscal Year	HBL					EBL				
	D/E Ratio (x)	ROSE (y)	xy	x ²	y ²	D/E Ratio (x)	ROSE (y)	xy	x ²	y ²
2005/06	68.13	25.90	1764.57	4641.70	670.81	124.2	24.65	3057.09	15380.96	207.62
2006/07	61.69	22.91	1413.32	3805.66	524.87	170.19	24.67	4198.59	28964.64	608.61
2007/08	72.41	25.30	1831.97	523.21	640.09	65.16	23.49	1530.61	4242.83	551.78
2008/09	48.69	24.13	1174.89	2370.72	582.26	63.09	28.99	1828.98	3980.35	840.42
2009/10	48.46	14.79	716.72	2348.37	218.74	61.30	30.15	1848.20	3757.69	909.42
N=5 Total	ΣX=299.38	Σy=113.03	Σxy=6901.47	Σx ² =18409.66	Σy ² =2636.77	Σx=483.76	Σy=131.95	Σxy=12463.47	Σx ² =56329.47	Σy ² =3517.45

We have,

For HBL,

$$r = \frac{N \sum xy - \sum x \sum y}{\sqrt{N \sum x^2 - (\sum x)^2} \times \sqrt{N \sum y^2 - (\sum y)^2}} = \frac{5 \times 6901.47 - 299.38 \times 113.03}{\sqrt{5 \times 18409.66 - (299.38)^2} \times \sqrt{5 \times 2636.77 - (113.03)^2}} = 0.6726$$

$$r^2 = (0.6726)^2 = 0.4524$$

$$P.E. = \frac{0.6745(1-r^2)}{\sqrt{N}} = \frac{0.6745(1-0.4524)}{\sqrt{5}} = 0.1652$$

$$6P.E. = 6 \times 0.1652 = 0.9912$$

For EBL,

$$r = \frac{N \sum xy - \sum x \sum y}{\sqrt{N \sum x^2 - (\sum x)^2} \times \sqrt{N \sum y^2 - (\sum y)^2}} = \frac{5 \times 12463.47 - 483.76 \times 131.95}{\sqrt{5 \times 56329.47 - (483.76)^2} \times \sqrt{5 \times 3517.45 - (131.95)^2}} = -0.5226$$

$$r^2 = (-0.5226)^2 = 0.2731$$

$$P.E. = \frac{0.6745(1-r^2)}{\sqrt{N}} = \frac{0.6745(1-0.2731)}{\sqrt{5}} = 0.2193$$

$$6P.E. = 6 \times 0.2193 = 13.3158$$

Annex 26: (I) Calculation of Correlation Coefficient (r) between Debt Equity Ratio and ROA

Fiscal Year	NABIL					SCBNL				
	D/E Ratio (x)	ROA (y)	xy	x ²	y ²	D/E Ratio (x)	ROA (y)	xy	x ²	y ²
2005/06	59.07	2.84	167.76	3489.26	8.07	54.28	2.56	138.96	4946.32	6.55
2006/07	90.13	2.47	222.62	8123.42	6.10	86.63	2.42	209.64	7504.76	5.59
2007/08	114.09	2.01	229.32	13016.53	4.04	44.10	2.46	108.49	1944.81	6.05
2008/09	108.26	2.35	254.14	11720.23	5.25	54.49	2.53	137.86	2969.16	6.40
2009/10	49.67	2.18	108.28	2467.11	4.75	49.29	2.70	133.08	2429.50	7.29
N=5 Total	ΣX=421.22	Σy=11.25	Σxy=982.39	Σx ² =38816.55	Σy ² =28.48	Σx=288.79	Σy=12.67	Σxy=728.03	Σx ² =17794.55	Σy ² =32.15

We have,

For NABIL,

$$r = \frac{N \sum xy - \sum x \sum y}{\sqrt{N \sum x^2 - (\sum x)^2} \times \sqrt{N \sum y^2 - (\sum y)^2}} = \frac{5 \times 982.39 - 421.22 \times 11.85}{\sqrt{5 \times 38816.55 - (421.22)^2} \times \sqrt{5 \times 28.48 - (11.85)^2}} = -0.4369$$

$$r^2 = (-0.4369)^2 = 0.1909$$

$$P.E. = \frac{0.6745(1-r^2)}{\sqrt{N}} = \frac{0.6745(1-0.1909)}{\sqrt{5}} = 0.2441$$

$$6P.E. = 6 \times 0.2441 = 1.4646$$

For SCBNL,

$$r = \frac{N \sum xy - \sum x \sum y}{\sqrt{N \sum x^2 - (\sum x)^2} \times \sqrt{N \sum y^2 - (\sum y)^2}} = \frac{5 \times 728.03 - 288.79 \times 12.67}{\sqrt{5 \times 17794.55 - (288.79)^2} \times \sqrt{5 \times 32.15 - (12.67)^2}} = -0.5374$$

$$r^2 = (-0.5374)^2 = 0.2888$$

$$P.E. = \frac{0.6745(1-r^2)}{\sqrt{N}} = \frac{0.6745(1-0.2888)}{\sqrt{5}} = 0.2145$$

$$6P.E. = 6 \times 0.2145 = 1.2870$$

Annex 26: (II) Calculation of Correlation Coefficient (r) between Debt Equity Ratio and ROA

Fiscal Year	HBL					EBL				
	D/E Ratio (x)	ROA (y)	xy	x ²	y ²	D/E Ratio (x)	ROA (y)	xy	x ²	y ²
2005/06	68.13	1.55	105.60	4641.70	2.40	124.2	1.49	184.79	15380.96	2.22
2006/07	61.69	1.47	90.68	3805.66	2.16	170.19	1.38	234.86	28964.64	1.90
2007/08	72.41	1.76	127.44	523.21	3.10	65.16	1.66	108.17	4242.83	2.76
2008/09	48.69	1.71	93.00	2370.72	3.65	63.09	1.73	109.15	3980.35	2.99
2009/10	48.46	1.19	57.67	2348.37	1.42	61.30	2.01	123.21	3757.69	4.04
N=5 Total	ΣX=299.38	Σy=7.88	Σxy=474.39	Σx ² =18409.66	Σy ² =12.73	Σx=483.76	Σy=8.27	Σxy=760.18	Σx ² =56329.47	Σy ² =13.91

We have,

For HBL,

$$r = \frac{N \sum xy - \sum x \sum y}{\sqrt{N \sum x^2 - (\sum x)^2} \times \sqrt{N \sum y^2 - (\sum y)^2}} = \frac{5 \times 474.39 - 299.38 \times 7.88}{\sqrt{5 \times 18409.66 - (299.38)^2} \times \sqrt{5 \times 12.73 - (7.88)^2}} = 0.2090$$

$$r^2 = (0.2090)^2 = 0.0437$$

$$P.E. = \frac{0.6745(1-r^2)}{\sqrt{N}} = \frac{0.6745(1-0.0437)}{\sqrt{5}} = 0.2885$$

$$6P.E. = 6 \times 0.2885 = 1.7310$$

For EBL,

$$r = \frac{N \sum xy - \sum x \sum y}{\sqrt{N \sum x^2 - (\sum x)^2} \times \sqrt{N \sum y^2 - (\sum y)^2}} = \frac{5 \times 760.18 - 483.76 \times 8.27}{\sqrt{5 \times 56329.47 - (483.76)^2} \times \sqrt{5 \times 13.91 - (8.27)^2}} = -0.8501$$

$$r^2 = (-0.8501)^2 = 0.7227$$

$$P.E. = \frac{0.6745(1-r^2)}{\sqrt{N}} = \frac{0.6745(1-0.7227)}{\sqrt{5}} = 0.0836$$

$$6P.E. = 6 \times 0.0836 = 0.5016$$

**Annex 27: (I) Calculation of Correlation Coefficient (r) between K_o and Debt
Equity Ratio**

Fiscal Year	NABIL					SCBNL				
	K _o (x)	D/E Ratio (y)	xy	x ²	y ²	K _o (x)	D/E Ratio (y)	xy	x ²	y ²
2005/06	10.36	59.07	611.97	107.33	3489.26	8.23	54.28	446.72	67.73	2946.32
2006/07	5.81	90.13	523.66	33.76	8123.42	5.45	86.63	472.13	29.70	7504.76
2007/08	4.72	114.09	538.50	22.28	13016.53	3.83	44.10	168.90	14.67	1944.81
2008/09	5.67	108.26	613.83	32.15	11720.23	3.95	54.49	215.24	15.60	2969.16
2009/10	7.84	49.67	389.41	61.47	2467.11	5.67	49.29	279.47	32.15	429.50
N=5 Total	Σx=34.40	Σy=421.22	Σxy=2677.37	Σx ² =256.99	Σy ² =38816.55	Σx=27.13	Σy=288.79	Σxy=1582.46	Σx ² =159.85	Σy ² =17794.55

We have,

For NABIL,

$$r = \frac{N \sum xy - \sum x \sum y}{\sqrt{N \sum x^2 - (\sum x)^2} \times \sqrt{N \sum y^2 - (\sum y)^2}} = \frac{5 \times 2677.37 - 34.40 \times 421.22}{\sqrt{5 \times 256.99 - (34.40)^2} \times \sqrt{5 \times 38816.55 - (421.22)^2}} = -0.8480$$

$$r^2 = (-0.8480)^2 = 0.7191$$

$$P.E. = \frac{0.6745(1-r^2)}{\sqrt{N}} = \frac{0.6745(1-0.7191)}{\sqrt{5}} = 0.0847$$

$$6P.E. = 6 \times 0.0847 = 0.5082$$

For SCBNL,

$$r = \frac{N \sum xy - \sum x \sum y}{\sqrt{N \sum x^2 - (\sum x)^2} \times \sqrt{N \sum y^2 - (\sum y)^2}} = \frac{5 \times 1582.46 - 27.13 \times 288.798}{\sqrt{5 \times 159.85 - (27.13)^2} \times \sqrt{5 \times 17794.55 - (288.79)^2}} = 0.1305$$

$$r^2 = (0.1305)^2 = 0.0170$$

$$P.E. = \frac{0.6745(1-r^2)}{\sqrt{N}} = \frac{0.6745(1-0.0170)}{\sqrt{5}} = 0.2965$$

$$6P.E. = 6 \times 0.2965 = 1.779$$

Annex 27: (II) Calculation of Correlation Coefficient (r) K_o and Debt Equity Ratio

Fiscal Year	HBL					EBL				
	K _o (x)	D/E Ratio (y)	xy	x ²	y ²	K _o (x)	D/E Ratio (y)	xy	x ²	y ²
2005/06	13.62	68.13	927.93	185.50	4641.70	11.64	124.2	1443.59	135.48	15380.96
2006/07	9.62	61.69	593.46	92.54	3805.66	8.65	170.19	1472.14	74.82	28964.64
2007/08	8.10	72.41	586.52	65.61	523.21	7.76	65.16	505.64	60.22	4242.83
2008/09	6.72	48.69	327.20	45.16	2370.72	6.68	63.09	421.44	44.62	3980.35
2009/10	7.94	48.46	384.77	63.04	2348.37	8.23	61.30	504.50	67.73	3757.69
N=5 Total	Σx=46	Σy=299.38	Σxy=2819.88	Σx ² =451.85	Σy ² =18409.66	Σx=42.96	Σy=483.76	Σxy=4347.31	Σx ² =382.88	Σy ² =56329.47

We have,

For HBL,

$$r = \frac{N \sum xy - \sum x \sum y}{\sqrt{N \sum x^2 - (\sum x)^2} \times \sqrt{N \sum y^2 - (\sum y)^2}} = \frac{5 \times 2819.88 - 46 \times 299.38}{\sqrt{5 \times 451.85 - (46)^2} \times \sqrt{5 \times 18409.66 - (299.38)^2}} = 0.5567$$

$$r^2 = (0.5567)^2 = 0.3099$$

$$P.E. = \frac{0.6745(1-r^2)}{\sqrt{N}} = \frac{0.6745(1-0.3099)}{\sqrt{5}} = 0.2082$$

$$6P.E. = 6 \times 0.2082 = 1.2492$$

For EBL,

$$r = \frac{N \sum xy - \sum x \sum y}{\sqrt{N \sum x^2 - (\sum x)^2} \times \sqrt{N \sum y^2 - (\sum y)^2}} = \frac{5 \times 4347.31 - 42.96 \times 483.76}{\sqrt{5 \times 382.88 - (42.96)^2} \times \sqrt{5 \times 56329.47 - (483.76)^2}} = 0.5270$$

$$r^2 = (0.5270)^2 = 0.2777$$

$$P.E. = \frac{0.6745(1-r^2)}{\sqrt{N}} = \frac{0.6745(1-0.2777)}{\sqrt{5}} = 0.1427$$

$$6P.E. = 6 \times 0.1427 = 0.8562$$

Annex 28: (I) Calculation of Correlation Coefficient (r) between EBIT and Interest Payment

Rs. in Million

Fiscal Year	NABIL					SCBNL				
	EBIT (x)	Interest (y)	xy	x ²	y ²	EBIT (x)	interest (y)	xy	x ²	y ²
2005/06	125.52	35.72	4483.57	15755.27	1275.92	124.26	30.32	3767.56	15440.55	919.30
2006/07	155.08	55.57	8617.80	24049.81	3088.02	142.92	41.31	5904.03	20426.13	1706.52
2007/08	184.74	75.84	14010.68	34128.87	5751.71	166.51	47.17	7854.28	27725.58	2225.0
2008/09	263.19	115.33	30353.70	69268.98	13301.01	01.10	54.38	10935.82	40441.21	2957.18
2009/10	358.53	196.01	70275.47	128543.76	38419.92	211.21	57.57	12159.36	44609.66	3314.30
N=5 Total	Σx=1087.06	Σy=478.47	Σxy=127741.22	Σx ² =271746.69	Σy ² =61836.58	Σy=846	Σx=230.75	Σxy=40621.05	Σx ² =148643.13	Σy ² =11122.31

We have,

For NABIL,

$$r = \frac{N \sum xy - \sum x \sum y}{\sqrt{N \sum x^2 - (\sum x)^2} \times \sqrt{N \sum y^2 - (\sum y)^2}} = \frac{5 \times 127741.22 - 1087.06 \times 478.47}{\sqrt{5 \times 271746.69 - (1087.06)^2} \times \sqrt{5 \times 61836.58 - (478.47)^2}} = 0.9949$$

$$r^2 = (0.9949)^2 = 0.9898$$

$$P.E. = \frac{0.6745(1-r^2)}{\sqrt{N}} = \frac{0.6745(1-0.9898)}{\sqrt{5}} = 0.0031$$

$$6P.E. = 6 \times 0.0031 = 0.0186$$

For SCBNL,

$$r = \frac{N \sum xy - \sum x \sum y}{\sqrt{N \sum x^2 - (\sum x)^2} \times \sqrt{N \sum y^2 - (\sum y)^2}} = \frac{5 \times 40621.05 - 846 \times 230.75}{\sqrt{5 \times 148643.13 - (846)^2} \times \sqrt{5 \times 11122.31 - (230.75)^2}} = 0.9782$$

$$r^2 = (0.9782)^2 = 0.9569$$

$$P.E. = \frac{0.6745(1-r^2)}{\sqrt{N}} = \frac{0.6745(1-0.9569)}{\sqrt{5}} = 0.0130$$

$$6P.E. = 6 \times 0.0130 = 0.0780$$

Annex 28: (II) Calculation of Correlation Coefficient (r) between EBIT and Interest Payment

Rs. in Million

Fiscal Year	HBL					EBL				
	EBIT (x)	interest (y)	xy	x ²	y ²	EBIT (x)	interest (y)	xy	x ²	y ²
2005/06	132.12	64.88	8571.95	17455.69	4209.41	74.54	40.14	2992.04	5556.21	1611.22
2006/07	148.48	76.74	11394.36	22046.31	5889.03	97.19	51.72	5026.67	9445.90	2674.96
2007/08	177.26	82.37	14600.91	31421.11	6784.82	129.13	63.26	8168.76	16674.56	4001.83
2008/09	200.14	93.48	18709.09	10056.02	8738.51	190.42	101.29	19287.64	36259.78	10259.66
2009/10	230.93	155.35	35874.98	53328.66	24133.62	118.80	157.28	18684.28	14113.44	24737
N=5 Total	Σx=8889.3	Σy=472.82	Σxy=89151.29	Σx ² =164307.79	Σy ² =164307.7	Σc=610.0	Σy=413.69	Σxy=54159.9	Σx ² =82049.89	Σy ² =43284.6
					9	8		7		7

We have,

For NABIL,

$$r = \frac{N \sum xy - \sum x \sum y}{\sqrt{N \sum x^2 - (\sum x)^2} \times \sqrt{N \sum y^2 - (\sum y)^2}} = \frac{5 \times 89151.29 - 888.93 \times 472.82}{\sqrt{5 \times 164307.79 - (888.93)^2} \times \sqrt{5 \times 49755.39 - (472.82)^2}} = 0.9053$$

$$r^2 = (0.9053)^2 = 0.8196$$

$$P.E. = \frac{0.6745(1-r^2)}{\sqrt{N}} = \frac{0.6745(1-0.8196)}{\sqrt{5}} = 0.0544$$

$$6P.E. = 6 \times 0.0544 = 0.3264$$

For SCBNL,

$$r = \frac{N \sum xy - \sum x \sum y}{\sqrt{N \sum x^2 - (\sum x)^2} \times \sqrt{N \sum y^2 - (\sum y)^2}} = \frac{5 \times 54159.97 - 610.08 \times 413.69}{\sqrt{5 \times 82049.89 - (610.08)^2} \times \sqrt{5 \times 43284.67 - (413.69)^2}} = 0.4436$$

$$r^2 = (0.4436)^2 = 0.1968$$

$$P.E. = \frac{0.6745(1-r^2)}{\sqrt{N}} = \frac{0.6745(1-0.1968)}{\sqrt{5}} = 0.2423$$

$$6P.E. = 6 \times 0.2423 = 1.4538$$

Annex 29: Regression Coefficient (b) and t-test (t)

I) Calculation of Regression Coefficient & t-test between Ke and Leverage For NABIL

Fiscal Year	Leverage (x)	Ke (y)	xy	x ²	y ²	$\left(x - \frac{\sum x}{N}\right)^2$
2005/06	59.07	8.15	481.42	3489.26	66.42	633.53
2006/07	90.13	4.01	361.42	8123.42	16.08	34.69
2007/08	114.09	3.00	342.27	13016.53	9.00	891.02
2008/09	108.26	.85	308.54	11720.23	8.12	576.96
2009/10	49.67	3.51	174.34	2467.11	12.32	1195.08
N=5 Total	$\sum x = 421.22$	$\sum y = 21.52$	$\sum xy = 1667.99$	$\sum x^2 = 38816.55$	$\sum y^2 = 111.94$	$\left(x - \frac{\sum x}{N}\right)^2 = 3331.28$

Here,

Simple regression equation of y on x i.e. leverage is,

$$y = a + bx$$

According to the least square method, two normal equation for estimating two numerical constant 'a' and 'b' are given by,

$$\sum y = Na + b \sum x \text{ -----(I)}$$

$$\sum xy = a \sum x + b \sum x^2 \text{ -----(II)}$$

Putting the above tabulated value in eqⁿ. (I) and (II), we get

$$21.52 = 5a + 421.22b \text{ -----(III)}$$

$$1667.99 = 421.22a + 38816.55b \text{ -----(IV)}$$

Multiplying eqⁿ. (III) by 421.22 and eqⁿ. (IV) by 5, we get

$$\begin{array}{r} 9064.55 = 2106.10a + 177426.29b \\ -8339.95 = 2106.10a + 174082.75b \\ \hline \end{array}$$

$$724.70 = -1656.46b$$

$$\text{Or, } b = \frac{724.70}{-16656.46}$$

$$B = -0.0435$$

Putting the value of b in eqn. (III), we get

$$21.52 = 5a + 421.22 \times (-0.0435)$$

$$\text{or, } 5a = 21.52 + 18.32$$

$$\text{or, } a = \frac{39.54}{5}$$

$$\text{or, } a = 7.9680$$

For T-test Calculation

Null hypothesis (H_0): $b=0$, the regression model of y on x is not significant.

Or the slope of line is zero.

Alternative hypothesis (H_1): $b \neq 0$, the regression model of y on x is significant or the slope of line is not zero.

Now, using the formula for standard error of y , we have

$$\begin{aligned} S_y &= \sqrt{\frac{\sum y^2 - a \sum y - b \sum xy}{N-2}} \\ &= \sqrt{\frac{111.94 - 7.9680 \times 21.52 - (-0.0435) \times 1667.99}{5-2}} \\ &= \sqrt{\frac{111.94 - 171.47 + 72.56}{5-2}} = \sqrt{\frac{13.03}{3}} = 2.0841 \end{aligned}$$

Putting the value of S_y in calculating the standard error of estimate for the slope of line, we have

$$S_b = \frac{S_y}{\sqrt{\sum (x - \sum x/N)^2}} = \frac{2.0841}{\sqrt{3331.28}} = 0.0361$$

Testing t-statistics

$$\begin{aligned} T &= \frac{b}{s_b} \\ &= \frac{-0.0435}{0.0361} = -1.2050 \end{aligned}$$

$$\text{Degree of freedom (d.f.)} = N-2 = 5-2 = 3$$

$$\delta = 5\% = 0.05$$

Tabulated value of t for 3 d.f. at $\delta = 5\%$ level of significance for two tailed test is 3.1820

**Annex 29 (II): Regression Coefficient (b) and t-test between Ke and Leverage
For SCBLN**

Fiscal Year	Leverage (x)	Ke (y)	xy	x ²	y ²	$\left(x - \frac{\sum x}{N}\right)^2$
2005/06	54.28	6.64	360.42	2946.32	44.09	12.11
2006/07	86.63	4.17	361.25	7504.76	17.39	833.48
2007/08	44.10	2.81	123.92	1944.81	7.90	186.60
2008/09	54.49	2.67	145.49	2969.16	7.13	10.69
2009/10	49.29	3.37	166.11	2429.50	11.36	71.74
N=5 Total	$\sum x = 288.79$	$\sum y = 19.66$	$\sum xy = 1157.19$	$\sum x^2 = 17794.55$	$\sum y^2 = 87.87$	$\left(x - \frac{\sum x}{N}\right)^2 = 1144.62$

Here, Simple regression equation of y on x i.e. leverage is,

$$y = a + bx$$

To determine the value of a and b, the following two normal equation are to be solved.

$$\sum y = Na + b \sum x \quad \text{i.e. } 19.66 = 5a + 288.79b \text{ -----(I)}$$

$$\sum xy = a \sum x + b \sum x^2 \quad \text{i.e. } 1157.19 = 288.79a + 17794.55b \text{ -----(II)}$$

Multiplying eqⁿ. (I) by 288.79 and eqⁿ. (II) by 5, and subtracting eqⁿ (II) from eqⁿ (I), we have, b=0.0194

Now, putting the value of 'b' in eqⁿ.(I), then we get a= 2.8120

For T-test Calculation

Null hypothesis (H₀): b=0, the regression model of y on x is not significant.

Alternative hypothesis (H₁): b≠0, the regression model of y on x is significant

Now, using the formula for standard error of y, we have

$$S_y = \sqrt{\frac{\sum y^2 - a \sum y - b \sum xy}{N-2}} = 1.8385$$

Putting the value of S_y in calculating the standard error of estimate for the slope of line, we have

$$S_b = \frac{S_y}{\sqrt{\sum (x - \sum x / N)^2}} = \frac{1.8385}{\sqrt{1144.628}} = 0.0551$$

Testing t-statistics

$$T = \frac{b}{s_b} = \frac{0.0194}{0.0551} = 0.3521$$

**Annex 29 (III): Regression Coefficient (b) and t-test between Ke and Leverage
For HBL**

Fiscal Year	Leverage (x)	Ke (y)	xy	x ²	y ²	$\left(x - \frac{\sum x}{N}\right)^2$
2005/06	68.13	7.92	539.59	4641.70	62.73	68.06
2006/07	61.69	5.09	314.00	3805.66	25.91	3.28
2007/08	72.41	4.73	342.50	5243.21	22.37	157.00
2008/09	48.69	3.98	193.79	2370.72	15.84	125.22
2009/10	48.46	4.23	204.99	2348.37	17.89	130.42
N=5 Total	$\sum x = 299.38$	$\sum y = 25.95$	$\sum xy = 1594.87$	$\sum x^2 = 18409.66$	$\sum y^2 = 144.74$	$\left(x - \frac{\sum x}{N}\right)^2 = 483.98$

Here, Simple regression equation of y on x i.e. leverage is,

$$y = a + bx$$

To determine the value of a and b, the following two normal equation are to be solved.

$$\sum y = Na + b\sum x \quad \text{i.e. } 25.95 = 5a + 299.38b \text{ -----(I)}$$

$$\sum xy = a\sum x + b\sum x^2 \quad \text{i.e. } 1594.87 = 299.38a + 18409.66b \text{ -----(II)}$$

Multiplying eqⁿ. (I) by 288.79 and eqⁿ. (II) by 5, and subtracting eqⁿ (II) from eqⁿ (I), we have, b=0.0849

Now, putting the value of 'b' in eqⁿ.(I), then we get a=0.1060

For T-test Calculation

Null hypothesis (H₀): b=0, the regression model of y on x is not significant.

Alternative hypothesis (H₁): b≠0, the regression model of y on x is significant

Now, using the formula for standard error of y, we have

$$S_y = \sqrt{\frac{\sum y^2 - a\sum y - b\sum xy}{N-2}} = 1.4821$$

Putting the value of S_y in calculating the standard error of estimate for the slope of line, we have

$$S_b = \frac{S_y}{\sqrt{\sum(x - \sum x/N)^2}} = \frac{1.4821}{\sqrt{483.98}} = 0.0674$$

Testing t-statistics

$$T = \frac{b}{s_b} = \frac{0.0849}{0.0674} = 1.2596$$

**Annex 29 (IV): Regression Coefficient (b) and t-test between Ke and Leverage
For EBL**

Fiscal Year	Leverage (x)	Ke (y)	xy	x ²	y ²	$\left(x - \frac{\sum x}{N}\right)^2$
2005/06	124.02	6.60	818.53	15380.96	43.56	743.65
2006/07	170.9	4.95	842.44	28964.64	24.50	5393.43
2007/08	65.16	4.28	278.80	4245.83	8.32	997.93
2008/09	63.09	3.81	240.37	3980.35	14.52	1132.99
2009/10	61.30	4.11	251.94	3757.69	16.89	1256.70
N=5 Total	$\sum x = 483.76$	$\sum y = 23.75$	$\sum xy = 2432.16$	$\sum x^2 = 56329.47$	$\sum y^2 = 117.79$	$\left(x - \frac{\sum x}{N}\right)^2 = 9524.70$

Here, Simple regression equation of y on x i.e. leverage is,

$$y = a + bx$$

To determine the value of a and b, the following two normal equation are to be solved.

$$\sum y = Na + b \sum x \quad \text{i.e. } 23.75 + 5a + 483.76b \text{ -----(I)}$$

$$\sum xy = a \sum x + b \sum x^2 \quad \text{i.e. } 2432.16 = 483.76a + 56329.47b \text{ -----(II)}$$

Multiplying eqⁿ. (I) by 483.76 and eqⁿ. (II) by 5, and subtracting eqⁿ (II) from eqⁿ (I), we have, b=0.0036

Now, putting the value of 'b' in eqⁿ.(I), then we get a= 4.4020

For T-test Calculation

Null hypothesis (H₀): b=0, the regression model of y on x is not significant.

Alternative hypothesis (H₁): b≠0, the regression model of y on x is significant

Now, using the formula for standard error of y, we have

$$S_y = \sqrt{\frac{\sum y^2 - a \sum y - b \sum xy}{N-2}} = 1.2220$$

Putting the value of S_y in calculating the standard error of estimate for the slope of line, we have

$$S_b = \frac{S_y}{\sqrt{\sum (x - \sum x / N)^2}} = \frac{1.2220}{\sqrt{9524.70}} = 0.0125$$

Testing t-statistics

$$T = \frac{b}{s_b} = \frac{0.0036}{0.0125} = 0.2880$$

Annex 30: Regression coefficient (b) and T-test (t)

(I) Calculation of Regression Coefficient and T-test between ROSE and Leverage For NABIL

Fiscal Year	Leverage (X)	ROSE (Y)	XY	X ²	Y ²	$(X - \frac{\sum X}{N})^2$
2005/06	59.07	33.88	2001.29	3489.26	1147.85	633.53
2006/07	90.13	32.76	2952.66	8123.42	1073.22	34.69
2007/08	114.09	30.63	3494.58	13016.53	938.20	891.02
2008/09	108.26	32.94	3566.08	11720.23	1085.04	576.96
2009/10	49.67	29.70	1475.20	2467.11	882.09	1195.08
N=5 Total	$\sum X=421.22$	$\sum Y=159.91$	$\sum XY=13489.81$	$\sum X^2=38816.55$	$\sum Y^2=5126.40$	$\sum (X - \frac{\sum X}{N})^2=3331.28$

Here, Simple regression equation of y on X i.e. leverage is, $y=a + bx$

To determine the value of a and b, the following two normal equations are to be solved.

$$\sum Y = Na + b\sum X \quad \text{i.e. } 159.91 = 5a + 421.22b \quad \text{(I)}$$

$$\sum XY = a\sum X + b\sum X^2 \quad \text{i.e. } 13489.81 = 421.22a + 38816.55b \quad \text{(II)}$$

Multiplying eqⁿ (I) by 421.22 and eqⁿ (II) by 5 and Subtraction eqⁿ (II) from eqⁿ (I) we have, $b = 0.0055$

Now, putting the value of 'b' in eqⁿ (I), then we get $a = 31.5180$

For T-test Calculation

Null hypothesis (H₀): $b = 0$, the regression model of y on x is not significant.

Alternative hypothesis (H₁): $b \neq 0$, the regression model of y on x is significant.

Now, using the formula for standard error of estimate for the slope of line, we have

$$S_y = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{N-2}} = 2.0141$$

Putting the value of S_y in calculating the standard error of estimate for the slope of line, we have

$$S_b = \frac{S_y}{\sqrt{\sum (X - \frac{\sum X}{N})^2}} = \frac{2.0141}{\sqrt{3331.28}} = 0.0349$$

Testing t-statistics

$$t = \frac{b}{s_b} = \frac{0.0055}{0.0349} = 0.1576$$

(II) Calculation of Regression coefficient and T-test between ROSE Leverage For SCBNL

Fiscal Year	Leverage (X)	ROSE (Y)	XY	X ²	Y ²	$(X - \frac{\sum X}{N})^2$
2005/06	54.28	37.55	2038.21	2946.32	1410.00	12.11
2006/07	86.63	32.68	2831.07	7504.76	1067.98	833.48
2007/08	44.10	32.85	1448.69	1944.81	1079.12	186.60
2008/09	54.49	33.58	1829.77	2969.16	1127.62	10.69
2009/10	49.29	32.22	1588.12	2429.50	1038.13	71.74
N=5 Total	$\sum X=288.79$	$\sum Y=168.88$	$\sum XY=9735.86$	$\sum X^2=17794.55$	$\sum Y^2=5722.85$	$\sum (X - \frac{\sum X}{N})^2=114.62$

Here, Simple regression equation of y on X i.e. leverage is, $y=a + bx$

To determine the value of a and b, the following two normal equations are to be solved.

$$\sum Y = Na + b\sum X \quad \text{i.e. } 168.88 = 5a + 288.79b \text{ -----(I)}$$

$$\sum XY = a\sum X + b\sum X^2 \quad \text{i.e. } 9735.86 = 288.79a + 17794.55 b \text{ -----(II)}$$

Multiplying eqⁿ (I) by 288.79 and eqⁿ (II) by 5 and Subtraction eqⁿ (II) from eqⁿ (I) we have, $b = -0.0164$

Now, putting the value of 'b' in eqⁿ (I), then we get $a = 34.7240$

For T-test Calculation

Null hypothesis (H₀): $b = 0$, the regression model of y on x is not significant.

Alternative hypothesis (H₁): $b \neq 0$, the regression model of y on x is significant.

Now, using the formula for standard error of estimate for the slope of line, we have

$$S_y = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{N-2}} = 2.4718$$

Putting the value of S_y in calculating the standard error of estimate for the slope of line, we have

$$S_b = \frac{S_y}{\sqrt{\sum (X - \frac{\sum X}{N})^2}} = \frac{2.4718}{\sqrt{114.62}} = 0.0740$$

Testing t-statistics

$$t = \frac{b}{s_b} = \frac{-0.0164}{0.0740} = -0.2216$$

(III) Calculation of Regression Coefficient and T-test between ROSE and Leverage For HBL

Fiscal Year	Leverage (X)	ROSE (Y)	XY	X ²	Y ²	$(X - \frac{\sum X}{N})^2$
2005/06	68.13	25.90	1764.57	4641.70	670.81	68.06
2006/07	61.69	22.91	1413.32	3805.66	524.87	3.28
2007/08	72.41	25.30	1831.97	5243.21	640.09	157.00
2008/09	45.69	24.13	1174.89	2370.72	582.26	125.22
2009/10	48.46	14.79	716.72	2348.37	218.74	130.42
N=5 Total	$\sum X=299.38$	$\sum Y=113.03$	$\sum XY=6901.47$	$\sum X^2=18409.66$	$\sum Y^2=2636.77$	$\sum (X - \frac{\sum X}{N})^2=483.98$

Here, Simple regression equation of y on X i.e. leverage is, $y=a + bx$

To determine the value of a and b, the following two normal equations are to be solved.

$$\sum Y = Na + b\sum X \quad \text{i.e. } 113.03 = 5a + 299.38b \quad \text{(I)}$$

$$\sum XY = a\sum X + b\sum X^2 \quad \text{i.e. } 6901.47 = 299.38a + 18409.66b \quad \text{(II)}$$

Multiplying eqⁿ (I) by 299.38 and eqⁿ (II) by 5 and Subtraction eqⁿ (II) from eqⁿ (I) we have, $b = 0.2762$

Now, putting the value of 'b' in eqⁿ (I), then we get $a = 6.0680$

For T-test Calculation

Null hypothesis (H₀): $b = 0$, the regression model of y on x is not significant.

Alternative hypothesis (H₁): $b \neq 0$, the regression model of y on x is significant.

Now, using the formula for standard error of estimate for the slope of line, we have

$$S_y = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{N-2}} = 3.8605$$

Putting the value of S_y in calculating the standard error of estimate for the slope of line, we have

$$S_b = \frac{S_y}{\sqrt{\sum (X - \frac{\sum X}{N})^2}} = \frac{3.8605}{\sqrt{483.98}} = 0.1755$$

Testing t-statistics

$$t = \frac{b}{s_b} = \frac{0.2762}{0.1755} = 1.5738$$

(IV) Calculation of Regression Coefficient and T-test between ROSE and Leverage For EBL

Fiscal Year	Leverage (X)	ROSE (Y)	XY	X ²	Y ²	$(X - \frac{\sum X}{N})^2$
2005/06	124.02	24.65	3057.09	15380.96	607.62	743.65
2006/07	170.19	24.67	4198.59	28964.64	608.61	5393.43
2007/08	65.16	23.49	1530.61	4245.83	551.78	997.93
2008/09	63.09	28.99	1828.98	3980.35	840.42	1132.99
2009/10	61.30	30.15	1848.20	3757.69	909.02	1256.70
N=5 Total	$\sum X=483.76$	$\sum Y=131.95$	$\sum XY=12463.47$	$\sum X^2=56329.47$	$\sum Y^2=3517.45$	$\sum (X - \frac{\sum X}{N})^2=9524.70$

Here, Simple regression equation of y on X i.e. leverage is, $y=a + bx$

To determine the value of a and b, the following two normal equations are to be solved.

$$\sum Y = Na + b\sum X \quad \text{i.e. } 131.95 = 5a + 483.76b \quad \text{(I)}$$

$$\sum XY = a\sum X + b\sum X^2 \quad \text{i.e. } 12463.47 = 483.76a + 56329.47b \quad \text{(II)}$$

Multiplying eqⁿ (I) by 483.76 and eqⁿ (II) by 5 and Subtraction eqⁿ (II) from eqⁿ (I) we have, $b = -0.0318$

Now, putting the value of 'b' in eqⁿ (I), then we get $a = 29.4660$

For T-test Calculation

Null hypothesis (H₀): $b = 0$, the regression model of y on x is not significant.

Alternative hypothesis (H₁): $b \neq 0$, the regression model of y on x is significant.

Now, using the formula for standard error of estimate for the slope of line, we have

$$S_y = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{N-2}} = 2.9297$$

Putting the value of S_y in calculating the standard error of estimate for the slope of line, we have

$$S_b = \frac{S_y}{\sqrt{\sum (X - \frac{\sum X}{N})^2}} = \frac{2.9297}{\sqrt{9524.70}} = 0.0300$$

Testing t-statistics

$$t = \frac{b}{s_b} = \frac{-0.0318}{0.0300} = -1.0600$$

Annex 31 Regression coefficient (b) and T-test (t)

(I) Calculation of Regression coefficient & T-test between EPS and Leverage

For NABIL

Fiscal Year	Leverage (X)	EPS (Y)	XY	X ²	Y ²	$(X - \frac{\sum X}{N})^2$
2005/06	59.07	129.21	7632.43	3489.26	16695.22	633.53
2006/07	90.13	137.08	12355.02	8123.42	18790.93	34.69
2007/08	114.09	108.31	12357.09	13016.53	11731.06	891.02
2008/09	108.26	106.76	1157.84	11720.23	11397.70	576.96
2009/10	49.67	78.61	3904.56	2467.11	6179.53	1195.08
N=5 Total	$\sum X=421.22$	$\sum Y=559.97$	$\sum XY=38816.55$	$\sum X^2=38816.55$	$\sum Y^2=64794.44$	$\sum (X - \frac{\sum X}{N})^2=3331.28$

Here, Simple regression equation of y on X i.e. leverage is, $y=a + bx$

To determine the value of a and b, the following two normal equations are to be solved.

$$\sum Y = Na + b\sum X \quad \text{i.e. } 559.97 = 5a + 421.22b \quad \text{(I)}$$

$$\sum XY = a\sum X + b\sum X^2 \quad \text{i.e. } 38816.55 = 421.22a + 38816.55b \quad \text{(II)}$$

Multiplying eqⁿ (I) by 421.22 and eqⁿ (II) by 5 and Subtraction eqⁿ (II) from eqⁿ (I) we have, $b = 0.1900$

Now, putting the value of 'b' in eqⁿ (I), then we get $a = 95.9880$

For T-test Calculation

Null hypothesis (H₀): $b = 0$, the regression model of y on x is not significant.

Alternative hypothesis (H₁): $b \neq 0$, the regression model of y on x is significant.

Now, using the formula for standard error of estimate for the slope of line, we have

$$S_y = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{N-2}} = 25.5651$$

Putting the value of S_y in calculating the standard error of estimate for the slope of line, we have

$$S_b = \frac{S_y}{\sqrt{\sum (X - \frac{\sum X}{N})^2}} = \frac{25.5651}{\sqrt{3331.28}} = 0.4429$$

Testing t-statistics

$$t = \frac{b}{s_b} = \frac{0.1900}{0.4428} = 0.4291$$

**(II) Calculation of Regression coefficient & T-test between EPS and Leverage
For SCBNL**

Fiscal Year	Leverage (X)	EPS (Y)	XY	X ²	Y ²	$(X - \frac{\sum X}{N})^2$
2005/06	54.28	175.84	9544.60	2946.32	30919.71	12.11
2006/07	86.63	167.37	14499.26	7504.76	28012.72	833.48
2007/08	44.10	131.92	5817.67	1944.81	17402.89	186.60
2008/09	54.49	109.99	5993.36	2969.16	12097.80	10.69
2009/10	49.29	77.65	3827.37	2419.50	6029.52	71.74
N=5 Total	$\sum X=288.79$	$\sum Y=662.77$	$\sum XY=39682.26$	$\sum X^2=17794.55$	$\sum Y^2=94462.64$	$\sum (X - \frac{\sum X}{N})^2=1114.62$

Here, Simple regression equation of y on X i.e. leverage is, $y=a + bx$

To determine the value of a and b, the following two normal equations are to be solved.

$$\sum Y = Na + b\sum X \quad \text{i.e. } 662.77 = 5a + 288.79b \quad \text{(I)}$$

$$\sum XY = a\sum X + b\sum X^2 \quad \text{i.e. } 39682.26 = 288.79a + 17794.55b \quad \text{(II)}$$

Multiplying eqⁿ (I) by 288.79 and eqⁿ (II) by 5 and Subtraction eqⁿ (II) from eqⁿ (I) we have, $b = 1.2578$

Now, putting the value of 'b' in eqⁿ (I), then we get $a = 59.9060$

For T-test Calculation

Null hypothesis (H₀): $b = 0$, the regression model of y on x is not significant.

Alternative hypothesis (H₁): $b \neq 0$, the regression model of y on x is significant.

Now, using the formula for standard error of estimate for the slope of line, we have

$$S_y = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{N-2}} = 40.1928$$

Putting the value of S_y in calculating the standard error of estimate for the slope of line, we have

$$S_b = \frac{S_y}{\sqrt{\sum (X - \frac{\sum X}{N})^2}} = \frac{40.1928}{\sqrt{1114.62}} = 1.2039$$

Testing t-statistics

$$t = \frac{b}{s_b} = \frac{1.2578}{1.2039} = 1.0448$$

(III) Calculation of Regression coefficient & T-test between EPS and Leverage For HBL

Fiscal Year	Leverage (X)	EPS (Y)	XY	X ²	Y ²	$(X - \frac{\sum X}{N})^2$
2005/06	68.13	59.24	4036.02	4641.70	3509.38	68.06
2006/07	61.69	60.66	3742.12	3805.66	3679.64	3.28
114.09	72.41	62.74	4543.00	5243.21	3936.31	157.00
2008/09	48.69	61.90	3013.91	2348.72	3831.61	125.22
2009/10	48.46	31.80	1541.03	2348.37	1011.24	130.42
N=5 Total	$\sum X=299.38$	$\sum Y=276.34$	$\sum XY=16876.08$	$\sum X^2=18409.66$	$\sum Y^2=15958.18$	$\sum (X - \frac{\sum X}{N})^2=483.98$

Here, Simple regression equation of y on X i.e. leverage is, $y=a + bx$

To determine the value of a and b, the following two normal equations are to be solved.

$$\sum Y = Na + b\sum X \quad \text{i.e. } 276.34 = 5a + 299.38b \quad \text{(I)}$$

$$\sum XY = a\sum X + b\sum X^2 \quad \text{i.e. } 16876.08 = 299.38a + 18409.66b \quad \text{(II)}$$

Multiplying eqⁿ (I) by 299.38 and eqⁿ (II) by 5 and Subtraction eqⁿ (II) from eqⁿ (I) we have, $b = 0.6817$

Now, putting the value of 'b' in eqⁿ (I), then we get $a = 14.45$

For T-test Calculation

Null hypothesis (H₀): $b = 0$, the regression model of y on x is not significant.

Alternative hypothesis (H₁): $b \neq 0$, the regression model of y on x is significant.

Now, using the formula for standard error of estimate for the slope of line, we have

$$S_y = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{N-2}} = 12.5253$$

Putting the value of S_y in calculating the standard error of estimate for the slope of line, we have

$$S_b = \frac{S_y}{\sqrt{\sum (X - \frac{\sum X}{N})^2}} = \frac{12.5253}{\sqrt{483.98}} = 0.5693$$

Testing t-statistics

$$t = \frac{b}{s_b} = \frac{0.6817}{0.5693} = 1.1974$$

(IV) Calculation of Regression coefficient & T-test between EPS and leverage

For EBL

Fiscal Year	Leverage (X)	EPS (Y)	XY	X ²	Y ²	$(X - \frac{\sum X}{N})^2$
2005/06	124.02	62.78	7785.98	15380.96	3941.33	743.65
2006/07	170.19	78.42	13346.30	28964.64	6149.70	5393.43
114.09	65.16	91.82	5982.99	4245.83	8430.91	997.93
2008/09	63.09	99.99	6308.37	3980.35	9998.00	1132.99
2009/10	61.30	100.16	6137.81	3757.69	10032.03	1256.70
N=5 Total	$\sum X=483.76$	$\sum Y=433.17$	$\sum XY=39563.45$	$\sum X^2=56329.47$	$\sum Y^2=38551.97$	$\sum (X - \frac{\sum X}{N})^2=9524.70$

Here, Simple regression equation of y on X i.e. leverage is, $y=a + bx$

To determine the value of a and b, the following two normal equations are to be solved.

$$\sum Y = Na + b\sum X \quad \text{i.e. } 433.17 = 5a + 483.76b \quad \text{(I)}$$

$$\sum XY = a\sum X + b\sum X^2 \quad \text{i.e. } 39563.45 = 483.76a + 56329.47b \quad \text{(II)}$$

Multiplying eqⁿ (I) by 483.76 and eqⁿ (II) by 5 and Subtraction eqⁿ (II) from eqⁿ (I) we have, $b = -0.2464$

Now, putting the value of 'b' in eqⁿ (I), then we get $a = 110.4740$

For T-test Calculation

Null hypothesis (H₀): $b = 0$, the regression model of y on x is not significant.

Alternative hypothesis (H₁): $b \neq 0$, the regression model of y on x is significant.

Now, using the formula for standard error of estimate for the slope of line, we have

$$S_y = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{N-2}} = 12.1981$$

Putting the value of S_y in calculating the standard error of estimate for the slope of line, we have

$$S_b = \frac{S_y}{\sqrt{\sum (X - \frac{\sum X}{N})^2}} = \frac{12.1981}{\sqrt{9524.70}} = 0.1250$$

Testing t-statistics

$$t = \frac{b}{s_b} = \frac{-0.2464}{0.1250} = -1.9712$$

Annex 32 Regression coefficient (b) and T-test (t)

(I) Calculation of Regression coefficient between P/E Ratio and Leverage

For NABIL

Fiscal Year	Leverage (X)	P/E Ratio (Y)	XY	X ²	Y ²	$(X - \frac{\sum X}{N})^2$
2005/06	59.07	17.34	1024.27	3489.26	300.68	633.53
2006/07	90.13	36.84	3320.39	8123.42	1357.19	34.69
2007/08	114.09	48.70	5556.18	13016.53	2371.69	891.02
2008/09	108.26	45.89	4968.05	13016.53	2371.69	576.96
2009/10	49.67	30.33	1506.49	2467.11	919.91	1195.08
N=5 Total	$\sum X=421.22$	$\sum Y=179.10$	$\sum XY=16375.38$	$\sum X^2=38816.55$	$\sum Y^2=7055.36$	$\sum (X - \frac{\sum X}{N})^2=3331.28$

Here, Simple regression equation of y on x i.e. leverage is, $y=a + bx$

To determine the value of a and b, the following two normal equations are to be solved.

$$\sum Y = Na + b\sum X \quad \text{i.e. } 179.10 = 5a + 421.22b \quad \text{(I)}$$

$$\sum XY = a\sum X + b\sum X^2 \quad \text{i.e. } 16375.38 = 421.22a + 38816.55b \quad \text{(II)}$$

Multiplying eqⁿ (I) by 421.22 and eqⁿ (II) by 5 and Subtraction eqⁿ (II) from eqⁿ (I) we have, $b = 0.3864$

Now, putting the value of 'b' in eqⁿ (I), then we get $a = 3.2680$

For T-test Calculation

Null hypothesis (H₀): $b = 0$, the regression model of y on x is not significant.

Alternative hypothesis (H₁): $b \neq 0$, the regression model of y on x is significant.

Now, using the formula for standard error of estimate for the slope of line, we have

$$S_y = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{N-2}} = 6.8947$$

Putting the value of S_y in calculating the standard error of estimate for the slope of line, we have

$$S_b = \frac{S_y}{\sqrt{\sum (X - \frac{\sum X}{N})^2}} = \frac{6.8947}{\sqrt{3331.28}} = 0.1195$$

Testing t-statistics

$$t = \frac{b}{s_b} = \frac{0.3864}{0.1195} = 3.2335$$

(II) Calculation of Regression coefficient between P/E Ratio and Leverage

For NABIL

Fiscal Year	Leverage (X)	P/E Ratio (Y)	XY	X ²	Y ²	$(X - \frac{\sum X}{N})^2$
2005/06	54.28	21.47	1165.39	2946.32	460.96	12.11
2006/07	86.63	35.25	3053.71	7504.76	1242.56	833.48
2007/08	44.10	51.77	2283.06	1944.81	2680.13	186.60
2008/09	54.49	54.64	2977.33	2969.16	2985.53	10.69
2009/10	49.29	42.23	2081.52	2419.50	1783.37	71.74
N=5 Total	$\sum X=288.79$	$\sum Y=205.36$	$\sum XY=11561.01$	$\sum X^2=17794.55$	$\sum Y^2=9152.55$	$\sum (X - \frac{\sum X}{N})^2=1114.62$

Here, Simple regression equation of y on X i.e. leverage is, $y=a + bx$

To determine the value of a and b, the following two normal equations are to be solved.

$$\sum Y = Na + b\sum X \quad \text{i.e. } 205.36 = 5a + 288.79b \quad \text{(I)}$$

$$\sum XY = a\sum X + b\sum X^2 \quad \text{i.e. } 11561.01 = 288.79a + 17794.55b \quad \text{(II)}$$

Multiplying eqⁿ (I) by 288.79 and eqⁿ (II) by 5 and Subtraction eqⁿ (II) from eqⁿ (I) we have, $b = -0.2693$

Now, putting the value of 'b' in eqⁿ (I), then we get $a = 56.6260$

For T-test Calculation

Null hypothesis (H₀): $b = 0$, the regression model of y on x is not significant.

Alternative hypothesis (H₁): $b \neq 0$, the regression model of y on x is significant.

Now, using the formula for standard error of estimate for the slope of line, we have

$$S_y = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{N-2}} = 14.5741$$

Putting the value of S_y in calculating the standard error of estimate for the slope of line, we have

$$S_b = \frac{S_y}{\sqrt{\sum (X - \frac{\sum X}{N})^2}} = \frac{14.5741}{\sqrt{1114.62}} = 0.1382$$

Testing t-statistics

$$t = \frac{b}{s_b} = \frac{-0.2693}{0.1382} = -1.9486$$

(III) Calculation of Regression coefficient between P/E Ratio and Leverage

For HBL

Fiscal Year	Leverage (X)	P/E Ratio (Y)	XY	X ²	Y ²	$(X - \frac{\sum X}{N})^2$
2005/06	68.13	18.57	1265.17	4641.70	344.84	68.06
2006/07	61.69	28.69	1769.89	3805.66	823.12	3.28
2007/08	72.41	31.56	2285.26	5243.21	996.03	157.00
2008/09	48.69	28.43	1384.26	2370.72	808.26	125.22
2009/10	48.46	25.66	1243.48	2348.37	658.44	130.42
N=5 Total	$\sum X=299.38$	$\sum Y=132.91$	$\sum XY=7948.06$	$\sum X^2=18409.66$	$\sum Y^2=3630.69$	$\sum (X - \frac{\sum X}{N})^2=483.98$

Here, Simple regression equation of y on X i.e. leverage is, $y=a + bx$

To determine the value of a and b, the following two normal equations are to be solved.

$$\sum Y = Na + b\sum X \quad \text{i.e. } 132.91 = 5a + 299.38b \quad \text{(I)}$$

$$\sum XY = a\sum X + b\sum X^2 \quad \text{i.e. } 7948.06 = 299.38a + 18409.66b \quad \text{(II)}$$

Multiplying eqⁿ (I) by 299.38 and eqⁿ (II) by 5 and Subtraction eqⁿ (II) from eqⁿ (I) we have, $b = -0.0208$

Now, putting the value of 'b' in eqⁿ (I), then we get $a = 27.8280$

For T-test Calculation

Null hypothesis (H₀): $b = 0$, the regression model of y on x is not significant.

Alternative hypothesis (H₁): $b \neq 0$, the regression model of y on x is significant.

Now, using the formula for standard error of estimate for the slope of line, we have

$$S_y = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{N-2}} = 5.6977$$

Putting the value of S_y in calculating the standard error of estimate for the slope of line, we have

$$S_b = \frac{S_y}{\sqrt{\sum (X - \frac{\sum X}{N})^2}} = \frac{5.6977}{\sqrt{483.98}} = 0.2590$$

Testing t-statistics

$$t = \frac{b}{s_b} = \frac{-0.0208}{0.2590} = -0.0803$$

(IV) Calculation of Regression coefficient between P/E Ratio and Leverage

For EBL

Fiscal Year	Leverage (X)	P/E Ratio (Y)	XY	X ²	Y ²	$(X - \frac{\sum X}{N})^2$
2005/06	124.02	21.97	2724.72	1538.96	482.68	743.65
2006/07	170.19	30.99	5274.19	28964.64	960.38	5393.43
2007/08	65.16	34.11	2222.61	4245.83	1163.49	997.93
2008/09	63.09	24.55	1548.86	3980.35	602.71	1132.99
2009/10	31.30	16.27	997.35	3757.69	246.71	1256.70
N=5 Total	$\sum X=483.76$	$\sum Y=127.89$	$\sum XY=12767.73$	$\sum X^2=56329.47$	$\sum Y^2=3473.96$	$\sum (X - \frac{\sum X}{N})^2=9524.70$

Here, Simple regression equation of y on X i.e. leverage is, $y=a + bx$

To determine the value of a and b, the following two normal equations are to be solved.

$$\sum Y = Na + b\sum X \quad \text{i.e. } 127.89 = 5a + 483.76b \quad \text{(I)}$$

$$\sum XY = a\sum X + b\sum X^2 \quad \text{i.e. } 12767.73 = 483.76a + 56329.47b \quad \text{(II)}$$

Multiplying eqⁿ (I) by 483.76 and eqⁿ (II) by 5 and Subtraction eqⁿ (II) from eqⁿ (I) we have, $b = 0.0414$

Now, putting the value of 'b' in eqⁿ (I), then we get $a = 21.5720$

For T-test Calculation

Null hypothesis (H₀): $b = 0$, the regression model of y on x is not significant.

Alternative hypothesis (H₁): $b \neq 0$, the regression model of y on x is significant.

Now, using the formula for standard error of estimate for the slope of line, we have

$$S_y = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{N-2}} = 7.8854$$

Putting the value of S_y in calculating the standard error of estimate for the slope of line, we have

$$S_b = \frac{S_y}{\sqrt{\sum (X - \frac{\sum X}{N})^2}} = \frac{7.8854}{\sqrt{9524.70}} = 0.0808$$

Testing t-statistics

$$t = \frac{b}{s_b} = \frac{0.0414}{0.0808} = 0.5124$$

Annex 33

Questionnaire used for Primary Data Collection

A study on Impact of capital structure on cost of capital of joint venture banks in Nepal.

A survey on participants view

The respondents are assured that the responses will maintain anonymity. If respondents are interested, the findings would shared. The co-operation of respondents shall be highly appreciated.

Name (optional):

Designation:

Experience:

Year:

Age:

Firm type: Private/public (listed/non listed)

Please answer the following questions as they relate to the debt ratio of any business firm.

(1) Do you agree that use of debt affects the value of the firm?

Yes (....)

No (....)

Don't know (....)

(2) Do you agree that is there any necessity to maintain debt ratio as per other similar firms?

Yes (....)

No (....)

Don't know (....)

(3) Do you agree that the government policy affect the combination of debt and equity?

Yes (....)

No (....)

Don't know (....)

(4) Do you agree that the degree of risk associated with in bank will also increase as leverage increase?

Yes (....)

No (....)

Don't know (....)

(5) Do you agree that the capital structure followed by bank is in optimal level?

Yes (....)

No (....)

Don't know (....)

(6) Do you agree that the use of debt helps to maximize the market value of the share?

Yes (....)

No (....)

Don't know (....)

(7) Could you opine that there is no difference between the information obtained by investors and management?

Yes (....)

No (....)

Don't know (....)

(8) If you have options to finance a new project how do you rank the following alternatives?

Alternative	Rank			
	1	2	3	4
Issue of the debt				
Issue of the preferred stock				
Issue of the equity				
Use of retained earnings				
Other (mention if any)				

(9) What happens if the information obtained by the investor differs from that of management?

If there is difference between the information obtained by investors and management the following will be the impact please scale the statement in 5 points as 1 = strongly agree, 2 = agree, 3 = do not know, 4 = disagree and 5 = strongly disagree.

Statement	Rank			
	1	2	3	4
Investor demand more return on their Interment				
Overall cost of capital will tend to increase				
Investors may not feel any difference				
Company has to incur expense as investors suspect on management				

*****Thank you for your co-operation*****