CHAPTER-I

INTRODUCTION

1.1 Background of the Study

Nepal is a beautiful mountainous land-locked country. It is located between China and India. Though the Nepal is a developing country, it is rich in art, culture and religion but poor in its developmental aspects. In the period of Rana-regime, Nepal was in the path of backward development. Rare developmental activities were seen during those periods. After the emergence of democracy rapid developmental activities took place in various sectors. However satisfactory development was not observed. For the over all development of the country, each and every sectors has to be well developed in the proper manner. Among various sectors, capital market plays one of the vital roles for the development of country.

Capital markets are the markets meant for long-term securities issued by the government or corporations. Capital market typically involves financial assets (stocks, bonds) that have life span of greater than one year. Capital market helps the economy of the country to rise up; however capital market of Nepal is very lean in providing investment alternatives to the investors. Among possible various investment alternatives like common stocks, government bonds, corporate bonds, preference shares, rights, options, warrant and convertibles etc., only very few alternatives are available for Nepalese investors.

Equity financing is inevitable sources, which may not be profitable if fully depending on it. Thus, debt financing is another economical source of long-term financing. Funds required for expanding business as well as conducting long-term issuing corporate bond/debenture securities might finance project cheaply and easily.

Debt securities are the important types of financial instruments of the capital market of the nation. They are the securities, which provide fixed income to their holders that involve lower risk than the securities that yield variable income. If the company is going to be liquidated, firstly debt holders are paid. Debt holders get fixed interest before the stockholders get dividends. Generally, risk averter investor want to invest in debenture. Debt securities are of

many types such as-secured or unsecured, perpetual or redeemable, convertible or non-convertible.

Nepalese capital market as well as debt market has not reached its maturity stage. There is not proper exercise of debt-securities till now and its history is also very short. For the growth and development of Nepalese debt market, development of government debt securities market as well as corporate bond or debenture securities markets is necessary.

Corporate bond/debenture is a bond issued by a private firm business enterprise whether owned by private investors or by government enterprises. Corporate bond have high default risk. Unsecured bond of a corporation are known as debentures. Investors look to the earning power of the corporation and then security. Debenture holders are protected by the restriction imposed in the indenture.

Debenture issue is more suitable for profit-oriented institutions for taking leverage effects benefit. Debenture is a tool of maximizing shareholder's rate of return. Debt financing as well as equity financing is used in supply of long-term capital. Debt is economical sources of long-term financing.

The corporate bond/debenture market in Nepal is very lean. Very few companies have issued bond in the market. The first instance of issuing bond in the Nepalese history was by Bottlers Nepal Ltd., when it issued 18% coupon rate bond worth Rs. 5 million in FY 1986/87. During the period nine years between 1993/94 to 2001/02 bond issue occupied the third largest share portion in the total issue amount approved by SEBO (5.99%). Only two companies have issued bond though the time gap between the issues of corporate bond is as high as five years. Among them, Jyoti Spinning Mills Ltd. issued 14% coupon rate bond worth Rs. 20 million in FY 1992/93 and Shree Ram Sugar Mills Ltd. issued 14% convertible debenture worth Rs. 93 million (with par value Rs. 1,000) in 1997/98. However, some positive signals observed in the Nepalese capital market since last year. Although the government bonds were not available in the stock exchange floor, corporate bonds were made available.

Thereafter, the issuance of the 8.7% Himalayan Bank Ltd. 2009 Bond and its listing in the secondary market with separate trading system became a milestone in this regard. But, before the listing of HBL's bond, SRSML's convertible debenture was also listed in the exchange

without following separate trading system. Very few of these debentures were traded. However, SRSML bond was de-listed (and redeemed) in FY 2001/02. Out of 360,000 units of bonds issued by HBL, 100,000 units were issued to the general public and the rest were privately placed which were heavily oversubscribed. Nearly one and half years after HBL bond, Nepal Investment Bank Ltd. ($NIBL_1$) has issued Rs. 300 million Nepal Investment Bank Bond 2010 (with 7.5% coupon interest with semi-annual payment) in the FY 2003/04. Out of 300,000 units of issue, 100,000 units were issued to the general public and the rest were privately placed (Bhattarai, 2005:193-194).

Similarly, Everest Bank Ltd. had issued debenture of Rs. 300 million (with 6% coupon interest paid semi-annually) in the FY 2004/05. The par value of debenture was Rs. 1,000 with maturity period of seven years. Its issue manager was CIT (Everest Bank Ltd., Debenture Prospectus, 2005). Bank of Kathmandu Ltd. had issued Rs. 200 million "Bank of Kathmandu bond, 2069" (with 6% coupon interest paid semi-annually) in the FY 2004/05. Out of 200,000 units of issue, 50,000 units were issued to the general public and 150,000 units were privately placed. The par value of debenture was Rs. 1,000, with maturity period of seven years. Its issue manager was NMB (Bank of Kathmandu Ltd., Debenture Prospectus, 2005).

Again Nepal Investment Bank Ltd. ($NIBL_2$) had issued "Nepal Investment Bank Bond-2070" (with 6% coupon interest rate paid semi-annually) in the FY 2005/06. Out of 250,000 units of issue, 80,000 units were issued to the general public and 170,000 units were privately placed. The par value of debenture was Rs. 1,000, with maturity period of 7 years. Its issue manager was AFCL (Nepal Investment Bank Ltd., Debenture Prospectus, 2006).

Nepal Industrial and Commercial Bank Limited had issued Rs. 200 million "NIC Bond–2070" (with 6% coupon interest paid annually) in the FY 2005/06. Out of 200,000 units of issue (with par value Rs. 1,000), 50,000 units were issued to the general public and 150,000 units were privately placed. Its issue manager was AFCL (Nepal Industrial and Commercial Bank Ltd., Debenture Prospectus, 2006).

Nepal SBI Bank Ltd. has issued Rs. 200 million "6% Nepal SBI Bank Debenture-2070" (with maturity period of 7 years and semi-annual coupon payment) in the FY 2005/06. Out of 200,000 units of issue, 50,000 units were issued to the general public and 150,000 units are

privately placed. Its issue manager was CIT (Nepal SBI Bank Ltd., Debenture Prospectus, 2006). Thus, the above trend of issuing corporate debenture securities in Nepalese capital market, have shown some positive signals of its growth and development.

Nepal Investment Bank Ltd. ($NIBL_3$) had issued "Nepal Investment Bank Bond-2071" (with 6.25% coupon interest rate paid semi-annually) in the FY 2006/07. Out of 250,000 units of issue, 50,000 units were issued to the general public and 200,000 units were privately placed. The par value of debenture was Rs. 1,000, with maturity period of 7 years. Its issue manager was AFCL (Nepal Investment Bank Ltd., Debenture Prospectus, 2007).

Finally till the report writing following companies and corporation have issued debentures during fiscal year 2007/2008;

Kumari Bank Ltd. (KBL) had issued "KBL Bond -2065" (with 8.00% coupon interest rate) in the FY 2007/08. Out of 400,000 units of issue, 80,000 units were issued to the general public and 320,000 units were privately placed. The par value of debenture was Rs. 1,000, with maturity period of 7 years. Its issue manager was Nepal Merchant Bank and Finance Ltd.

Himalaya Bank Ltd. (HBL) had issued "HBL Bond 2072" (With 8 % coupon interest rate) in the FY 2007/08. Out of 500,000 units of issue..… units were issued to the general public and …… units were privately placed. The par value of debenture was Rs. 1,000, with maturity period of 7 years. Its issue manager was AFCL Ltd.

Nepal Investment Bank Ltd. ($NIBL_4$) had issued "Nepal Investment Bank Bond-2072" (with 8.00% coupon interest rate paid semi-annually) in the FY 2007/08. Out of 250,000 units of issue, 50,000 units were issued to the general public and 200,000 units were privately placed. The par value of debenture was Rs. 1,000, with maturity period of 7 years. Its issue manager was AFCL (Nepal Investment Bank Ltd., Debenture Prospectus, 2008).

Nabil Bank Ltd. (NBL) had issued "NBL Reen Patra 2075" (with 8.5% coupon interest rate) in the FY 2007/08. Out of 300,000 units of issue; 60,000 units were issued to the general public and 240,000 units were privately placed. The par value of debenture was Rs. 1,000, with maturity period of 10 years. Its issue manager was NIDC Capital Market.

Table1.1:

List of Institutions approved for debenture issue during 2007/2008 by SEBON.

S.N.	Name of listed Company/Institution	Issued Amounts (Millions)	Issued Date(BS)	Demand (Times)
1	Nepal Electricity Authority	1500	02/11/2064	1.11
2	Kumari Bank Limited	400	02/02/2065	1.01
3	Himalayan Bank Limited	500	08/03/2065	1.00
4	Nepal Investment Bank Limited	250	12/03/2065	1.00
5	Nabil Bank Limited	300	29/03/2065	1.00

Source: SEBON yearly report 2007/2008

For the development of corporate bond/debenture market in Nepal, the main contributors are as follows: Security Board of Nepal (SEBON), Commercial Banks, Nepal Rastra Bank (NRB), Finance Companies, Private Organizations, Government, Nepal Stock Exchange Ltd. (NEPSE), Brokers, Investors and concerned bodies etc.

For the growth of corporate bond market of any countries require: systematic development in industrial sector, development in share market, positive attitude of general public as well as institutional investors, adequate rules and regulations, availability of secondary market of debentures, cooperative response of control mechanism, and adequate infrastructure facilities etc.

Development and expansion of corporate bond/debenture securities market is essential for the rapid economic growth of countries like Nepal. But, the accelerating pace of growth and development of Nepalese corporate bond/debenture securities market has faced many problems. Thus, these problems should be better recognized and competitive strength of Nepalese corporate bond market should be developed to cope with the existing problems and foreseen problems. Just nine private business institutions have issued debenture till the study is done.

1.2 Focus of the Study

This study is focus on Nepalese corporate bond/debentures market generated from private companies such as Shree Ram Sugar Mills Ltd, Jyoti Spinning Mills Ltd, Bottlers Nepal Ltd., Himalayan Bank Ltd, Nepal investment Bank Ltd etc.

The researcher focuses on these variables:

- Debenture issued by private organization.
- Legal rules and regulation of debentures issue and trading
- Primary and secondary market of debenture
- Information disclosure by private organization

1.3 Statement of Problem

It is found that the countries with developed debenture market are developed countries. As such countries spent heavy investment in research and development activities, many research works regarding to the debt market are conducted. Debt market is still in developing stage in developing countries. In Nepalese context, there are very few research works regarding the debt securities are conducted. In absence of research works on corporate bond/debenture market; it is noticed that there is little concern about debenture market amongst the researchers, concerned experts, investors as well as the corporate bodies and corporations. Nowadays, it has been seen that investors are getting interested to invest on corporate bond/debenture securities too.

Debentures are assumed less risky security of investments with fixed return. They are less risky in the sense that there are very few chances of losing principal and interest even in liquidation of company. They are means of maximizing value of firm. Shortages of the fund for the process of industrial expansion and growth can be accomplished from debenture issue. Instead of having so many opportunities, Nepalese debenture market is not being able to grow smoothly.

Debenture securities are firstly issued by the capital raising companies through primary capital market and later on these securities are negotiable in the secondary capital market. Capital market provides investors good investment opportunities with fair return and instant liquidity with minimum risk of loss.

In one hand corporate bodies are suffering by financial crisis and on the other, investors with surplus money cannot find the appropriate investing scheme. They are unable to bring product innovation introducing new technologies, employing management and technological

experts due to lack of funds. Only some management organizations can utilize this fund by issuing debenture, but there is not proper exercise of debenture in Nepalese capital market.

Though debentures are less risky than the common stock, investors are interested to invest in ordinary shares. This may be due to the unawareness of investors about debenture securities market. Investors take investment decision haphazardly. Very little investors are rational investors but large volumes of investors are not rational. In one hand IT system is not developed and on the other, information disclosure by the companies is not proper. This hinders the growth and development of securities market as well as debenture market. Due to the poor information disclosure, investors are not interested to invest on debenture securities. In spite of higher return from debenture, investors are interested to deposit their surplus money on commercial banks with decreasing return.

In the past, debenture securities issued were under subscribed but thereafter they are oversubscribed. This shows the growing trend of debenture market. Debenture markets have some prospect of growth even if the whole economic growth is in downturn due to political instability. There is high risk to invest in shares but low risk to invest in debentures. Many companies are going to be liquidated due to political instability in the country. In such situation the debenture holders are safer than shareholders and despite this fact investment in share is higher than in debenture. As we know, investment strategies also depend on the investment environment. Such investment strategies are not practiced yet in Nepal.

In this way, it is seen that public concern towards debenture market is growing but there are various problem faced by organization and people concerned to this. This hinders the growth of debenture market. Inadequate legal provisions, limited supply of quality bonds, poor knowledge about securities etc. might be the obstacles in the development of debenture market. Thus, the researchers felt the need to research on this topic- **A study on Corporate Bond: Prospects and Issues in Nepal**. The researcher pays his attention in identification of problems/issues restricting Nepalese corporate bond market and its future growth.

As the research has to be made on some specific problems, they are highlighted hereunder as follows:

(a) What is the position of corporate bond/debenture market in the structure of Nepalese securities market?

(b) What are the main issues/problems of existing corporate bond market in Nepal?

(c) Why the companies are not issuing bonds instead of taking loan in Nepal?

(d) Why the smooth development of corporate bond market is not achieved in Nepal?

(e) What are the prospects of developing corporate bond market in Nepal?

(f) What are the key factors responsible for the hindrance of corporate bond market growth in Nepal?

(g) Why the investors are not interested to invest in debenture securities?

1.4 Objectives of the Study

For the overall development of any countries, development of industrial sector is very necessary. For the development of industrial sector role of acquiring capital plays a vital role as a heart in human being. To employ capital issue of debenture is also necessary. For the issuance of debenture, growth of debenture market is needed and hence we can say that inadequate development of the debenture market is some how responsible for the backward development of the country. Nepal had already taken some steps towards liberalization. In smoothly development of liberalization and privatization process development of debentures market is required.

As Nepal became a member of W.T.O. many challenges and opportunities were seen ahead. So, to face those challenges and grab the opportunities development of debenture market plays the vital role. For achieving optimum capital structure, issue of debenture is necessary. Optimal capital structure of any organization is the strength that helps it to cope with any forthcoming challenges. The main research objective is to identify the prospect and issues of debenture market in Nepal, which contributes in the development of corporate bond/debenture market.

The specific objectives of this study are as follows:

1. To study and evaluate existing corporate bond market situation Nepal,
2. To examine valuation and duration of Nepalese corporate debt securities,

3. To identify and examine issues that hinders the development of corporate bond market in Nepal,
4. To access the prospects of corporate bond market growth and development in Nepal, and
5. To provide suggestions on the basis of study findings.

1.5 Significance of the Study

This study is concerned with the problems and need of developing corporate bond/debenture markets in Nepal. This study tries to explain the theoretical concept, identify the major problems faced by corporate bond/debenture market and analyze its future prospects. This study is helpful for the policy reforms of corporate bond market of Nepal. This study also helps to make clear, better and appropriate legal rules and regulations related to corporate bond market.

The output of this study is very helpful to develop just-creeping-forward Nepalese debenture market. All the concerned parties related to the debenture market of Nepal are benefited. It is hoped that this study highlights present problems and future prospects of debenture market in Nepal. Since only few researches have conducted on the related topic and no research is done mainly to focus on corporate bond/debenture market, this is new in this field. Thus government, investors, private organizations, security board, concerned government bodies, M.B.S students and concerned parties related with private bond market for this study are benefited from this study.

1.6 Limitations of the Study

Each and every research works has more or less limitations. To make this study precise, meaningful and valuable some limitations are made so that objective of this study is achieved within limited time, resource and information.

So the researcher has experience following limitations in this research:

(a) The study is based on secondary data to some extent.

(b) Although number listed companies has reached to 175 end of March, 09, the study mainly covers period from (2003/4-2007/08) and the number of listed company was only 144 at the end of 2007-08.

(c) The study focuses only on corporate bond/debenture market of Nepal.

(d) The study is concerned only on existing securities acts, legal rules and regulations relating to the topic.

(e) The study is mainly focused in debenture issuing companies, investors, some private companies, and related parties within the Katmandu Valley.

1.7 Organization of the Study

For the every research study to proceed systematically and scientifically, proper organization of study should be made. Step by step proceeding in research works helps in the successful completion of the study. So, this study is divided into following five parts:

Chapter I: Introduction

This chapter mainly covers the area how the researcher goes about to write the thesis in the chosen subject "A study on Corporate Bond: Prospects and Issues in Nepal". It covers and describes the areas such as Background of the study, Focus of the study, Statement of problem, Objective of the study, Significance and Limitation of the study.

Chapter II: Literature Review

This chapter mainly covers the area how the researcher has described the concepts and framed his work related to the chosen subject "A study on Corporate Bond: Prospects and Issues in Nepal". The research has also reviewed related literatures. Firstly, it has reviewed literature for conceptual framework, which helps to develop concept about bond market (focusing on corporate bond market), and terms related with it. Then important finance journals, previous master degree level thesis, articles and newspapers related to the research topics were reviewed in the second part. It helps the researcher not only to find out the research gap but also helps to precede this study in a systematic manner.

Chapter III: Research Methodology

This chapter explains how the researcher has presented methodology about conducting thesis on the topic “A study on Corporate Bond: Prospects and Issues in Nepal” and includes research design, nature of data, data gathering procedure, population and sample, period covered, sources of data, statistical procedure, testing of hypothesis, processing and analysis of data.

Chapter IV: Presentation and Analysis of Data

This chapter explains how the researcher has presented the secondary data and primary data with the help of various statistical tools which was described in the earlier chapter. This chapter consists of two main sections. Section 4.1, consists of presentation and analysis of secondary data and section 4.2 consists of presentation and analysis of primary data.

Chapter V: Summary, Conclusion and Recommendations

This chapter summarizes the whole study in three sections. Section first includes the summary of the study. The second section presents the conclusion of the study. The third section includes some recommendations provided to the concerned government bodies, general investors, and corporate sector for the systematic development of Nepalese corporate bond market.

CHAPTER-II

CONCEPTUAL FRMEWORK & REVIEW OF LITERATURE

2.1 Background

Review of literature is an essential part of all studies. It is not only a way to discover what other research in the area of our problem has uncovered, but also helps to avoid investigating problems that have already been definitely answered. It is an integral and mandatory process in research works. It is necessary to show how the problem under investigation relates to previous research within theoretical framework and in such situation the underlying theory needs to be reviewed well.

The research has also reviewed related literatures. Firstly, it has reviewed literature for conceptual framework, which helps to develop concept about bond market (focusing on corporate bond market), and terms related with it. Then important finance journals, previous master degree level thesis, articles and newspapers related to the research topics were reviewed on the second part. It helps the researcher not only to find out the research gap but also helps to precede this study in a systematic manner.

2.2 Conceptual Framework

2.2.1 Debt Securities Market

The market is the number of people-buyers and sellers who have some need or want, have resources and are also willing to participate in the transaction (Koirala, 2056:5). Securities are marketable financial instruments that bestow on their owners the right to make specific claims on particular assets. An individual security provides evidence of either creditor ship or ownership – depending on whether it is a bond or a stock, respectively (Francis, 1988:10). Thus, security markets are mechanisms created to facilitate the exchange of financial assets. On the basis of securities traded, security markets can be divided into primary and secondary markets. Markets in which the government bodies and corporations issue new securities are known as the primary market. After the securities have been issued, they are traded among

the investors in the secondary markets (Bhattarai, 2005:2). The secondary market is the only way to turn securities into cash.

On the basis of life–span of securities, security markets can be divided into money and capital markets. The money market is the market for short–term (one year or less) highly liquid debt securities. Capital markets are the markets meant for long–term (more than one year) debt securities issued by the government or a corporation (Bhattarai, 2005:2). Capital markets exist in order to bring together buyers and sellers of long–term securities, i.e., they are mechanism created to facilitate the exchange of financial assets. Short–term and intermediate term financing sources include trade credit, bank loan, finance company loan, commercial paper, and inventory financing but long–term securities include the issuance of mortgages and bonds.

Efficient markets help to mobilize the financial assets and provide efficient channel to productive investment. Financial markets facilitate the savings and investment process by making it more efficient (Thygerson, 1993:7). Efficient bond markets are characterized by a competitive market structure, low transaction costs, low level of fragmentation, safe market infrastructure and a high level of heterogeneity among market participants (The World Bank, 2001:4). They provide much needed information on prices and volume of transaction (Campbell et.al, 2001:9). Debt securities market provides a variety of securities for investment purpose.

In meeting its need for long–term finance, the firm has a choice between debt and common stock source. **Debt** is anything owed, especially a sum of money that one person owes to another (Kohn, 1999:63). A legal definition is that a debt is all that is due to a man under any forms of obligation or promise. A person who owes a debt is called debtors and a person to whom he owes it is the creditor. Private debt is debt taken by private business organization. Private organization may obtain debt by issuing debt instruments like debenture and bonds, which is called private debt. Loan taken from financial institutions and moneylenders also count as debt.

One of the most important debt financing securities is bond. **Bond** is a special form of contract, which is written or printed evidence of debt owed by a company, local or central government. It is usually issued for the purpose of borrowing money over a 10 to 30 years period. A bond bears the statement that the issuer promises to return to the bondholder the

principle, or the sum borrowed, when the bond matures, or becomes due. Most bonds pay a fixed rate of interest at regular intervals or when the bond matures. Bonds are usually issued in groups. Each bond represents a fraction of the total loan. This makes it possible for many people of moderate means to invest, & also enables a business to borrow vast sums.

There are several kinds of bonds. **Mortgage bonds** are bonds that give the investor a claim on all or part of the company's property. Such a claim, called a lien, is given as security in case the loan is not repaid when due. **Debentures** are bonds that are not protected by a lien. **Collateral trust bonds** are bonds secured by collateral (often the shares or bonds of companies controlled by the issuing company) deposited with a trustee. **Income bonds** usually promise to repay the principal but to pay interest only when earned. The issuing company under definite conditions may redeem **callable bonds** before maturity (The World Book Encyclopedia, 1996:444-445).

The bond market is chiefly over–the–country in nature and today's bond market offers issues to suit any investor. The bond market is normally separated into two issuer segments: domestic (governments and corporate) and international (Fischer and Jordan, 2000:286).

2.2.2 Government Debt Securities Market

The government Treasury issues bonds, notes & bills. All Treasury obligations are of the highest quality because they are backed by the full faith and credit of the government. This feature, along with their liquidity, makes them very attractive (Fischer& Jordan, 2000:286). Government and semi–government institutions required funds for various development activities. When governments spend more than they currently rise in taxes, they must burrow through the debt securities (Kohn, 1999:494). All government securities are fixed income instruments that generally differ in terms of the time to maturity when they are initially issued. Specifically, bills are for less than a year, note are for one to ten year, and bonds are for over ten years (Reilly, 1986:29). The main purpose of issuing securities by the government is to finance their activities. Revenues collected by the government seldom cover expenses and the differences have been financed primarily by issuing debt instruments. New instruments are issued to repay the old debt (Bhattarai, 2005:191). The state & local

governments issue municipal bonds. They are similar to treasury & corporate bonds except that their interest income is exempt from state & local income taxes (Bhattarai, 2005:192).

Developed government securities markets help to increase the tendency of saving and reduce the poverty. Government securities related to collect required amount to fulfill the budget deficit, helps to develop corporate debt securities market also.

2.2.3 Corporate Bond/Debenture Securities Market

A **corporate bond** is a security representing a long–term promise to pay a certain sum of money at a certain time over the course of the loan with the fixed rate of interest payable to the holder of the bond (Hampton, 2001:27). In other words, corporate bonds are similar to other kinds of fixed–income securities in that they promise to make specified payments at specified times and provide legal remedies in the event of default (Sharpe et.al, 2003:475). The term "corporate bond" is usually applied to longer-term debt instruments; generally with a maturity date falling at least 12 months after their issue date (the term "commercial paper" being sometimes used for instruments with a shorter maturity). Sometimes, the term "corporate bonds" is used to include all bonds except those issued by governments in their own currencies, although, strictly speaking, it only applies to those issued by corporations. Restrictions are often placed on the activities of the issuing corporation to provide the additional protection for bondholders (Pinches, 1990:274).

Corporate bonds are the means by which private firms borrow money directly from the public. These bonds are similar in structure to Treasury issues–they typically pay semiannual coupons over their lives and return the face value to the bondholder at maturity. They differ most importantly from Treasury bonds in degree of risk. Default risk is a real consideration in the purchase of corporate bonds (Bodie et.al, 2002:40-41).

If the company goes bankrupt, the bondholders will not receive all the payments they have been promised. The actual payments on these bonds are uncertain, for they depend to some degree on the ultimate financial status of the firm. Bond default risk, usually called credit risk, is measured by Moody's Investor Services, Standard and Poor's Corporation, Duff and Phelps, and Fitch Investors Service, all of which provide financial information on firms as

well as quality ratings of large corporate and municipal bond issues. Each firm assigns letter grades to the bonds of corporations to reflect their assessment of the safety of the bond issue (Bodie et.al, 2002:434-435).

The holders of a company's long–term debt, of course, are creditors. Generally they cannot exercise control over the company and do not have a voice in management. If the company violates any of the provisions of the debt contract, then these holders may be able to exert some influence on the discretion of the company. Holders of the long–term debt do not participate in the residual earnings of the company; instead, their return if fixed. In liquidation, the claim of debt holders is before that of preferred and common stockholders. Depending on the nature of the debt instrument, however, there may be differences in the priority of claim among the various creditors of a company (Van Horne, 2004:589).

Corporate bonds come in several different forms. The basic classifications include collateralized (secured) or uncollateralized (unsecured), senior or (subordinated) junior, callable or non-callable, and convertible bonds (Thygerson, 1993:59).

Corporate bond has high default risk. The market where bonds or debt-securities were traded known as debt market. Corporate bonds/debenture provides capital to the company and the investors get the status of lenders through the debt market (Pandey, 1979:905). Business firms issue many types of debt; however, only large firms issue bonds. Smaller firms deal directly with lenders such as bank and insurance companies (Schall and Haley, 1991:129). Firms can obtain long–term debt financing privately or through public offerings. The main difference between public –issue and private placed debt is that the latter is directly placed with a lender and not offered to the public (Ross et.al, 2002:212). Private sector securities help diffuse stresses on the banking system by matching long–term investments with long–term capital. There is thus a strong public interest in a viable bond market for private sector issuers (Brigham and Houston, 2001:376).

Most corporate bonds are traded in the over–the–counter (OTC) market, so it has little transparency. One reason the bond markets are so big is that the number of bond issues far exceeds the number of stock issues. There are two reasons for this. First, a corporation would typically have only one common stock issue outstanding. However, a single large corporation could easily have a dozen or more note and bond issue outstanding (Ross et.al, 2002:224).

To be successful, private debt markets not only need a disclosure system, a credit–rating system, and bankruptcy laws but authorities should also avoid possible crowding out and statutory restrictions that hinder the development of corporate bond market.

Tax Treatment

Corporate bonds that are original issue discount securities generally have the discount taxed as ordinary income by the federal government. Corporate bonds carrying coupon payments have the coupon taxed as income each year. Furthermore, the investor can wait until the bond is sold and recognize the market discount as taxable interest income at that time.

From the viewpoint of the issuing corporation, debt differs from equity in two crucial respects. First, principal and interest payments are obligatory. Failure to make any payment in full and on time can expose the issuer to expensive, time–consuming, and potentially disruptive legal actions. Second, unlike dividend payments, interest payments are considered expenses to the corporation and hence can be deducted from earnings before calculating the corporation's income tax liability. As a result, each dollar paid in interest reduces earnings before taxes by a dollar, thereby reducing corporate taxes (Sharpe et.al, 2003:475-476).

2.2.4 International Bond Market

The term international bonds is often used to describe several types of bonds with a variety of characteristics relating to issuer or buyer domicile, the location of the primary trading market, and/or currency denomination (Fischer and Jordan, 2000:288). Any bond sold outside the country of the burrower is called an international bond, but it is necessary to distinguish further between two types of international bonds i.e., foreign bonds and Eurobonds.

Foreign Bonds

Borrowers sometimes raise long–term debt capital in the domestic capital market of a foreign country is known as foreign bonds. In issuing foreign bonds, the issuer must abide by the rules and regulations imposed by the government of the country in which the bonds are issued. Compliance may be relatively easy or difficult depending on the country involved.

One of the main advantages of purchasing foreign bonds is the opportunity to diversify internationally the default risk of a bond portfolio while not having to be concerned about foreign exchange fluctuations (Sharpe et.al, 2003:484). For example, if Nepalese corporation issues bond with face value in US dollar, then such bond will be foreign bond.

Euro Bond

The second type of international bond is euro bond, which is denominated in a currency other than that of the country in which it is sold. As the Eurobond market is neither regulated nor taxed, it offers substantial advantage for many issuers and buyers of bonds (Sharpe et.al, 2003:484). For example, bond issued by Nepalese corporation that is denominated in US dollars and sold in India is refunded as a euro bond.

Interest Rate

Interest is the price paid to the lenders for the use of their money. It is calculated as a percentage of the amount borrowed. From a lender's viewpoint, interest is the excess money that is received over the amount that was loaned. But, borrowers are prepared to pay interest so they can make purchases that they could afford if they had to pay for them immediately (The World Book Encyclopedia, 1996:278).

In some Muslim countries, the charging of interest is illegal. But in some countries, interest plays an essential part in commerce. During the middle ages, the Christian Church condemned the charging of interest as a sin. By the 1700's, charging interest had been accepted as a fair business practice (The World Book Encyclopedia, 1996:278-280). The price of debt capital (credit) is called interest. When the price is expressed on a percentage of the amount borrowed, it is called an interest rate (Kaen, 1995:165). Interest rate features are stated in percentage terms of the par values of the related obligation. The contract value is directly related to interest rates.

The most common type of interest is simple, compound and discount interest. The interest rate depends on the relationship between supply and demand. If the demand for loans increases, interest rate rise and fall if the demand for loans decreases. Supply and demand, in turn, are affected by several factors, such as –government policy, inflation, economic

activities, the length of loan and the degree of risk (The World Book Encyclopedia, 1996:278-279).

The bond market is driven by interest rates. In fact, the behavior of interest rates is the single most important force in the bond market. These rates determine not only the amount of current income investors will make, but also the capital gains (or losses) that bond holders will incur. So, it's not surprising that interest rates are so closely followed by market participants, and the bond market performance is generally portrayed in terms of marked interest rates (Gitman and Joehnk, 1990:372).

Different theories of interest are explained differently. Expectation theory deals with long–term interest rates are a geometric average of short–term interest rates while liquidity preference theory explained that, on average, long–term interest rates are higher than short–term interest rates because investors demand a liquidity premium for lending long–term funds. Similarly, markets segmentation theory say, the interest rate that is determined by supply and demand conditions in each market (Fischer and Jordan, 2000:309). In a free economy, interest rates will adjust until the total amount of capital demanded by producers equals the amount that owners of wealth are willing to supply.

2.2.5 Terms Related to Corporate Bond Market

Inflation is a continual increase in prices throughout a nation's economy. The rate of inflation is determined by changes in the price level, an average of all prices (The World Book Encyclopedia, 1996:229). Inflation reduces the purchasing power of consumer and as a persistent and appreciable rise in the general level of prices (Shapiro, 1995:409). A rapid uncontrolled inflation that destroys a nation's economy is called **Hyperinflation**. Economists have various theories that attempt to explain why inflation occurs. Many factors contribute to inflation. One element that is almost always present in an increase in a nation's money supply, which either causes or eases the increase in prices.

The **quantity theory** states that inflation results when the demand for goods & services exceeds the supply. The **Keynesian theory** also focuses on excess demand as the cause of inflation. According to the **cost–push theory**, when business raise their prices in response to

cost increase, cost–push inflation results. Similarly, the **expectations theory** is based on the belief that prices will increase (The World Book Encyclopedia, 1996:230).

The major Weapons against Inflation are as follows

The government's spending & taxing programs reflect **fiscal policy** of a nation. **Monetary policy** is the program a nation follows to regulate its money supply. **Wage and price controls** are set by a government to limit wage and price increases during an inflationary period (The World Book Encyclopedia, 1996:231).

Most bonds promise a fixed nominal rate of interest. The real interest rate that you receive depends on the inflation rate (Brealey & Myers, 2000:670). Thus, the real interest has been obtained by subtracting the inflation rate from the one–year nominal interest rate, which is highly correlated with inflation (Kaen, 1995:160). The coupon interest payments & principal repayment contractually promised to bonds owners are fixed dollar quantities that do not increase with inflation. As a result, if any inflation occurs, bondholders are repaid in dollars that have less purchasing power over real (physical) goods than the dollars that were originally invested in the bonds (Francis, 1986:437).

The effect of Inflation on Borrowers and Lenders

When the actual rate of inflation exceeds the expected rate of inflation, those with commitments to make payments fixed in nominal terms (debtors) gain in real terms at the expense of those to whom payments are to be made (creditors), conversely, when actual inflation is less than expected inflation, creditors gain and debtors lose. This uncertainty in the real return on fixed–income securities that is due to uncertain inflation is frequently referred to as purchasing power risk (Sharpe et.al, 2003:111).

The rate of inflation is measured by percentage change in the Consumer Price Index (CPI) over the period. The consumer price index is calculated by collecting the prices of consumer goods. This index in Nepal is calculated by (NRB) Nepal Rastra Bank. Inflation for a single period can be measured as follows (Bhattarai, 2005:91-92):

$$qt = \frac{CPI_{(t+1)} - CPI_t}{CPI_t} * 100$$

Where,

q_t = Rate of inflation at time t

CPI_t = Consumer price index at time t or at the beginning

$CPI_{(t+1)}$ =Consumer price index at time (t+1) or at the end

And, the annualized inflation rate = (1+ per month q)^{12}

Nominal rates of return are money rates of return that are not adjusted for the effects of inflation. These nominal returns can be divided into the real rate of return (rr) and inflation (q) (Bhattarai, 2005:92).

$$rr = \frac{1+r}{1+q} - 1$$

Where,

rr = Real rate of return

r = Nominal rate of return

q = Rate of inflation

By simplification, we get

r = rr + q + (q) (rr)

The product of (q) and (rr) will often be a tiny value that can usually be ignored with little loss of accuracy.

So, the equation in simplified form is as follows:

r = rr + q

Also, rr = r –q

So, when the inflation rate is low provides an easy way to closely approximate the normal and real rates of return (Francis, 1986:439).

Investments Bankers/Underwriters of Securities

A number of financial institutions are needed for the efficient functioning of a financial market. One of these institutions is an investment-banking firm. Investment banking is a business activity in which a company purchases newly issued securities, such as stocks and bonds, from businesses and governments. Such a company, called an investment bank, and then resells the securities to individual investors in smaller quantities (The World Book Encyclopedia, 1996:324).

Thus, the agent responsible for finding buyer for brand new securities is called the investment banker or underwriters (Francis, 1988:74). The investment banker specializes in underwriting and selling new securities and advising corporate clients (Pinches, 1990:245).

First, the members of the issuing firm and the investment banker hold pre-underwriting conferences, at which they discuss the amount of capital to be raised, the security to be issued, and the terms of the agreements. As and when the investigations are completed an underwriting agreement is drawn up by the investment banker. Investment bankers charge fees commonly referred to as flotation costs, for designing, underwriting and selling securities. The costs of common stocks issues are higher than bond issues. Investment banks buy securities at a slightly lower price than they expect to sell them for. The difference between the purchase and sale prices represents profit (The World Book Encyclopedia, 1996:324). The risk to the underwriter is that the issue may not attract buyers at a positive differential (Jordan and Fischer, 2000:20). Investment bankers also advise businesses in arranging mergers and acquisitions. In other countries investment bankers also provide brokerage services, but in Nepal the issue managers only manage initial public offering and provide financial services (Bhattarai, 2005:9).

Duration of Bond

A bond's duration may be defined as the weighted average number of years until the cash flows occur, with the relative present values of each cash flow used as the weights (Francis, 1988:483). Frederic Macaulay initially introduced the concept of duration in 1938; therefore, it is also called **Macaulay Duration** (Bhattarai, 2005:226). A measure of the average time prior to the receipt of payment is obtained by calculating the bond's duration. This is simply a

weighted average of the lengths of time prior to the payments, using the relative present values of the payment as weights (Sharpe et.al, 2003:554).

Another very important observation about duration is that, it is a function of term, coupon; maturity value, and yield to maturity. Bonds with 'low' coupons and 'long' terms will have duration greater than bonds with 'high' coupons and 'short' terms. Also, as yield to maturity increases; duration will decreases. Duration is directly related to term and inversely related to coupon and yield to maturity (Cheney and Moses, 10th:370). As the bonds with a longer duration will experience more price volatility due to interest rate change, duration is directly related to price volatility. Duration is not only an indication of systematic risk for bonds but also useful in analyzing and managing the risk of bond portfolios.

The duration is also known as sensitivity (elasticity) of bond price with respect to interest rate change. Furthermore, MD (Macaulay Duration) measures the bond interest rate risk (Bhattarai, 2005:229). Duration led to the development of the technique of bond portfolio management known as **immunization**. Specifically, this technique allegedly allows a bond portfolio manager to be relatively certain of being able to meet a given promised stream of cash outflows. Thus, once the portfolio has been formed, it is 'immunized' from any adverse effects associated with future changes in interest rates (Alexander et.al, 2002:429).

Macaulay's duration (MD) is defined mathematically as,

$$D \text{ or } MD = -\sum_{t=1}^{T} PV(C_t) * t$$

$$= \frac{\text{Total of (Present Value * Time)}}{\text{Total Present Value}}$$

Where,

$PV(C_t)$ = Present value of the cash flow at time t

t = Time (Year)

TPV = Total present value

Immunization

The introduction of the concept of duration led to the development of the technique of bond portfolio management known as immunization (Sharpe et.al, 2002:429). Immunization is the

strategy for protecting a bond portfolio against the risk of rising interest rates. Theoretically, this is possible because of the twin effects of rising rates. Immunization will provide a compound rate of return over the immunized period that equals the YTM, regardless of the fluctuations in market interest rates during this period (Alexander et.al, 2003:385-386).

Investors only need to immunize to lock in a desired rate of return when future market interest rates are expected to change. Investors' desires to immunize (or lock in) an interest rate increase as market interest rates approach what are perceived to be peak levels. Bond investors who expect market interest rates to fall in the future will want to buy bonds at peak interest rates for two reasons. First, bonds will enjoy capital gains if their market interest rates decline. Second, locking in a high YTM is most rewarding to investors at a time when market rates are high (Alexander et.al, 2003:388).

Even when corporate bonds are included in the portfolio, immunization does not attempt to reduce any risk other than interest rate risk. Immunization is said to exist if the total value of a portfolio of bonds at the end of some specified planning horizon is equal to the value of the portfolio based on the YTMs that existed when it was purchased.

Immunization is accomplished simply by calculating the duration of the promised outflows and then investing in a portfolio of bonds that has an identical duration. In doing so, this technique takes advantage of the observation that the duration of a portfolio of bonds is equal to the weighted average of the durations of the individual bonds in the portfolio (Sharpe et.al, 2002:429). What does immunization accomplish? According to the theory, if yields rise, then the portfolio's losses owing to the selling of the three–year bonds at a discount after two years will be exactly offset by the gains from reinvesting the maturing one–year bonds (and first–year coupons on the three–year bonds) at the higher rate. Alternatively, if yields fall, then the loss from being able to reinvest the maturing one–year bonds (and first–year coupons on the three–year bonds) at a lower rate will be exactly offset by being able to sell the three–year bonds after two years at a premium. Thus the portfolio is immunized from the effect of any movements in interest rates in the future (Sharpe et.al, 2002:430).

The main problems with immunization that can cause it to work less than perfectly are; default and call risk; multiple nonparallel shifts in a no horizontal yield curve, rebalancing, and many candidates.

Immunization strategies were introduced to eliminate the interest rate risk in a portfolio of bonds. The discussion revealed that duration was not only (i) an insightful measure of the time structure of a bond's cash flows and (ii) a measure of a bond's interest rate risk; it was also (iii) useful in the development of strategies for managing the interest rate risk in a portfolio of bonds.

Yield Curve/Term Structure of Interest Rates

The relationship between short–and long–term interest rates is known as the term structure of interest rates. The term structure of interest rates tells us what nominal interest rates are on default–free, pure discount bonds of all maturities. In other words, the term structure tells us the pure time value of money for different lengths of time (Ross et.al, 2002:231).

The phrase "**yield curve**" is a synonym for the "**term structure of interest rates**". Yield curves describe the yield–maturity relationship for securities of the same default risk. All factors other than maturity must be held constant if the relationship studied is to be meaningful (Van Horne, 2004:534).

The most common shape of the yield curve, particularly in modern times, is upward sloping, but the degree of steepness has varied quite a bit. The three basic components that determine the shape of the term structure are: the real rate of interest, the rate of inflation and the interest rate risk (Ross et.al, 2002:231). The first component mostly influences the overall level of interest rates. But last two components very strongly influence the shape of the term structure.

To determine the shape of yield curve, three theories were developed (Francis, 1986:339). The **liquidity premium theory** asserts that, on average, the yields from long–term bonds should be a little higher than the yields from short–term bonds. This theory maintains that investors pay a price premium (resulting in lower yields) on short maturities to avoid the higher interest rate risk prevalent in the longer maturities. This causes the yield curve to have an upward slope. And, the **segmentation theory** suggests that the market for loans is segmented on the basis of maturity and that the supply and demand for loans within each segment determine its prevailing interest rates. The slope of the yield curve would be

determined by the general relationship between the prevailing rates in each market segment. Low rates in the short– term segment and high rates in the long-term segment cause the yield curve to be sloping upward. The opposite occurs for high short-term rates and low long–term rates. Similarly, the **expectations theory** asserts that long–term yields are the average of the short–term yields. This implies that if all investors expect rates to rise, the yield curve will slope upward; if they expect rates to remain unchanged, the yield curve will be horizontal; if they expect rates to fall, the curve will slope downward.

The various shapes of yield curve may be seen as in figure:

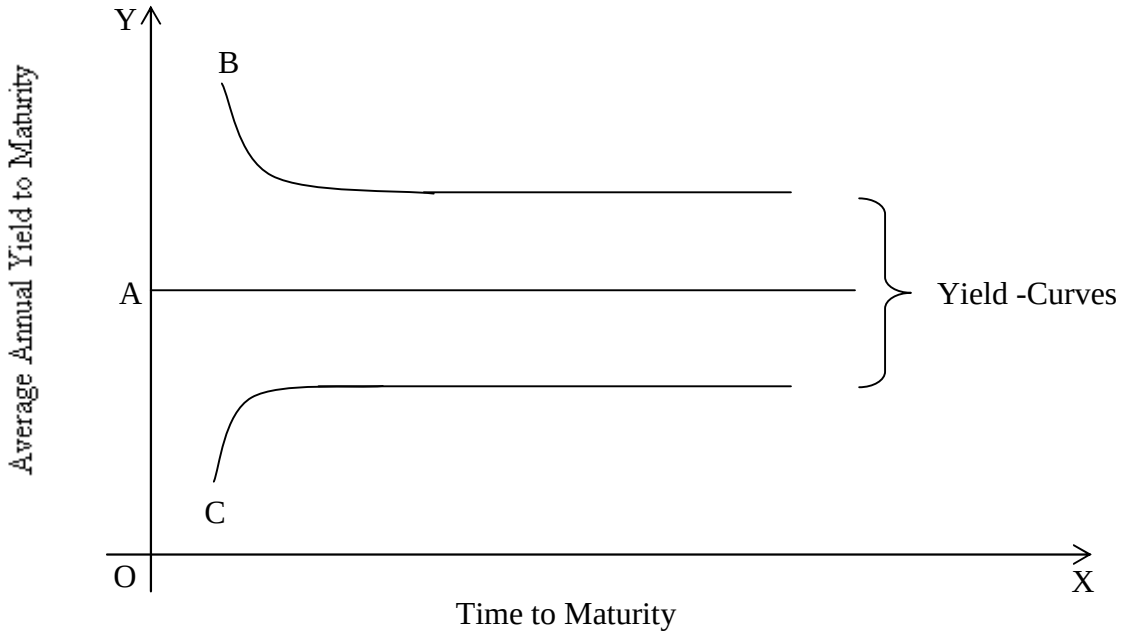


Figure-1: Shape of Yield-Curves

In the figure-1, curve A is called a 'flat curve' indicating approximately equality of short–term and long–term yields. Curve B is a descending curve and shows short–term rates significantly above long–term rates. And, curve C is an ascending curve with short–rates significantly below long–term rates. Yield curve is a visual representation of the term structure of interest rates. When we plot the yield of different maturities bonds, we get different shapes of the yield curve. The slope of yield curves may vary among the countries. While the United States typically has an upward sloping yield curve, in other countries are

commonly inverted, implying a lower annualized yield on long-term debt (www.bloombery.com).

Interest Rate Swaps and Bond Swaps

Although their names sound similar, “interest rate swaps” and “bond swaps” are unrelated approaches to dealing with interest rate risk.

Interest Rate Swaps

A **swap** is a contractual exchange of two different cash flows between two counterparties. The counterparties could be two corporations, two finance companies, two banks, or any two borrowers. The relative financing advantage of each of the counterparty in different financial markets can produce an opportunity for both to reduce their costs via an appropriate swap (Alexander et al, 2003:353).

Interest rates swaps are a new financial product that originated in the early 1980s.Swaps are used by borrowers seeking to reduce their borrowing costs or investors attempting to enhance asset yields. Interest rate swaps are off–balance sheet transactions used to hedge or restructure the exposure of balance sheets to interest rate risk.

The structure of a swap is determined when two borrowers agree to make a series of payments to each other on specified payment dates. Swaps usually involve no exchange of principal. Interest rate swaps are not speculative but some default–risk is involved. Major bank can quote swap prices by deciding on an interest rate swaps structure. The minimum face value of a swap is $5million.The larger the amount above this standard minimum, the more negotiating power an aspiring swapper has in dealing with a swap bank. The dollar amounts and maturity dates of swaps are easily customized to the swapper’s needs. There is a deep secondary market for swaps that facilitates liquidating or neutralizing the position. A swap can be wiped out by doing a mirror swap to offset the economic effect of the original swap.

Bond Swaps

A bond swap involves the purchase and sale of equal amounts of similar bonds undertaken in an effort to increase a bond portfolio's rate of return. The bond swaps are usually speculative (Alexander et.al, 2003:356). The bond that is to be sold (TBS) if the swap is consummated is called the TBS–bond and the bond, which is to be purchase (TBP) is called the TBP–bond.
The four most common types of bond swaps are substitution swaps, inter-market spread swaps, rate anticipation swaps and pure yield–pick up swaps.

a) The Substitution Swap

The substitution swap involves bonds, which are perfect substitutes (in theory, at least) in every respect except their prices (or equivalently, their yields–to–maturity). All bond swaps are based on the law of one price, which states that the same good cannot sell at different prices.
Bond swaps are undertaken because some bond investor expects to profit in the future as the price of the TBP–bond is realigned to equal the price of the TBS–bond.

b) Inter-market Spread Swap

This swap involves a TBS–bond and a TBP–bond that differs in one significant respect. The swapped bonds may have different coupon rates but be issued by the same issuer and be similar in every other way.

c) Rate Anticipation Swap

A bond investor who foresees a change in the level of interest rates may consider a rate anticipation swap. Therefore, long–term bond should be sold and swapped for holding of cash or short–term bonds in order to avoid capital losses from the anticipated increase in the level of interest rates.

d) Pure Yield–Pickup Swap

It is a simple transaction based on no expectation of market changes, so the risks associated with erroneous forecasts are absent. This swap is accomplished by selling a bond that has a given YTM and simultaneously buying a similar bond which offers a higher YTM.

2.2.6 Key Characteristics of Bonds

Debt is anything owed, especially a sum of money that one person owes to another. Debt securities do not have the same contractual features. Although all bonds have some common features which are:

a) Par Value

The par value, or face value, or principle, of a bond indicates the amount of money that must be repaid at maturity (Cheney and Moses, 10th:330). Typically, the par value is $1,000.

b) Coupon

The coupon is established at the time the bond is issued and represents the nominal interest rates that will be paid. It is stated as an annual percentage rate, which can be applied to the denomination or face value of the bond to calculate the dollar interest. Since interest is generally paid semiannually, the issuer pays only one-half of the coupons each semiannual period. Traditionally, the coupon is constant over the life of the bond. Recently, however, some bonds have begun to "index" coupon to inflation or to market interest rates (Cheney and Moses, 10th:331). In case of zero coupon bond, a bond that pays no annual interest but it is sold at discount from face value, much like Treasury bills.

c) Maturity Date

Bonds generally have a specified maturity date on which the par value must be repaid. Most bonds have original maturity (the maturity at the time the bond is issued) ranging from 10 to 40 years, but any maturity is legally permissible (Madura, 2000:511). Of course, the effective maturity of a bond declines each year after it has been issued.

d) Call Feature

Most corporate bonds contain a call feature, which gives the issuing corporation the right to call the bonds for redemption. The earliest call date and call price are specified when the bonds are issued. The call feature generally states that the company most pays the bondholders an amount greater than the par value if they are called.

The additional sum is termed as a call premium. The investor should always remember that the call feature is an advantage to the issuer and can be exercised at the issuer's discretion (Cheney and Moses, 10th:330).

e) Registration

Bonds can be either registered or bearer bonds for interest and/or principal payments. The issuer maintains records on the ownership of registered bonds, but the holder is assumed to be the owner of bearer bonds. The transfer of securities will be possible only after registering the name of the new holders and canceling the name of the original holders.

f) Indenture

The indenture is the written agreement between the corporation (the borrower) and the lender detailing the terms of the debt issue (Ross et.al, 2002:213). Bond issuers always promise in their indenture contracts to pay the trustee to act as a "watch dog" for the bond investors' interests. The provisions written into a bond issue's indenture affect the bond's creditworthiness (or investment quality rating) (Francis, 1988:15-16).

g) The Trustee

The trustee, usually some independent bank, ensures that the firm keeps its promises and obeys the restrictions of the contract. The trustee is the third party with whom the bond contract is made, and it is the trustee's job to make sure that the issuer lives up to the provisions of the indenture. Because the individual bond holder are usually not in a position to (1) continually observed the issuing the corporation to make sure that the company does not violate its agreements and (2) take substantial legal action if the firm does violet them, the trustee is paid to assume these responsibilities (Francis, 1988:15).

h) Collateral

The type of collateral is important for bonds that have probability of default. The investors must be cautions about the assets that are pledged as collateral in the event of default of regular payment of interest and principal. Variation in collateral lead to several types of bonds (Cheney and Moses, 10th:332).

1) Secured Bonds

Bonds that have specific assets pledged as collateral are secured bonds. Mortgage bond is an example.

2) Unsecured bonds

Bonds without specific collateral are unsecured except for the general creditworthiness of the issuer. Debentures or subordinated debentures are example of this type of security.

3) Sinking Fund bonds

These bonds are issued by corporations that wish to repay a bond issue systematically by setting aside a certain amount each year. The payment, usually a fixed annual dollar amount is made to the sinking fund agent, who is usually the trustee named in the indenture. This third person then uses the money either to call the bonds annually at some call premium or to purchase them on the open market if they are selling at a discount below their face value (Francis, 1988:16). Many sinking funds begin not at the time of insurance but after a period of 5or 10 years. However, the sinking –fund provision may benefit the bondholder (Van Horne, 2004:591).

4) Other Features

Some other important features are convertible bond (a bond that can be converted at the option of the holder into common stock of the same corporation),warrant(is an option to buy common stock ,often used to "sweeten" a debt issue for the investor),income bond(a bond that pays interest only if the earnings of the firm are sufficient to meet the interest obligations),and purchasing power bond(a bond that has interest payments based on an inflation index so as to protect the holder from inflation).

2.2.7 Buying and Selling Rules of Securities

Buying security with view of generating capital profit is very important investing decision. In bear market, securities prices fall down. So, that it should buy securities. But, bull market refers to that market where security prices maximum occurs. It should sell securities in bull market.

There is also another alternative approach regarding buying and selling of securities, considering expected and required rate of return. When expected rate of return is greater than required rate of return, securities are under priced. Hence buying decision of securities is preferred. If expected rate of return is less than required rate of return, securities are over priced. Hence it should sell. When expected rate of return is equal to required rate of return, there is appropriate pricing of securities. Thus, no trading of securities is preferred.

Table 2.1 :
Buying and Selling Rules of Security

S N	Condition	Pricing	Decision
1	Required rate of return > Expected rate of return	Overpriced	**Sell**
2	Required rate of return < Expected rate of return	Under priced	**Buy**
3	Required rate of return = Expected rate of return	Exactly priced	**No trading**

2.2.8 Valuation of Bond

Bonds are long–term debt instruments used by businesses and governments to raise large sums of money, typically from a diverse group of lenders. Investing in bonds requires computation of their value to identify the mis–pricing and the construction of portfolio. The value of a bond is the sum of the present value of the periodical interest payments and the par value that is due to at the end of bond life. The bond value (V_b) is a function of several factors as presented below:

$V_b = f (F, P_m, N, I, K_b)$

Where,

F = Face value or par value

N = Maturity period

I = Coupon interest rate

P_m = Market price of bond

K_b = Market interest rate or opportunity rate

f = Function

There are three types of bonds; (i) Ordinary bonds, (ii) Callable bonds, and (iii) Perpetual bonds. Valuation of these different types of bonds is as follows:

(i) Ordinary Bonds

An ordinary bond is the one whose life is present generally between 5 to 20 years.

The valuation formula for such bond can be expressed as follows:

$$V_b = \sum_{t=1}^{n} I \frac{1}{(1+k)^t} + F\left(\frac{1}{1+k}\right)^n$$

V_b = Present value of bond

I_t = Interest payments during 't' periods

k = Market interest rate

F = Maturity value or face value

t = Time periods

n = Number of time periods

(ii) Callable Bonds

A callable bond is not much different from the ordinary bond except that the issuer keeps the right to redeem it at a specified date or any time before the maturity. Its valuation model can be expressed as follows:

$$V_b = \sum_{t=1}^{m} \frac{I_t}{(1+k)^t} + \frac{P_c}{(1+k)^m}$$

Where,

m = Number of periods to call period

P_c = Call price

(iii) Perpetual Bonds

A perpetual bond is the one, which is never redeemed by the issuer, but the issuer pays interest for an indefinite period. The issuer is never required to pay the par value to the bondholders.

For an infinite series, the value of bond may be expressed as follows:

$$V_b = \frac{I}{K}$$

Where,

I = Interest payment each year

K = the appropriate interest rate on bond

2.2.9 Bond Returns Measures

An investment may be defined as the current commitment of funds for a period of time to derive a future flow of funds that will compensate the investing unit for the time the funds are committed, for the expected rate of inflation, and also for the uncertainty involved in the future flow of funds (Reilly,1986:5). An investor may obtain two kinds of income from an investment in a bond –income from price appreciation (or losses from price depreciation), sometimes capital gains (or losses). This section assumes that the price or investment value of the bond is given and uses this value to compute a rate of return. The main bond return measures are: current yield, yield to maturity, holding period return, and expected rate of return etc.

Current Yield

A bond return measure that is popular with investors and is provided on a daily basis in the Wall Street Journal is the current or coupon yield. As the name implies, this yield is based entirely on the relationship between the coupon rate and current price (Cheney and Moses, 10^{th}:354).

Mathematically it can be expressed as,

$$I_c = \frac{C}{P_o}$$

Where,

I_c =Current or coupon yield

c =Annual dollar coupon

P_o =Current market price

This return measure is only a partial indication of the return. A bond currently selling at its face value will have a yield to maturity equal to the coupon rate. At any other price, however, the current yield is different from the yield to maturity.

Yield to Maturity (YTM)

Investors may also like to know the rate of return they earn on their investment. The rate of return on bond is termed as **yield to maturity** (YTM) and is synonymous to the **effective interest rate** or the **internal rate of return** that is commonly used in capital budgeting. The YTM can be found if the price and the value of a bond are known. The YTM is the discount rate that equates the present value of all the bond's expected future cash flows with the current market price of the bond (Alexander et. al, 2003:368).

In computing the yield to maturity, several important assumptions are made (Cheney and Moses, 10th:354):

(a) The bond will be held to maturity.
(b) All cash flows (interest and principal) will occur as indicated in the indenture (i.e., the issuer will not default on the contractual obligation).
(c) The bond will not be called or redeemed by the issuer before specified maturity date.
(d) Coupon receipts will be reinvested at a rate of return equal to the yield to maturity.

Yield to Maturity can be calculated by

(i) Trial and Error Method or Interpolation Method

YTM can be calculated by using a rate that makes the value of a bond equal to the price. Mathematically it can be expressed as,

The market price of debt,

$$P_o = \sum_{t=1}^{n} \frac{\text{Interest}}{(1+\text{YTM})^t} + \frac{\text{Maturity Value}}{(1+\text{YTM})^n}$$

(ii) Approximation Formula Method

Approximate YTM can be calculated as:

$$AYTM = \frac{I + \left(\frac{F-P}{N}\right)}{\frac{F + 2P}{3}} * 100$$

Where,

F=Face value of bond

P=Price of bond

N=Number of years of bond life

I =Interest payment per year

Yield to Maturity for Callable Bonds

Bonds issued having a call feature allow the issuer to redeem the bonds prior to maturity. Thus, the issuer can take advantage of lower yields by calling outstanding bonds and refinancing at lower rates.

To reflect the impact of a possible call on the yield, the yield to first call should be calculated in addition to the yield to maturity. Using semiannual compounding, it can be expressed as:

$$V_O = \frac{C}{2}\left\{\frac{1 - \frac{1}{\left(1 + \frac{i_{call}}{2}\right)^{2T}}}{\frac{i_{call}}{2}}\right\} + \frac{\text{Call Price}}{\left(1 + \frac{i_{call}}{2}\right)^{2T}}$$

Where,

V_o =Intrinsic value of the bond

C =Annual dollar coupon

i_{call} =Yield to first call

T =Length of time to first call date, in years

Call price =Price that issuer will pay at first call date

The probability of a call increases during periods of declining yields, especially when the yield to maturity declines below the coupon yield.

Holding Period Return

A holding period or single period of return is simply the total return an investor would earn during the period of holding securities (Bhattarai, 2005:87). Investors are often concerned about bond returns over a particular holding period. If the holding period was in the past, the return is a historical, or ex–post, measure. The investor concerned with a future holding period calculates the expected or ex–ante return.

Recently, attention has moved from the traditional measures of bond returns to the holding period return (HPR). This shift is consistent with the idea that more active bond investment strategies may be desirable. These strategies may be for relatively short periods of time as opposed to long–term buy–and –hold strategies.

For bonds with coupons, the HPR can be calculated as (Cheney and Moses, 10^{th}:357),

$$HPR_t = \frac{P_{t+1} - P_t + I_{t+1}}{P_t}$$

Where,

HPR_t =Holding period return for period‘t’

P_t =the beginning or purchase price of the bond

P_{t+1} =the ending or selling price of the bond

I_{t+1} =the coupon or interest received for period‘t’

This equation assumes that interest will be received at the end of holding period‘t’. This assumption is correct for bonds because they are sold with accrued interest due to the seller.

Expected Rate of Return

In analyzing various bonds for investment, the analyst must consider the expected rate of return that each bond can provide. A more detail analysis is needed when a bond has default probabilities, will not be held to maturity, and when yields in general may change over the holding period (Cheney and Moses, 10th:358).

The return, which we expect in the future, is the weighted average rate of return, using the probability of each rate of return as the weight.

Mathematically it can be expressed as follows (Cheney and Moses, 10th 359):

$$\text{Expected HPR} = \Sigma(\text{HPR}) = \sum_{i=1}^{n} (\text{Probability})_i * (\text{HPR})_i$$

$$= P_1 HPR_1 + P_2 HPR_2 + \ldots\ldots\ldots + P_n HPR_n$$

Where,

E(HPR)	=Expected rate of return or expected holding period return
$(\text{Probability})_i$	=Probability of event i
$(\text{HPR})_i$	=Rate of return or holding period return at event 'i'
n	$=n_{th}$ event

2.2.10 Types of Bonds Financing

Fixed–rate, long–term debt instruments are of various kinds. With the exception of income bonds, all are widely employed (Van Horne, 2004:593). Some of them used by corporations are:

(a) Debentures

The term debentures usually apply to the unsecured bonds of a corporation. Investors look to the earning power of the corporation as their security as these bonds are not secured by

specific property. Although the bonds are unsecured, debenture holders are protected by the restrictions imposed in the indenture. Because debenture holders must look to the general credit of the borrower to meet principal and interest payments, only well established and creditworthy companies are able to issue debentures.

(b) Subordinated Debentures

Subordinated debentures represent debt that ranks behind debt senior to these debentures with respect to claim on assets. In the event of liquidation or reorganization, holders of subordinated debentures cannot be paid until all senior debt, as named in the debentures' indenture, has been paid (Weston and Brigham, 1996:811). The existence of subordinated debentures may work to the advantage of senior holders, because senior holders are able to assume the claims of subordinated debenture holders. Because of the nature of the claim, a straight subordinated debenture issue has to provide a yield higher than a regular debenture issue in order to be attractive to investors.

(c) Mortgage Bonds

A mortgage bond issue is secured by a lien on specific assets of the corporation –usually fixed assets. The specific property securing the bonds is described in detail in the mortgage, which is the legal document giving the bondholder a lien on the property. If the corporation defaults in any of the provisions of the bond indenture, the trustee, on behalf of the bondholders, has the power to foreclose i.e. the trustee takes over the property and sells it, using the proceeds to pay the bonds. Mortgages can be first, second or subsequent, each with its respective subordinated claim to the assets of the firm in case it defaults (Francis, 1988:17).

(d) Income Bond

Income bonds have a stipulated coupon and interest payment schedule, but the interest is only due and payable if the company earns the interest payment by a stipulated date. If the required amount is not earned, the interest payment does not have to be made, and the firm cannot be declared bankrupt (Reilly, 1986:30).If the company does not generate the earning, interest may be accumulative. However, the cumulative obligation usually is limited to no more than three years. As these bonds are not popular with investors, they have been used principally in reorganizations.

(e) Equity–Linked Debt

Sometimes the investor in the debt instruments of a company is given an option on common stock. With **debt +warrants**, the debt holder has an option to purchase the common stock of the company and he or she continues to hold the debt instrument. Warrants are often employed as "sweeteners" to a public issue of bonds or debt that is privately placed. As a result, the company should be able to obtain a lower interest rate than it would otherwise.

A **convertible bond** is one that may be exchanged, at the option of the holder, into a certain number of shares of common stock of the corporation. Such bonds are considered very attractive, especially when issued by growth firms. In return for this attractive feature, a convertible bond normally requires the firm to pay less interest than would be paid for a comparable nonconvertible bond (Hampton, 2001:28).

With **exchangeable debt**, the debt can be exchanged into shares of common stock of another corporation. This method of financing is applicable to companies that have stock holdings in another company.

2.2.11 Cost of Debt Capital

Interest payable on debt capital is known as the cost of debt. Corporate bond/debenture securities may be issued at par, or at discount, or at premium. Company should incur some expenditure for issuing such as preparation prospectus, advertising, and brokerage costs etc. Cost of debt increases due to flotation cost.

The explicit cost of debt tends to be the least expensive of the three sources we consider for, two reasons. First, from the investor's standpoint, there is a fixed legal claim; bondholders have greater security than preferred or common stockholders. On a risk-return basis, we would expect bond investors to demand less return than stockholders which they do. Second, the tax status of interest also makes debt cheaper than other sources, as long as the firm is profitable.

Mathematically, cost of debt can be calculated as follows:

$$\text{Cost of debt } (k_d) = \frac{I}{NP}$$

Where,

k_d = Cost of debt before tax
I = Interest
NP = Net processed amount actually available

Tax saves interest expenditure of issuer. So that cost of debt after tax may be :

$$\text{Cost of debt after tax } (k_{dt}) = k_d (1-t)$$

Where,

t = Tax rate

2.2.12 Advantages and Disadvantages of Bond Investing

Noting that investors have sometimes been reluctant to invest in bonds, Burton Malkiel has commented:

Bonds are the Rodney Dangerfield of financial investments. They don't get much respect. They were defined in an early 1980s parody of the Wall Street Journal as "fixed–rate instruments designed to fall in price".

The pessimistic view of bonds by many investors in the late 1980s is based on their performance during the 1960s and 1970s. Over the past 40 years, common stocks provided an annual compounded rate of return of approximately 10 percent while high–grade corporate returned approximately 5 percent.

The poor performance of bonds is primarily due to unexpected inflation during the period 1950 –1985. High and unexpected inflation rate cause interest rates to change and bond price volatility to increase.

Despite the poor performance of bonds, Malkiel cautions that you should not "invest with a rearview mirror." Investors and the bond markets have likely learned a hard lesson about

underestimating the rate of inflation and the consequences to bond investors. Because investors are now extremely cautious about unexpected inflation, "bonds are priced more attractively than they were in the past."

Possible risk factors for bonds in the 1990s include having the bond called by the issuer if interest rates decline; possible default if a serious recession occurs; and the large federal budget deficit.

Despite these risk factors, Malkiel believes "bonds deserve a place in everyone's portfolio." In addition, he comments, "I still believe that bonds will provide reasonable generous real rates of return over the next decade–and with less risk than for roughly similar returns in stocks" (Burton, 1989:180-85).

2.3 Historical Development of Corporate Bond/Debenture Securities Market in Nepal

Nepal's capital market is very lean in providing investment alternatives to the investors. Among possible various investment alternatives like common stocks, government bond, corporate bond, preference share, right, option, warrants, convertible etc, very few are available for Nepali investors. It can be said that the present capital market is almost monopolized by the equity shares. For those investors, who are risk seeker and want to invest in the variable income securities, the present capital market offers sufficient alternatives but for those investors who are risk averse and want to invest in the fixed income securities, there are very few avenues available (Bhattarai, 2005:192).

"Securities Marketing Center" (SMC) was established in 1976 to develop corporate securities market in Nepal. Before the establishment of SMC, there were no institutional arrangements to undertake and to manage the new issue of securities. Initial public offering had to be made on as per the provision of companies Act. 1963, was not adequate and relevant. The Act had not ever included preference share as corporate security. Only companies Act.1994 recognized it as a corporate security.

SMC started secondary trading of securities in 1981, which was restricted to government bonds till 1983, the concept of well-structured secondary market had not involved in Nepal.

No separate Act existed to regulate the trading of securities. The securities exchange Act. 1983 was enacted in 1983. The Act restricted the exchange of unlisted securities. SMC was renamed as Securities Exchange Center (SEC) in 1984. SEC was the only one institution concerned in managing and operating primary and secondary markets of long-term government and corporate securities.

A need to develop different institutional mechanisms relating to securities market was strongly felt to avoid potential conflict of interest between the services provided. The first amendment of the securities exchange Act. 1983 in 1993 paved the way for the structuring of securities market in Nepal, which led to the establishment of Securities Board of Nepal (SEBON) in 1993. With a mandate to regulate and develop the securities markets, SEBON started to register securities and grant approval for issuing securities to the public in 1993. The first amendment in the Act also led to conversion of SEC into Nepal Stock Exchange Ltd. (NEPSE) in 1993 with the objective of operating and managing secondary transactions of securities. The initial efforts led to the opening of a full-fledged stock exchange in January 13, 1994.

The second amendment in securities exchange Act.1983 was made in 1997. This amendment made provision for registering securities businesspersons in SEBON. As per the provision of the second amendment, SEBON provided licenses to the securities businesspersons in 1997. The amendment made mandatory provisions for the listed companies to submit annual and semi-annual reports to SEBON. This amendment also required securities businesspersons to submit annual reports incorporating the securities transactions carried out by them to SEBON.

In the context of establishing proper identification of the investors for the development of fair and transparent securities markets, SEBON has made amendment in its Securities Registration and Issue Approval Guidelines, 2000 in 2005 and add new provision which requires the investors to submit along with the application for the buying of securities in the public offering, the photocopy of their citizenship certificate or the identification with photograph, issued by HMG/N attested by themselves.

Presently, there are twenty-four stockbrokers, seven issue managers, two issue managers and securities dealers, one stock exchange and one hundred twenty-five listed companies in the Nepalese securities market.

Bond is the other instrument providing fixed income to the investors and involves lower risk than the securities that yield variable income. Also the bond market in Nepal is very lean. Very few companies have issued bond in the market. Just seven private business organizations have issued bond or debenture till 2006. Though, Nepalese government is more forward in exercising debt instrument, only countable number of corporate sector are found exercising debt instrument.

Nepal does not have a long history of corporate debt securities market. Only few (i.e. Fifteen) corporate debt securities have been issued prior or after the enactment of Securities Exchange Act 1983, till now. Corporate bond/debenture securities issued by private organizations in the Nepalese capital markets are shown with their characteristic features as follows:

i. First time in the Nepalese history, Bottlers Nepal had issued 18% debenture of Rs.5 million (with par value Rs.1, 000) in the FY 1986/87.It was slightly over subscribed (i. e. Rs.5.13 million) and was redeemed at maturity.

ii. Secondly, Jyoti Spinning Mills Ltd. had issued 14% bond of Rs.20 million (with par value Rs.1, 000) in the FY 1992/93. It was managed by NIDC (Bhattarai, 2005:193). The primary issue of debt securities disappeared for more than a decade.

iii. Then thirdly, Shree Ram Sugar Mill's Ltd. had issued the debenture as "14% convertible and redeemable debenture" in the FY 1997/98. The Mill's issued debentures worth Rs.93 million (with par value Rs.1, 000) and managed by NIDC and charge 0.50% of total collected amount as flotation cost. This debenture was heavily undersubscribed (i.e.17.13 million) and there was no conversion ratio (Shree Ram Sugar Mill's Ltd., Debenture Prospectus, 1997).

iv. Himalayan Bank Ltd. had issued Rs. 360 million "8.5% Himalayan Bank Ltd. Debenture–2066" (with par value Rs. 1,000 and semi-annual interest payment) in the FY 2001/02. The bank decided to distribute debentures through the private placement

with the amount of Rs.260 million and through the issue–managed company of Rs.100 million issues was managed by the Nepal Merchant Banking and Finance Limited with charged of 0.54% of total amount. It was heavily over subscribed (i.e.141.7 million). Its issue was managed by NMB (Himalayan Bank Ltd., Debenture Prospectus, 2002).

v. Nearly one and a half year after HBL bond, another big Nepali bank, Nepal Investment Bank Ltd. (NIBL) has issued Rs. 300 million "Nepal Investment Bank Bond–2010" (with 7.5% coupon interest paid semi-annually) in the FY 2003/04. Out of 300,000 units of issue (with par value Rs. 1,000), 100,000 were issued to the general public and 200,000 units were privately placed. Though the interest rate offered by NIBL was one percent lower than that in HBL's bond (where it was 8.5% with semi-annual payment arrangement), it had good chances of being oversubscribed. Its issue manager was AFCL (Nepal Investment Bank Ltd., Debenture Prospectus, 2005).

vi. Everest Bank Ltd. had issued debenture of Rs. 300 million (with 6% coupon interest paid semi-annually) in the FY 2004/05. The par value of debenture was Rs. 1,000 with maturity period of seven years (i.e., redeemable after 7 years). Out of 300,000 units of issue 50,000 units were issued to the general public and 250,000 units were privately placed. EBL bond issue date was 2062/01/07. Its issue manager was CIT (Everest Bank Ltd., Debenture Prospectus, 2005).

vii. Bank of Kathmandu Ltd. had issued Rs. 200 million "Bank of Kathmandu bond, 2069" (with 6% coupon interest paid semi-annually) in the FY 2004/05. Out of 200,000 units of issue, 50,000 units were issued to the general public and 150,000 units were privately placed. The par value of debenture was Rs. 1,000, with maturity period of seven years. Its issue manager was NMB (Bank of Kathmandu Ltd., Debenture Prospectus, 2005).

viii. Again Nepal Investment Bank Ltd. has issued "Nepal Investment Bank Bond-2070" (with 6% coupon interest rate paid semi-annually) in the FY 2005/06. Out of 250,000 units of issue, 80,000 units are issued to the general public and 170,000 units are privately placed. The par value of debenture is Rs. 1,000, with maturity period of 7 years. Its issue manager is AFCL (Nepal Investment Bank Ltd., Debenture Prospectus, 2006).

ix. Nepal Industrial and Commercial Bank Limited has issued Rs. 200 million "NIC Bond–2070" (with 6% coupon interest paid semi-annually) in the FY 2005/06. Out of 200,000 units of issue (with par value Rs. 1,000), 50,000 units are issued to the general public and 150,000 units are privately placed. Its issue manager is AFCL (Nepal Industrial and Commercial Bank Ltd., Debenture Prospectus, 2006).

x. Nepal SBI Bank Ltd. has issued Rs. 200 million "6% Nepal SBI Bank Debenture-2070" (with maturity period of 7 years and semi-annual coupon payment) in the FY 2005/06. Out of 200,000 units of issue, 50,000 units are issued to the general public and 150,000 units are privately placed. Its issue manager is CIT (Nepal SBI Bank Ltd., Debenture Prospectus, 2006).

xi. Nepal Investment Bank Ltd. ($NIBL_3$) again had issued "Nepal Investment Bank Bond-2071" (with 6.25% coupon interest rate paid semi-annually) in the FY 2006/07. Out of 250,000 units of issue, 50,000 units were issued to the general public and 200,000 units were privately placed. The par value of debenture was Rs. 1,000, with maturity period of 7 years. Its issue manager was AFCL (Nepal Investment Bank Ltd., Debenture Prospectus, 2007

xii. Kumari Bank Ltd. (KBL) had issued "KBL Bond -2065" (with 8.00% coupon interest rate) in the FY 2007/08. Out of 400,000 units of issue, 80,000 units were issued to the general public and 320,000 units were privately placed. The par value of debenture was Rs. 1,000, with maturity period of 7 years. Its issue manager was Nepal Merchant Bank and Finance Ltd.

xiii. Himalaya Bank Ltd. (HBL) had issued "HBL Bond 2072" (With 8 % coupon interest rate) in the FY 2007/08. Out of 500,000 units of issue..… units were issued to the general public and …… units were privately placed. The par value of debenture was Rs. 1,000, with maturity period of 7 years. Its issue manager was AFCL Ltd.

xiv. Nepal Investment Bank Ltd. ($NIBL_4$) again for the fourth time had issued "Nepal Investment Bank Bond-2072" (with 8.00% coupon interest rate paid semi-annually) in the FY 2007/08. Out of 250,000 units of issue, 50,000 units were issued to the general public and 200,000 units were privately placed. The par value of debenture was Rs.

1,000, with maturity period of 7 years. Its issue manager was AFCL (Nepal Investment Bank Ltd., Debenture Prospectus, 2008).

xv. Nabil Bank Ltd. (NBL) had issued "NBL Reen Patra 2075" (with 8.5% coupon interest rate) in the FY 2007/08. Out of 300,000 units of issue; 60,000 units were issued to the general public and 240,000 units were privately placed. The par value of debenture was Rs. 1,000, with maturity period of 10 years. Its issue manager was NIDC Capital Market.

This means, more of such bond issues can be expected in the future, particularly from the banks to meet their higher capital requirement under Nepal Rastra Bank directives (Bhattarai, 2005:193-194).

2.4 Review of related Journals and Articles

As there is not sufficient publication regarding corporate bond/debenture market in Nepal, journals published from abroad are reviewed to understand present debt market of Nepal. Comparing Nepalese corporate bond/debenture market with international debt market helps to identify issues (problems) and prospects on the one hand, and helps in recommending appropriate measures to overcome present problems on the other.

Some journals and articles found to be important are reviewed as follows:

YanAlice Xie, Sheen Liu, and Chunchi Wu (2005) have studied on "Duration, Default Risk, and the Term Structure of Interest Rates." They have examined the interactive effect of default and interest rate risk on duration of defaultable bonds. Their results suggested that the duration measure must be adjusted for the effects of default risk and stochastic interest rates to achieve an effective bond portfolio immunization. They have examined the duration of defaultable bonds by taking into account the interactive effects of default intensity and interest rates. They found that duration estimates of A, BBB, and longer term AA bonds (refer to AA bonds with maturities from 6 to 10 years) are shorter than those of default-free bonds. However, a further analysis had shown that the relation between default intensity and interest rates was time dependent and varies with the business cycle. These finding have

suggested that in empirical application the duration measure should take into account the effect of default and the time-dependent relation between default intensity and interest rates.

They have developed a unified framework to show that although callability always shortens duration, the default-risk adjustment may either lengthen or shorten it, depending on the relation between changes in the issuer's credit quality and changes in the risk less term structure. Using a unique database of Canadian corporate bond indexes from 1986 to 1997, they found that the default- and call-adjusted duration was lower than the Macaulay duration over their sample period.

Their study differed from that of previous studies in several aspects. First, instead of assuming a flat yield curve, their model incorporated the effect of term structure of interest rates on duration by adopting a stochastic mean-reverting interest rate process. Second, they have employed a reduced-form approach to derive a closed-form duration model for defaultable bonds by allowing for the effect of stochastic interest rates.

They have found that the stochastic interest rate process affects the duration measure and that the duration for defaultable bonds could be shorter or longer than their default-free counterparts, depending on the relation between default intensity and interest rates. If the relation was negative, the duration for defaultable bonds was shorter than for default-free bonds, and vice versa. Their finding was contrary to the common belief that default always shortens the bond duration.

Their results showed that the stochastic duration measure can be very different from the Macaulay duration even with a mild mean reversion and low volatility of interest rates. In addition, they have found that default intensity and interest rates exhibit a negative and significant relation for A- and BBB-rated bonds in the 1987–1989 and 1990–1993 subperiods. On the other hand, this relation became positive in the 1994–1996 subperiod for all bonds. Their results have suggested that the relation between default intensity and interest rates varied with the business cycle. Furthermore, their results have suggested that bond duration should be adjusted for the effect of default to achieve an effective immunization, especially for lower quality bonds.

Sudip Datta, Mai Iskandar Dutta, and Kartik Raman (2005) have studied on “Managerial Stock Ownership and the Maturity Structure of Corporate Debt.” They made the first study to document that managerial stock ownership plays a significant role in determining corporate debt maturity. So, by controlling previously identified determinants of debt maturity and modeling leverage and debt maturity as jointly endogenous, they document a significant and robust inverse relation between managerial stock ownership and corporate debt maturity. They have also shown that managerial stock ownership influences the relation between credit quality and debt maturity and between growth opportunities and debt maturity.

Their analysis had shown that managers with higher stock ownership, and therefore better incentive alignment with shareholders, choose a larger proportion of short-maturity debt. The economic implication of this result was that an increase in managerial stock ownership from the median to the 95th percentile was expected to shorten the percentage of total debt maturing in 3 years or more by 4.90%. This finding have established for the first time the role of managerial stock ownership in determining corporate debt maturity structure choice beyond the basic capital structure (debt–equity choice) decision. Based on their main hypothesis, they have also examined the influence of managerial stock ownership on the relation between growth opportunities and maturity structure of debt. They have also examined whether the relation between debt maturity and growth opportunities was influenced by managerial stock ownership.

Their objective was to relate the degree of manager–shareholder interest alignment to the debt maturity structure. Because the observed debt maturity structure in a given year was the cumulative result of previous debt maturity choices, an appropriate measure of manager–shareholder interest alignment should reflect the equity-based incentives that influenced past debt maturity decisions.

To investigate the link between managerial stock ownership and debt maturity, they have obtained a sample of firms with available data on both Compustat and Standard and Poor’s ExecuComp databases spanning the years 1992 through 1999. ExecuComp covered firms in theS&P500,S&PMidcap 400,S&PSmallCap 600, and other firms that are not currently in the S&P indexes but that were previously in one of the indexes. They have retrieved managerial stock ownership data from the ExecuComp database. All other financial data are from the Compustat database. Following Barclay and Smith (1995), they have restricted their sample

to industrial firms by including only firms with Standard Industrial Classification (SIC) codes from 2000 to 5999.

They have shown that managers with higher stock ownership choose a larger proportion of short-maturity debt thereby committing to more frequent monitoring. On the other hand, more entrenched managers (i.e., managers with lower stock ownership) choose longer maturity debt. It was important to note that this significant and robust inverse relation between managerial stock ownership and corporate debt maturity emerges after controlling for all previously identified determinants of debt maturity and modeling debt maturity and leverage as jointly endogenous variables. The result strongly supported their central proposition that managerial stock ownership was an important determinant of corporate debt maturity.

This study extended the debt structure literature in two additional ways. First, it refined their understanding of the relation between debt maturity and liquidity risk. Second, they have examined the influence of managerial stock ownership on the relation between debt maturity and growth opportunities of the firm. They found that for firms with low-growth opportunities, managers with high-stock ownership choose a significantly greater proportion of short-maturity debt than their counterparts with low equity ownership.

Geetanjali Bali and Frank S. Skinner (2006) have studied on “The Original Maturity of Corporate Bonds: The Influence of Credit Rating, Asset Maturity, Security, and Macroeconomic Conditions.” They have examined the determinants of the new issue maturity of corporate bonds. As credit rating decreases, new bond issues have longer maturities, but substantial variation in maturity within each rating class remains. They found that asset maturity, security covenants, and macroeconomic conditions influence the new issue maturity of bonds within rating categories. Because of their new issue focused, their approach differed from previous research in three other ways. First, they had controlled for credit ratings as they had examined the factors that potentially can explain the original maturity choice for corporate bonds. Second, they had believed that potential investors are concerned with recoveries in the event of default as well as the probability of default. Third, they had selected only straight bonds, thereby assuring their results pertain to bonds of known promised maturity.

They have used the model in which their dependent variable was the time to maturity (TTM), for new issues of corporate bonds measured in days. Their proxy for the maturity of assets was the industry category (IC). Their proxies for macroeconomic factors are the short-term Treasury interest rate (TB), the slope of the Treasury term structure (SLOPE), and the credit spread (*S*). They measured TB as the yield to maturity on a 3-month Treasury bill, SLOPE as the difference between yield to maturity on a 10-year Treasury note and 3-month Treasury bill, and *S* as the difference between the yield to maturity on Moody's Baa and Aaa yield indices. Finally, they have predicted a positive relationship between credit spread and original time to maturity for high-credit quality bonds, but a negative relationship between credit spread and maturity for low-credit quality bonds.

In summary, their model was

$$TTM_{it} = \hat{a}0 + \hat{a}1IC_{it} + \hat{a}2SL_{it} + \hat{a}3TB_{it} + \hat{a}4SLOPE_{it} + \hat{a}5S_{it} + \mathring{a}_{it},$$

Where,

TTM_{it}:	Original time to maturity in days of bond *i* at offering date *t*;
IC_{it}:	Industry category for bond *i* at offering date *t*. Prediction: $\hat{a}1 > 0$;
SL_{it}:	Security level for bond *i* at offering date *t*. Prediction: $\hat{a}2 > 0$;
TB_{it}:	Yield to maturity on 3-month Treasury bill corresponding to bond *i* as of offering date *t*. Prediction: $\hat{a}3 < 0$;
$SLOPE_{it}$:	Slope of term structure of interest rates corresponding to bond *i* as of offering date *t*. Prediction: $\hat{a}4$ is positive or negative;
S_{it}:	Credit spread corresponding to bond *i* as of offering date *t*. Prediction: $\hat{a}5$ is positive for high-credit quality, but negative for low-credit quality bonds.

They have used the LJS Global Information Service's Fixed Investment Securities Database (FISD). FISD covered bonds that insurers tracked by the National Association of Insurance Commissioners held as of January 1, 1995 or bought through January 15, 2002, a total of 111,140 issues. From FISD, they have selected bonds with an offering date from January 1, 1995 to December 31, 2001, which belong to the industrial, financial, and utility industries, while they have eliminated Treasury bonds and other miscellaneous bonds. They have

considered only standard and Poor's and Moody's rated bonds with a rating issued within one year of the offering date. The final sample contained 11,211 bonds.

Their result have shown that, higher credit quality bonds concentrate their new issue maturity at the shorter end of the maturity spectrum and lower credit quality bonds concentrate their new issue maturity at longer terms. They found evidence that the term of debt was matched to the term of assets; but unlike the prior studies their evidence was unambiguous, because they controlled for the credit rating of bonds in their sample. They found that the evidence in favor of maturity matching was stronger for investment rather than for below investment grade bonds.

They have reported that junior bonds tend to have a longer new issue maturity than senior bonds. They have suggested that firms should sell short-term senior and long-term junior bonds to maximize debt capacity. They found that the more creditworthy junior bonds are of longer maturity throughout the entire range of credit ratings. Similar to previous studies, they have found that macroeconomic conditions have an influence on the original maturity of all bonds. However, by segmenting the data by broad rating category, they found that the credit spread have a significant influence on new issue maturity.

Roy Batchelor and Katiuscia Manzoni (2006) have studied on "The Dynamics of Bond Yield Spreads around Rating Revision Dates." They have examined the effect of rating revisions on sterling Eurobond yields using a panel model with conditional heteroskedasticity that controls for event-induced changes in the variance of spreads. Positive rating revisions are fully anticipated by the time the upgrade occurs. Negative revisions are only partially anticipated, and spreads on downgraded bonds rise for some time after the downgrade have been announced. All ratings announcements are accompanied by a temporary fall in yield volatility. They have attributed this to the resolution of uncertainty about the true rating of the bond. Ratings may provide a mean for conveying relevant inside information to bondholders without providing full information to the entire marketplace. Supporting these arguments was the revealed preference of bond issuers and purchasers to pay for rating services.

Their data relate to all sterling Eurobond ratings revisions made by Standard & Poor's (S&P) from January 1992 through December 1999. From a total of 477 bonds traded in this period, 313 Eurobonds were not re-rated and 164 experienced a rating revision, of which 123 were

downgrades and 41 were upgrades. The largest individual category was the highest rated AAA group (about 30% of all Eurobonds), and they are the most stable with only about 10% downgraded one class to AA+ between 1992 and 1999. A further 30% of bonds are rated AA+ to AA–, and about 40% are A+ and below. For these groups, the incidence of ratings changes is about 45%. Most changes are one class up or down, and only in 35 cases do ratings change by more than one class. Eight bonds were re-rated within 60 days from a previous revision.

The first hypothesis they have tested was whether Eurobond yields react differently to positive and negative rating revisions, a consistent finding of the U.S. studies surveyed earlier. The second hypothesis they have tested was related to the effect of the ratings change on volatility. Third, they have tested for significant differences in the effect the rating event have on spread and volatility across classes of bonds.

In their article they have analyzed the effects of rating change announcements on the abnormal yield and volatility of daily returns on sterling-denominated Eurobonds. The question of the effect of rating changes on bond and stock prices in the United States have been well studied in the literature. Specifically, ratings events percolate through to yields in an asymmetric way. Positive rating news releases are fully anticipated by the market, but downgrades are accompanied by a significant increase in the yield spreads in the post-announcement period. The asymmetric effect of rating announcements on spreads implies that a strategy of shorting downgraded bonds would be profitable.

The methodological contribution of their study was that it employed a panel GARCH model to the yield spread series. That helps them to identify how ratings affect volatility, and by allowing for time-varying, event-dependent, volatility changes, it gave them more confidence in the validity of their statistical inferences. The effect of any ratings announcement was to reduce volatility during and around the time the information was released. They conjectured that that calming effect occurred because the re-rating announcement resolved uncertainty about the current status of the bond.

Misa Tanaka (2006) studied on “Bank Loans Versus Bond Finance: Implications for Sovereign Debtors.” Her article analyzed the optimal choice between bank loans and bond finance for a sovereign debtor. It showed that if borrowers can be _publicly monitored_ by a

rating agency that disseminates the information about their creditworthiness, their choice between bank loans and bond finance was determined by the trade-off between two deadweight costs: the crisis cost of default and the cost of debtor moral hazard.

She argued that one of the key differences between the two types of sovereign debt was that bank loans are based on private monitoring whereas bond finance relies on public monitoring by credit rating agencies. The public monitoring therefore made bonds more easily transferable compared to bank loans by eliminating the information asymmetry between existing creditors and third parties. Another important difference between bank lending and bond finance was that the former was financed by a few identifiable creditors, whereas the latter was held by a large number of anonymous and dispersed creditors. In addition, she also analyzed the policy implications of increased bond finance by EME sovereigns, and these issues are not considered by prior Hale.

She had presented a model in which the difference between bank lending and bond finance was that of monitored and non-monitored lending. In this set-up, banks can observe the financial state of the borrower in the interim at some cost and renegotiate the repayment terms, whereas bondholders simply stop lending to all borrowers facing repayment difficulties since obtaining information and renegotiating the contract was too costly for them. She developed a more realistic model, in which bank loans are provided by a single lender using private monitoring, whereas bond debts are financed by multiple lenders using public monitoring. In this modified set-up, sovereign borrowers can pay a credit rating agency to publicize information about their creditworthiness.

Her article was perhaps the first to investigate the policy implications of the increased use of long-term bond finance by EME sovereigns. The analysis showed that the ease of rollover made bank loans more attractive for short-term borrowing, whereas the transferability made bonds cheaper for long-term financing. She have also shown that borrowers prefer long-term bond issuance over short-term bank loans for financing projects with an uncertain timing of cash flow, if the crisis cost of a default was large and the cost of information dissemination was small. Thus, the large crisis costs together with the reduced cost of information dissemination may explain the recent shift towards bond finance by EME sovereigns.

She had highlighted two inefficiencies that arise in a world where long-term bond financing dominates: the crisis cost of an inevitable default and the ex post debtor moral hazard, which delays restructuring of an unsustainable debt. State contingent debt which was linked to the debtor's GDP forecast could potentially eliminate these two inefficiencies, but such a contract may not be feasible in practice unless there are reliable forecasts which debtors are unable to manipulate.

An IMF intervention to prevent a crisis conditional on an early debt restructuring could improve welfare, but only if the IMF had accurate information about the borrower's financial state and commits not to rescue strategic defaulters. Moreover, such an IMF intervention was welfare improving if and only if the benefits of mitigating the crisis costs and the ex post debtor moral hazard outweigh the cost of intervention, including its implication for the ex ante debtor moral hazard. Furthermore, she had explained how the shift to long-term bond finance might delay debt restructuring.

2.5 Review of Thesis

Having reviewed the research report, most of the research studies are related with public debt and very few studies are found related with overall debt securities market (i.e., government and corporate). No any study was performed particularly on corporate debt securities only.

Mr. Purushottam Acharya (1968) had conducted a case study on public debt in Nepal and reached on the conclusion that public debt is most popular these days due to the fact that the repayment of debt on maturity can be adjusted through the issue of fresh public debt. Due to the popularity of purchasing bonds through people, there is no difficult for the subscription of public debt. Furthermore, he added that investors have full trust on government bond and subscription of government bond is higher than the bonds issued by other non-government institutions.

Mr. Mahesh Ram Joshi (1982) had studied on structure of public debt in Nepal. He tried to focus the essential of internal borrowing as pictured the poor economic performance of the nation due to nation's natural topography and human behavioral limitations. He concluded that the internal borrowing is most essential to develop the money and capital market in the

nation. He recommended floating or introducing the different public borrowing scheme that may suit the pocket of rich as well as poor people.

Similarly, many studied were performed on public debt market. Mr. K. J. Baral (1999) had studied all types of securities- corporate or government, debt or owner types of securities. His study was based on the pure secondary data on the period of 1984-98. He came to know that till 1976, companies willing to issue securities had to manage their issues themselves. NIDC and RBS had legal mandate to manage issues, but they never performed these roles to that date. Furthermore, he added that the corporate debt securities market is the least developed market in Nepal. Only one (Shree Ram Sugar Mill) listed organization issue the debt securities until that date which indicates that equity shares dominated the corporate debt securities in the Nepalese securities market.

Mr. Ram Prasad Paudel (2002) had studied on government securities practice in Nepal. He summarized that, government securities is issued to meet short-term and long-term financial requirement. The government expenditure through public debt is quite beneficial to the nation if used productively. But a large public debt may create problems in the economy in future. He added that Nepal has been suffering capital shortage since the first budget speech. Most people use their idle funds on government securities rather than behaving as investors. Among them majority are service holders and very few of them are retired people. The people of rural areas are less aware to the government securities. Poor as well as rich, and educated as well as uneducated people are interested towards government securities. Lastly, he concluded that Nepalese investors are attracted towards govt. securities as most of Nepalese investors are risk averter and need less risky investment. He recommended that, people pride themselves on their financial contribution to nation, if there are suitable debt securities available for investment.

Mr. D. R. Kafle (2003) had studied problems and prospects of debt market growth in Nepal. He summarized that, capital market of Nepal is in the infant stage and debt securities market of corporate bodies is limited in existence. The government debt securities market is growing but not as expected. The heavy reliance of government in foreign debt has created huge problem in the growth of Nepalese debt securities market. He added that, investment made on impulse rather than through market study or credit ratings, in Nepalese capital market. He came to the point that Nepalese investors preferred national saving bond and development

bond rather than other govt. bonds. He concluded that due to over supply of deposits by customers; commercial banks do not issue debt securities. On the one hand, big corporate bodies could get loan easily from banks at lower cost so they didn't need to issue debt instruments, but on the other hand small corporate firm have been facing the problem in raising the fund by issuing debt securities as well as from bank. Tedious and lengthy process of issuing the debt securities is another problem that hinders the growth of debt securities market.

Mr. N. K. Mainali (2003) had studied on problem and prospects of debenture market growth in Nepal. He addressed that, there are many problems like as insufficient legislative provisions regarding Nepalese debenture market, political instability, poor price sensitivity, insufficient information disclosure, investors' low preference on debenture etc. are responsible for the very slow growth of Nepalese debenture market. He added that, capital supply, tax saving, interest income, means of meeting deficit budget, growth on public debt are some plus point which signifies the prospects of debt market growth in Nepal.

Mr. S. M. Bhattarai (2003) had performed his research on problems and prospects of debt market growth in Nepal. He concluded that, govt. debt securities market is slightly at maturity stage as compared with corporate debt securities market. Mainly the problems like – lack of public awareness, limited supply of quality bonds, investors increasing attraction towards common stock/shares and also towards the banking sector's securities, difficult process of issuing debenture, insufficiency of legal provisions and the infra-structure of capital market, dominant by credit oriented transaction, feeling of non-existence of debt market, lack of large business organizations and a narrow area of government securities market etc. are hindrances for the smooth growth of Nepalese debt securities market. However, the main factors such as; investor's attraction towards liquid assets like debt securities, desire to invest on debenture of any potential issuance, attraction towards convertible debenture, declining interest rate on deposit of commercial banks, increasing trend of amount of govt. securities and the increasing trend of issuance of corporate debentures etc. indicates the growth prospects of Nepalese debt securities market. He came to know that the interest rate of deposit on commercial bank is decreased every year. But the interest rate on debt securities is higher to some extent than bank's deposit rate. Also investor's fund can be utilized in a productive way if invested in govt. securities, which helps in the upward growth of national economy. Furthermore, he added that if any organization is

going to issue debenture Nepalese investors would invest on it. So he recommended to the govt. to bring new rules and regulations and to the Nepalese companies to use debenture as a source of financing to them.

Mr. Indra Tribikram Pahari (2003) had studied on problems and prospects of debt market growth in Nepal. He summarized that the debt securities market is an important sector for Nepal. There is no controversy as to whether this sector should be developed or not. However, this is a leading sector and once this sector is developed, capital market will also develop as a whole. He added that many intellectuals in developed countries say that their countries are under–developed because they do not have developed debt securities market. Govt. and corporate debt securities are not going according to the country demand. Interest and inflation rates are changing frequently due to the internal as well as external environment such situations discourage the issuers as well as investor too. He came to know that there is positive relationship between inflation rate and govt. borrowing. By analyzing the primary data, he came to the point that corporate debt securities are relatively less important for investment in comparison to common stocks and govt. securities. He came to the point that many of the investors are willing to invest in banking sector debt securities. But, inadequate infrastructure facilities have been regarded as the second most significance problem. He concluded that only a few corporate debt securities have been issued prior or after the enactment of securities exchange act 1983. Govt. securities covered more than 98 percent of total securities market. His study indicates that banking sector debenture is more attractive than other sectors. However, the non-securities market component (loan from banks) of financial market is developed more than the debt securities market in Nepal. He had drawn other interesting conclusion that interest rate is affected by inflation and real rate of return. Lastly, govt. securities are unable to create benchmark yield curve for their own securities as well as corporate debt securities.

2.6 Research Gap

Though there are various studies conducted on public debt but only countable numbers of research are being conducted on overall debt market of Nepal. No research has been made before on the topic “A study on Corporate Bond: Prospects and Issues in Nepal.” Since no any research has been made on this topic, researcher felt a research gap. Not only this but an

underdeveloped nations like Nepal, industrialization plays a vital role in its economic development; to direct the nation towards industrialization, capital markets should function well in balanced form. For the sound development of capital market, corporate as well as govt. debt market needs to be developed. However in the case of Nepal, corporate bond market is limited in its existence and this is the other cause to attract the researcher attention. Thus, this study is conducted, in which the researcher attempts to find the issues (problems) and prospects of Nepalese corporate bond market.

The financial year 2007/208 has been the most successful year in the history of debenture issue worth Rs. 2950 Millions to the general public. Out of Rs. 2950 Millions, Nepal Electricity Authority, a Government Undertaking has alone offered Rs. 1500 Millions to the general public and only Rs. 1450 has been contributed by the corporate sector. Despite to this fact, the researcher has totally concentrated on the study of debenture issue by the corporate sector and has totally omitted the importance of debenture issue by the Government sector to the general public for the future study.

CHAPTER-III

RESEARCH METHODOLOGY

3.1 Introduction

Simply, "Research" refers to search again and again. Research is a systematic and organized effort to investigate a specific problem that needs a solution (Sekaran, 1992). Methodology is the research method used to complete the study systematically and test the hypothesis. In this chapter, it has been presented methodology about conducting thesis on the desired topic. It includes research design, nature of data, data gathering procedure, population and sample, period covered, sources of data, statistical procedure, testing of hypothesis, processing and analysis of data.

3.2 Research Design

Research design is the plan, structure, and strategy of investigation conceived so as to obtain answers to research questions and control variance (Kerlinger, 1986). It is outline of a good research employed for the investigation of the required result. This research study attempts to analyze problems and Needs of developing Nepalese corporate bond market. Thus, to fulfill the objective of the study, both primary as well as secondary data are used. Furthermore, descriptive as well as analytical and quantitative approaches are used to examine the problems. Various statistical tools such as curvilinear model and chi-square test for testing hypothesis are used to interpret the result come to conclusion.

This study is related to five-year financial data of corporate bond issue since 2003/07 to 2007/08. Thus, it will provide valuable input for drawing the overall picture and status of Nepalese corporate bond market.

3.3 Population and Samples

Nepal does not have a long history of corporate bond market. Only few (i.e., Thirteen) corporate firms have issued bond till this study was performed, so complete population has been taken in the study. There are 144 listed companies till the year ending of fiscal year 2007/2008. Corporate debt securities data have been collected of particular year. The survey investigation of only three sectors (i.e., Commercial Bank, Manufacturing and Processing Company, and Hotel), out of eight sectors (i.e., Commercial Bank, Development Bank, Finance Company, Insurance Company, Hotel, Manufacturing and Processing Company, and Other Company), has been selected for this study. So the survey investigation of 15 listed companies, out of 39 has been selected as sample to collect the primary data. Similarly, to examine the issue managers'/brokers', individual investors' and experts' opinion, 6, 22, and 9 respondents, respectively were selected. Furthermore, to analyze the position of corporate bond market in the structure of securities market the issuances of securities from FY 1995/96 to 2007/08 are taken as sample. The following table clearly shows selected sectors' total population, target population and percentage of population also.

Table 3.1:

Number of Enterprises Selected for the Survey Investigation

SN	Sectors	N	n	n/N (in %)
1	Commercial Banks	17	7	24.28
2	Manufacturing and Processing Companies	18	6	33.33
3	Hotels	4	2	50
Total		**39**	**15**	**38.46**

Source: SEBON Annual Report 2007/2008.

Note: *(i)'N' indicates the total number of Nepalese enterprises of three sectors that were listed in NEPSE and 'n' indicates for the number of enterprises selected (i.e., from three sector) for the survey investigation*.

3.4 Research Variables

The researcher has underlined some specific research variable such as rules and regulation of corporate debenture market, investors' attitude, information dissemination, primary and secondary markets are important research variables.

3.5 Sources of Data

Data is the fact, information, views etc. collected systematically and presented formally for the purpose of reaching in the appropriate decision. So, data is necessary for conducting the research work. Without the data we cannot prove the reliability and cannot support the research properly. This research study is based on both

1. **Primary data:** The sources of primary data are mainly questionnaire methods. A set of questionnaire is developed for various respondents. These are allocated to them and collected after some times. Personal interviews are also conducted during field visits. The main sources of the primary data are as follows:
    a. Listed Company (from three sectors)
    b. Issue Manager/Broker
    c. Individual Investor
    d. Other Experts

Total 100 questionnaires were printed and out of 100 questionnaires 85 could be distributed to the above respondents. Total 40 were distributed to the listed companies; consisting of 10 Commercial Banks, 5 Development Banks, 5 Finance Companies, 5 Hotels, 10 Manufacturing and Processing Companies and 5 Trading Companies. Total 45 were distributed to others; consisting of 10 Issue Mangers/Broker and 25 each to Individual Investors and 10 to other experts. The idea of choosing the specified companies in the specified sector is that some of friend and their friends of the researcher are working for those companies and the data collection made easier for the study. Almost all the data were collected with the help of their personal attention and assistance. The lists of (organizations) respondents who have nicely and fully filled out all the questionnaires are listed in **Annex VII.**

Secondary data: To examine the trend and ownership pattern and for interest rate analysis, secondary data are also used. The main sources of secondary data are as follows:

a. Various quarterly Economic Bulletins published by NRB
b. Various Economic Reports
c. Economic Survey
d. Various Statistical year books and other publication of Department of Statistics
e. Various Annual Report of NEPSE and SEBON
f. Various Reports of Listed Companies, recorded in SEBON
g. Prospectus of Debenture Issuing Banks
h. Website of SEBON, *http:// www.sebonp.com*
i. Website of NEPSE Ltd., *http:// www.nepalstock.com*
j. Website of Nepal Rastra Bank, *http:// www.nrb.org.np*
k. Other publications, books, journals, articles, previous research studies, dissertations, The World Book Encyclopedia and websites etc. have been used.

3.6 Testing of Hypothesis

Hypothesis is usually considered as the principal instrument in research. It can also be considered as suggested solution of the research problem. Its main function is to suggest new experiments and observation. With the available data, decision makers apply the hypothesis testing and give the decision accordingly. It may not be proved absolutely but in practice, it is accepted if it has with stood a critical testing. Usually the statistical hypothesis is tested at 1%, 5% and 10% level of significance. Thus, the significant test will be conducted in the analysis of data.

The study is based on both primary and secondary data. The primary data has been collected by questionnaire. Computers application programme has been used for processing these data. Some others statistical tools have been used for presentation and make raw data into organized form and also for analysis and interpretation. In this research, some suggested solution called as hypothesis is used to suggest new observation.

Chi-Square Test (χ^2)

The chi-square test is an important test amongst the several tests of significance developed by statisticians. Chi-square is a statistical measure used in the context of sampling analysis for computing a variance to a theoretical variance. The chi-square, denoted by Greek letter χ^2, is one of the simplest and most widely used non parametric test in statistical work. The test was given by Karl Pearson in 1990. As a non parametric test, it can be used to determine if categorical data shows dependency or the classifications are independent. So, in this study the chi-square values are computed to assess whether the difference in the opinions of the companies, experts and investors respondents as to major problems and prospects of corporate bond market in Nepal is significant.

To examine the hypothesis by the chi-square test, the expected frequencies are calculated by applying the following formula:

$$E = \frac{RT * CT}{N}$$

Where,

RT = Row Total

CT = Column Total

N = Number of Observation

The quantity of χ^2 describes the magnitude of the discrepancy between theory and observations. It is defined as,

$$\chi^2 = \sum \frac{(O-E)^2}{E}$$

Where,

O = Observed Frequency

E = Expected Frequency

3.7 Method of Analysis

The main purpose of analyzing the data is to change it from as unprocessed form to an understandable presentation. The analysis of data consists of organizing, tabulating and performing statistical analysis and drawing inferences (Wolf and Pant, 2003:204). Variables are restored to a number of cases. Various possible alternative specifications are also attempted where necessary in each case in order to obtain best result. The empirical results have been estimated in this study by using data for the period of 1995/96 to 2007/08. Similarly primary data will be classified, tabulated and analyzed by using various statistical and financial tools.

(A) Duration

Duration is directly related to term and inversely related to coupon and yield to maturity. This model helps to analyze the actual maturity period for bondholders described by Macaulay (1938) as shown below.

$$MD = \frac{1+y}{y} - \frac{(1+y) + T(c-y)}{c[(1+y)^{T}-1]+y}$$

Where,

MD = Macaulay Duration

Y = Market Interest Rate (YTM)

T = Term to Maturity

C = Coupon Interest Rate

This specific model was used for calculating the duration of Nepalese corporate debt securities.

(B) Valuation Model

This study used the valuation model as described by Brigham and Houston (2001). The valuation of a bond is the sum of the par that is due at the end of bond life. The specific model as:

$$\mathbf{V_o} = I(PVIFA_{i\%, n}) + M(PVIF_{i\%, nth})$$

Where,

V_o = Intrinsic Value of Bond Interest

I = Coupon Amount of Bond

M = Par Value (Maturity Value)

I = Market Interest Rate

m = Maturity Period

This model is used to find out whether the Nepalese debt securities are over priced or under priced.

(C) Statistical Tools Used

In the process of estimating above models, various statistical tools have been used, e.g., simple arithmetic mean, weighted mean, median, etc. A brief explanation of statistical tools employed in this model is as follows:

Simple Arithmetic Mean

Simple arithmetic mean is the sum of the values of all the elements in the sample ($\sum$ x) and divided by the number of elements in the sample.

Weighted Mean

Weighted mean is an average that takes into account how important each value is to the overall total. In this study, weighted mean is calculated to analyze rank wise number of response to field survey.

Median

The median is a single value that measures the central item in the data. Half the items lie above the median, half below it. If the data set contains an odd number of items, the middle item of the array is the median. In this study median value of responses for each statement of observations on debt securities practices have been computed.

3.8 Test of Hypothesis

Hypothesis means the presumption or quantitative statement of the population parameter which may be true or false. In order to make proper decision about the qualitative statement of the population, testing of hypothesis technique is used. But, testing of hypothesis is carried out by using sample information.

According to Rumen and Balline, "A hypothesis is a statement capable of being tested and verified or rejected". However, in statistics, hypothesis means a statistical statement about the values of one or more parameters of the population. After setting the hypothesis, it is necessary to test the reliability of such statistical statements. For this purpose, an experiment is conducted by using sample information and the hypothesis is rejected if the results obtained are improbable under this hypothesis. But, if the results are not improbable, the hypothesis is accepted. The procedure of drawing such conclusion based on sample information is known as testing of hypothesis. It has tested following hypothesis:

Hypothesis No. 1

Null Hypothesis (H_0): There is no significant difference between observed and expected frequencies regarding the choice of various sector's debenture.

Alternative Hypothesis (H_1): There is significant difference between observed and expected frequencies regarding the choice of various sector's debenture.

Hypothesis No. 2

Null Hypothesis (H_o): There is no significant difference between observed and expected opinions regarding to the reason for the slow growth of corporate bond market.

Alternative Hypothesis (H_1): There is significant difference between observed and expected opinions regarding to the reason for the slow growth of corporate bond market.

Hypothesis No. 3

Null Hypothesis (H_o): There is no significant difference between observed and expected opinion regarding to the use of bank loan instead of issuing corporate bond.

Alternative Hypothesis (H_1): There is significant difference between observed and expected opinion regarding to the use of bank loan instead of issuing corporate bond.

CHAPTER – IV

PRESENTATION AND ANALYSIS OF DATA

This chapter consists of two main sections. Section 4.1, consists of presentation and analysis of secondary data and section 4.2 consists of presentation and analysis of primary data.

4.1 Presentations and Analysis of Secondary Data

4.1.1 Changing trend of Corporate Bond Market in Nepal

Securities market is the backbone of capital market in both developed and developing countries but only few investment alternatives are available in Nepalese capital markets. Among them, corporate bond is in the creeping stage of development. Securities help the private sector to contribute on economic development through more efficient reallocation of capital. For the development of capital market, each and every sector of securities markets needs to be developed. So, for the overall development of capital market development of corporate bond market is necessary.

In the Nepalese context, very few corporate bodies have issued corporate bond for the purpose of raising long-term fund. Bottlers Nepal Ltd. was the pioneer to practice corporate bond in the Nepalese History. It had issued 18% debenture of Rs. 5 million (with par value of Rs. 1,000) in the FY 1986/87 **(See Table 4.1)**. It was slightly over subscribed (i. e. Rs.5.13 million) and was already redeemed.

Then, Jyoti Spinning Mills Ltd. was the second to issue corporate bond. It had issued 14% debenture of Rs. 20 million (with par value of Rs. 1,000) in the FY 1992/93. Its issue was managed by NIDC **(See Table 4.1).**

Similarly, Shree Ram Sugar Mills Ltd. (SRSML) was the third to issue debenture in the Nepalese history. It had issued 14% convertible debenture of Rs. 93 million (with par value of Rs. 1,000) in the FY 1997/98 **(See Table 4.1)**. Its debenture had been converted after four

year. Though total numbers of debentures issued were 93,000 units, only 17,130 units debenture were applied **(See Table 4.2)**. The under subscription rate was 0.18 times. That means 75,870 units issue was not subscribed. This shows those SRSML debentures were heavily under subscribed. The debenture was issued and managed by NIDC. This shows that all three pioneer issuer of debenture were manufacturing companies.

Table: 4.1

Amount of Debenture Issued (in millions) by the Corporate Bodies (FY 1986/87 to 2007/08)

S.N	Companies	Issued Yr.	IA (M)	IPO (Unit)	PP (Unit)	C I	Sector	M P (Yrs.)
1	BNL	1986/87	Rs.5	0	0	18%	Mfg.	0
2	JSML	1992/93	Rs.20	0	0	14%	Mfg.	0
3	SRSML	1997/98	Rs.93	0	0	14%	Mfg.	C-4
4	HBL_1	2001/02	Rs.360	100,000	260,000	9%	Bank	7
5	$NIBL_1$	2003/04	Rs.300	100,000	200,000	8%	Bank	7
6	EBL	2004/05	Rs.300	50,000	250,000	6%	Bank	7
7	BOKL	2005/06	Rs.200	50,000	150,000	6%	Bank	7
8	$NIBL_2$	2005/06	Rs.250	80,000	170,000	6%	Bank	7
9	NICBL	2005/06	Rs.200	50,000	150,000	6%	Bank	7
10	NSBIBL	2005/06	Rs.200	50,000	150,000	6%	Bank	7
11	$NIBL_3$	2006/07	Rs.250	50,000	200,000	6.25%	Bank	7
12	KBL	2007/08	Rs.400	80,000	320,000	8%	Bank	7
13	HBL_2	2007/08	Rs.500	NA	NA	8%	Bank	7
14	$NIBL_4$	2007/08	Rs.250	50,000	200,000	8%	Bank	7
15	NBL	2007/08	Rs.300	60,000	240,000	8%	Bank	10

Source: Compilation of Annual Report of SEBON 2004/05, 2006/07 and 2007/208
Debenture Prospectus of Issuing Companies

Thereafter, Himalayan Bank Ltd. (HBL1) had issued Rs. 360 million "8.5% Himalayan Bank Bond–2066" (with par value Rs. 1,000 and semi-annual interest payment) in the FY 2001/02. It had maturity period of 7 years. Out of 360,000 units of issue, 260,000 units were privately placed and 100,000 units were issued to the general public **(See Table 4.1)**. Its issue was managed by NMB. So, HBL1 was the fourth company to issue corporate bond in the Nepalese history. But, it was the pioneer to issue corporate bond from the banking sector. Total numbers of debentures issued was 360,000 units and number of debentures applied was 401,700 units. It was over subscribe by 41,700 units and over subscribe rate was 1.12 times.

The over subscription rate 1.12 times shows that investors are attracted towards corporate debt securities. Oversubscription of HBL1 bond and very low subscription of SRSML debenture shows that investors prefer to invest in corporate debt securities of banking sector than that of manufacturing sector. The subscription on banking sectors till this date has never been experienced under subscription. There was again over subscription experienced at the issue of BOKL during 2005/06 by 266620 units and over subscribe rate was 133.31% .

Nearly one and a half year after HBL bond, another big Nepali bank, Nepal Investment Bank Ltd. ($NIBL_1$) has issued Rs. 300 million "7.5% Nepal Investment Bank Ltd. Bond–2067" (with 7.5% coupon interest paid semi-annually) in the FY 2003/04. It had maturity period of 7 years. It was issued on 2060/07/21. Out of 300,000 units of issue (with par value Rs. 1,000), 100,000 were issued to the general public and 200,000 units were privately placed **(See Table 4.1)**. Though the interest rate offered by $NIBL_1$ was one percent lower than that in HBL's bond (where it was 8.5% with semi-annual payment arrangement), it had good chances of being oversubscribed. $NIBL_1$ bond was issued and managed by AFCL. Total number of debenture issued was 300,000 units and total number of debenture applied was 300,000 units **(See Table 4.2)**. This shows that after full subscription, debenture issuance was stopped.

Table 4.2:

Name of the Corporate Bond Issuing Companies, Year of Issue Over/Under Subscription, Types of Issue and Issue Manager (FY 1986/87 to 2005/06)

Year	Issuer	B I (Units)	B A (Units)	O S (Units)	O/U S (x)	I M	Types
1986/87	BNL	5,000	-	-	-	-	-
1992/93	JSML	20,000	-	-	-	NIDC	-
1997/98	SRSML	93,000	17,130	-75,870	-0.18	NIDC	Convertible
2001/02	HBL_1	3,60,000	4,01,700	41,700	1.12	NMB	Redeemable
2003/04	$NIBL_1$	3,00,000	3,00,000	-		AFCL	Redeemable
2004/05	EBL	3,00,000	5,13,000	2,13,000	1.71	CIT	Redeemable
2005/06	BOKL	2,00,000	2,66,620	66,620	1.33	NMB	Redeemable
2005/06	$NIBL_2$	2,50,000	2,56,825	6,825	1.03	AFCL	Redeemable
2005/06	NICBL	2,00,000	2,00,000	-		AFCL	Redeemable
2005/06	NSBIBL	2,00,000	2,32,400	32,400	1.16	CIT	Redeemable
2006/07	$NIBL_3$	2,50,000	2,50,000	-	1.00	AFCL	Redeemable
2007/08	KBL	4,00,000	4,04,000	4,000	1.01	NMB	Redeemable
2007/08	HBL_2	5,00,000	5,00,000	-	1.00	AFCL	Redeemable
2007/08	$NIBL_4$	2,50,000	2,50,000	-	1.00	AFCL	Redeemable
2007/08	NBL	3,00,000	3,00,000	-	1.00	NIDC	Redeemable

Source: Compilation of Annual Report of SEBON 2004/05, 2006/07 and 2007/2008 and Trading Report of Issue Manager

Everest Bank Ltd. had issued debenture of Rs. 300 million (with 6% coupon interest paid semi-annually) in the FY 2004/05. The par value of debenture was Rs. 1,000 with maturity period of seven years. Out of 300,000 units of issue, 50,000 were issued to the general public and 250,000 units were privately placed **(See Table 4.1)**. EBL bond was issued and managed by CIT. EBL bond was issued on 2062/01/07 B.S. Total number of debenture issued was 300,000 units and number of debenture applied was 513,000 units. It was oversubscribe by 213,000 units. The over subscription rate 1.71 times shows that it was heavily subscribed **(See Table 4.2)**. This shows that investors' interests are growing towards corporate debt securities of banking sector. Another conclusion drawn from this trend of oversubscription of debenture is that investors are interested towards the securities of better performing companies.

Similarly, Bank of Kathmandu Ltd. had issued Rs. 200 million "Bank of Kathmandu bond,

2069" (with 6% coupon interest paid semi-annually) in the FY 2004/05. The par value of debenture was Rs. 1,000, with maturity period of seven years. Out of 200,000 units of issue, 50,000 were issued to the general public and 150,000 units were privately placed **(See Table 4.1)**. BOK bond was issued and managed by NMB. It was issued on 2062/06/03 B.S. Total number of bonds issued is 200,000 units and number of bonds applied is 266,620 units. It is over subscribe by 66,620 units. Its over subscription rate is 1.33 times **(See Table 4.2)**. High subscription rate of this bond issue indicate that Nepalese corporate debt securities market has been growing day by day.

Again for the second time, Nepal Investment Bank Ltd. ($NIBL_2$) has issued "Nepal Investment Bank Bond-2070" (with 6% coupon interest rate paid semi-annually) in the FY 2005/06.The par value of debenture is Rs. 1,000, with maturity period of 7 years **(See Table 4.1)**. NIB bond-2070 is issued on 2063/02/26. Out of 250,000 units of issue, 80,000 were issued to the general public and 170,000 units were privately placed. The bond is issued and managed by AFCL. Total number of debenture issued is 250,000 units and number of debenture applied is 256,825 units. It is over subscribe by 6,825 units. The over subscription rate is 1.03 times **(See Table 4.2)**.

Nepal Industrial and Commercial Bank Limited has issued Rs. 200 million "NIC Bond–2070" (with 6% coupon interest paid semi-annually) in the FY 2005/06. Out of 200,000 units of issue (with par value Rs. 1,000), 50,000 units are issued to the general public and 150,000 units are privately placed. The bond is redeemable after 7 years **(See Table 4.1)**. The bond is issued on 2063/02/29 B.S. The bond is issued and managed by AFCL. Total number of debenture issued is 200,000 units and number of debenture applied is 200,000 units **(See Table 4.2)**. This shows that after full subscription, debenture issuance has been stopped.

Nepal SBI Bank Ltd. has issued Rs. 200 million "6% Nepal SBI Bank Debenture-2070" (with maturity period of 7 years and semi-annual coupon payment) in the FY 2005/06. Out of 200,000 units of issue, 50,000 units are issued to the general public and 150,000 units are privately placed **(See Table 4.1)**. The bond is issued on 2063/03/20 B.S. Its issue manager is CIT. Total numbers of bonds issued were 200,000 units and numbers of bonds applied were 232,400 units. It is over subscribe by 32,400 units. The over subscription rate is 1.16 times **(See Table 4.2)**.

Finally till the report writing, Kumari Bank Ltd. (KBL) had issued "KBL Bond -2065" (with 8.00% coupon interest rate) in the FY 2007/08. Out of 400,000 units of issue, 80,000 units were issued to the general public and 320,000 units were privately placed. The par value of debenture was Rs. 1,000, with maturity period of 7 years. Its issue manager was Nepal Merchant Bank and Finance Ltd. Total number of bonds issued were 400,000 units and was over subscribed by 4,000 units and over subscribe rate is 1.01 times. (**See Table 4.2)**

Himalaya Bank Ltd. (HBL) had issued "HBL Bond 2072" (With 8 % coupon interest rate) in the FY 2007/08. Out of 500,000 units of issue..… units were issued to the general public and …… units were privately placed. The par value of debenture was Rs. 1,000, with maturity period of 7 years. Its issue manager was AFCL Ltd.

Nepal Investment Bank Ltd. ($NIBL_4$) had issued "Nepal Investment Bank Bond-2072" (with 8.00% coupon interest rate paid semi-annually) in the FY 2007/08. Out of 250,000 units of issue, 50,000 units were issued to the general public and 200,000 units were privately placed. The par value of debenture was Rs.1, 000, with maturity period of 7 years. Its issue manager was AFCL (Nepal Investment Bank Ltd., Debenture Prospectus, 2008).

Nabil Bank Ltd. (NBL) had issued "NBL Reen Patra 2075" (with 8.5% coupon interest rate) in the FY 2007/08. Out of 300,000 units of issue; 60,000 units were issued to the general public and 240,000 units were privately placed. The par value of debenture was Rs. 1,000, with maturity period of 10 years. Its issue manager was NIDC Capital Market.

The high over subscription trend of corporate bond issued by banking sector shows that Nepalese corporate bond market has better future growth prospects. The high subscription of corporate debt securities attracts issuing companies towards debenture markets. Though one-year gap is seen after HBL bond issue, continuous issuing of debenture securities is seen thereafter. Four Nepalese banks have issued corporate bond in the same FY 2005/06 and same could be observed during 2007/08. This means, more of such bond issues can be expected in the future, particularly from the banks to meet their higher capital requirement under Nepal Rastra Bank directives.

Portion of amount of debenture issued by the corporate bodies out of the total amount of securities issued from fiscal year 1993/94 to 2007/08 is as follows.

Table 4.3:

Amount of Debenture issued by the corporate bodies out of total amount of securities issued (FY 1993/94-2007/08)

Year	Total no. of Issue	Total no. of debt issue	Total amt of issue	Cumulative amt of total issue	Total no. of Debt issue	Cumulative amt of total issue	% of debt on total issue of Securities
1993/94	16	-	244.40	244.40	-	-	0.00
1994/95	10	-	173.96	418.36	-	-	0.00
1995/96	12	-	293.74	712.10	-	-	0.00
1996/97	5	-	332.20	1044.30	-	-	0.00
1997/98	12	1	462.36	1506.66	93.00	93.00	6.17
1998/99	5	-	258.00	1764.66	-	93.00	5.27
1999/00	6	-	326.86	2091.52	-	93.00	4.45
2000/01	9	-	410.49	2502.01	-	93.00	3.72
2001/02	12	1	1441.33	3943.34	360.00	453.00	11.49
2002/03	18	-	556.54	4499.88	-	453.00	10.07
2003/04	14	1	1027.50	5527.38	300.00	753.00	13.62
2004/05	14	1	1626.82	7154.20	300.00	1053.00	14.72
2005/06	29	4	2443.28	9597.48	850.00	1903.00	19.83
2006/07	34	1	229.50	9826.98	250.00	2153.00	21.91
2007/08	21	5	3874.75	13701.73	2950.00	5103.00	37.24
	217	14	13701.73	-	5103.00	-	

Sources: Compilation of Annual Report SEBON 2004/5, 2006/7 and 2007/8

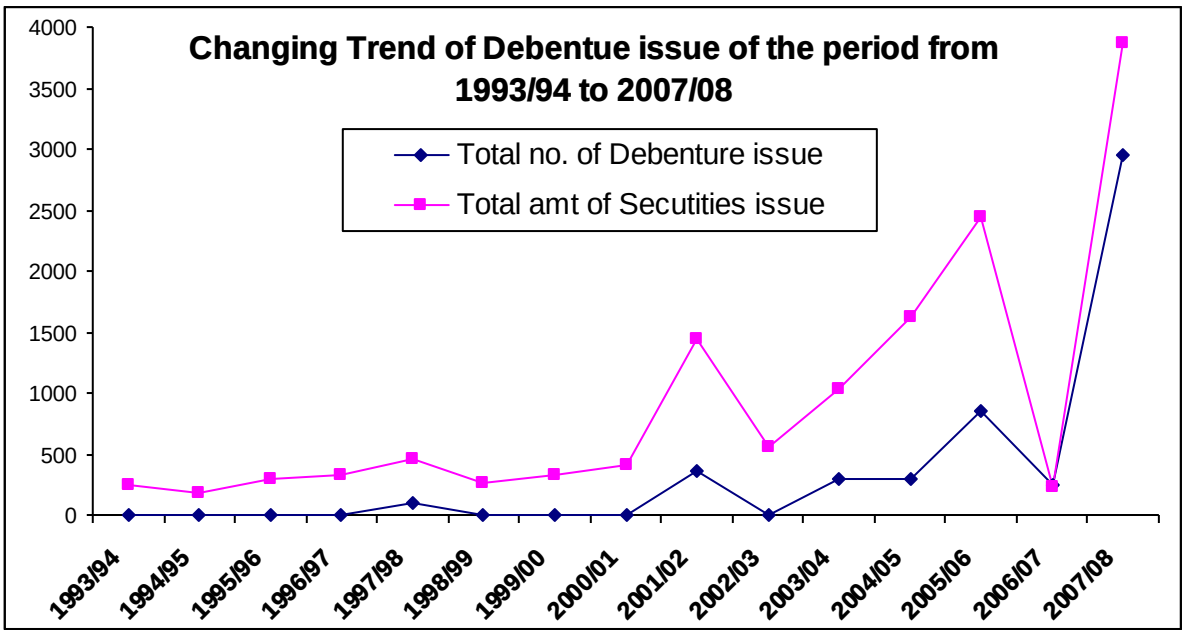
Out of total securities issued in the market, total amounting 93 millions of debenture was issued during 1997/98, which was 6.17% of the total securities issued of that time. The total number securities kept on increasing however there was no debenture issued till the financial year 2000/01 since 1997/1998. Hence the debenture market trend was in the decreasing ratio the period 1998/99 to 2000/01 which was 4.45% and 3.72% respectively.

In the financial year 2001/02, total 360 millions of debenture was issued in the corporate market and the again. It was 11.49% of the total securities issued out of total securities issued in the market of that time. It was again a positive sign again but lasted only for that financial year. There was no debenture issued in the subsequent financial year 2002/03 resulting debenture was again in the decreasing ratio from 11.49% to 10.07% in the financial year 2002/03.

But after 2003/04, the debenture market has shown the significant improvement. The number of debenture issued was 12 during the observed period (2003/04 – 2007/08) out of 14 since 19993/94. It is 85.71% of total debenture issue and the amount issued were 9201.85 millions out of 3701.73 millions. This is a good increasing trend of debenture issued when we compare the period of first period of ten years 1993/94 - 2002/03.

Following figure clearly shows that the cumulative amount of debenture issued in different year in comparison with cumulative amount of total issued.

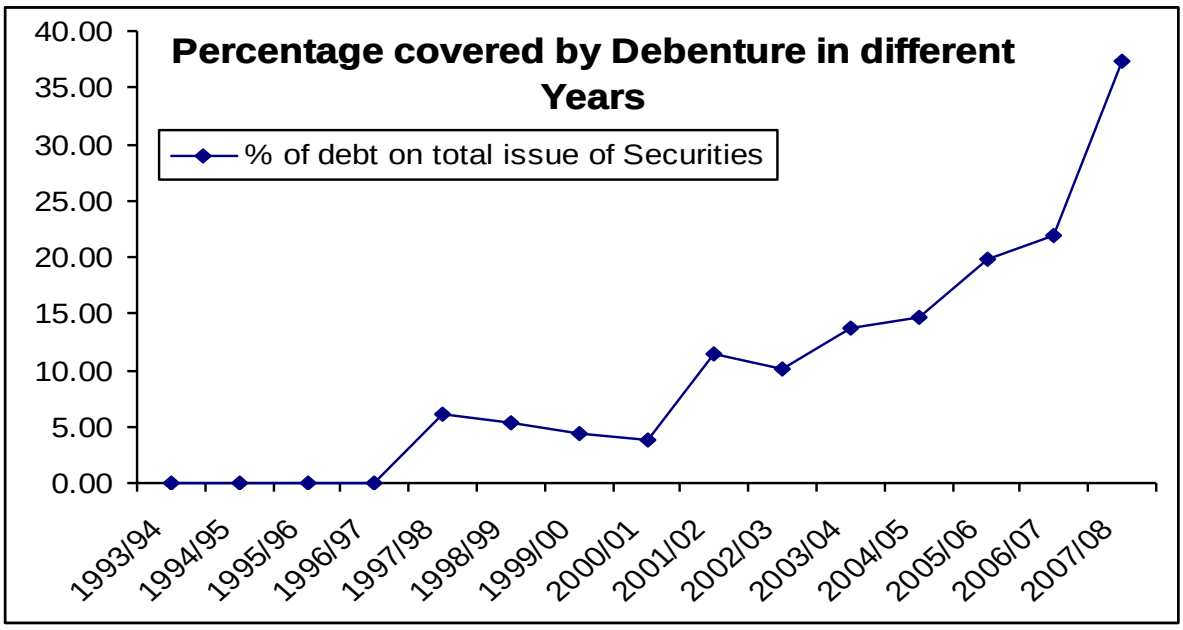
Figurer 4.1



There was 93 millions of debts issued in the fiscal year 1997/98 and till the year 2001/02, there was no debenture issued in the capital market and hence the curve of debenture show the straight line in these years. In the fiscal year 2001/02; 360 millions debentures was issued by Himalaya Bank Ltd. Two banks -Nepal Investment Bank Ltd. and Everest Bank Ltd. has issued debenture amounting 300 millions each in the fiscal year 2003/04 and 2004/05 respectively and the increasing trend shows in the debenture market. Four Banks-Bank of Kathmandu Ltd., Nepal Investment Ltd., Nepal Industrial and Commerce Bank Ltd. and Nepal SBI Bank Ltd. has issued total amounting 850 millions in the year 2005/06 which is the highest ever debenture issued in any fiscal years of until then and hence the curve of the debenture show the highest increasing trend. However there was only one issue in the FY 2006/07 and again it showed the down turn curve. But in the FY 2007/08 there was a record breaking debenture been issued in the history of Nepalese stock market (including 1.5 billion debenture issued by Nepal Electricity Authority). The total debenture issued was amounting

to 2.95 billions and issued respectively by Nepal Electricity Authority 1.5 billion, Kuamri Bank Ltd. 400 million, Himalayan Bank Ltd. 500 millions, Nepal Investment Bank Ltd. 250 millions and Nabil Bank Ltd. 300 millions. This issue has contributed debenture share ratio to increase 34.24 % out of total issue of stock.

The percentage of debenture issued in the different year can be shown with the help of following trend line. ***Figurer 4.2***



The percentage of debt issue until 1996/97 from 1993/94 is nil due there was no debenture issued during those period and the percentage of debt issued of debt is 6.17 during 1996/97 as there was debt issued for the first time amounting 93 millions by Sree Ram Sugar Mills for the first time during these period and has decreased significantly during 1998/99 to 2000/01 from 6.17% to 5.27% in 1998/99 and again 4.45% in 1999/00 and again 3.72% in the year 2000/01 as there was no debentures were issued. We can again see it has increase to 11.49% due to the issue of debenture amounting 360 millions by Himalayan Bank Ltd. during 2001/02 and we can see again the percentage line decreased in the following year to 10.07 due no debenture was issued. However, after 2003/04 the percentage has been rapidly increasing until 2007/08 because the major portion of debenture issue was carried out during these 5 years period. Out of 14 issues, 12 issues amounting 4650 millions out of total 14 issues amounting to 5103 millions. This also indicates that the bright prospects of the corporate debt market of Nepal.

4.1.2 Valuation of Nepalese Corporate Debt Securities

Bonds like any other financial assets can be valued by estimating the total present value of these flows by using an appropriate discount rate (i.e., market interest rate). This approach is generally much easier to apply to fixed types of securities. This study used the valuation model developed by Brigham and Houston (2001) for valuation of Nepalese corporate debt securities. Valuation of debenture depends on its contractual features as described above. For a standard coupon-bearing bond issued by corporate bodies above mention model is used. As the corporate bond issued by three manufacturing companies (Bottlers Nepal, Jyoti Spinning Mills Ltd., and Shree Ram Sugar Mills Ltd.) had already been matured, only non-matured bond of other seven companies (HBL1, $NIBL_1$, EBL, BOKL, $NIBL_2$, NICBL, NSBIBL, NIBL3, KBL, HBL2, NIBL4 and NBL) valuation has been done. The cash flows consist of interest payments during the life of the bond, plus the amount borrowed (Rs. 1,000 par value) when the bond matures. This study assumes that market interest rate (YTM) remains constant during the maturity period of debentures.

As noted earlier the holder of bond receives a fixed annual interest payment for a certain number of years and a fixed principal repayment (equal to par value) at the time of maturity. Hence, the value of these debentures is presented **(See Table 4.3).**

Table 4.3:

Valuation of Corporate Debt Securities

Companies	MLR	CIR	Par Value (Rs.)	PV (Rs.)	Buy/Sell Decision
$NIBL_1$	4.50%	7.50%	1,000	1,056.83	Buy
EBL	4.28/%	6.00%	1,000	1,063.10	Buy
BOKL	4.45%	6.00%	1,000	1,054.64	Buy
$NIBL_2$	4.45%	6.00%	1,000	1,066.11	Buy
NICBL	4.45%	6.00%	1,000	1,066.11	Buy
NSBIBL	4.45%	6.00%	1,000	1,066.11	Buy
NIBL3	5.50%	6.25%	1,000	1,107.99	Buy
KBL	5.50%	8.00%	1,000	1,127.02	Buy
HBL	6.00%	8.00%	1,000	1,113.40	Buy
NIBL4	6.00%	8.00%	1,000	1,113.40	Buy
NBL	6.00%	8.00%	1,000	1,148.75	Buy

Source: Annex

Table 4.3 shows that NBL debenture value (i.e., Rs.1148.75) is greater than all other

debenture value. Debentures of $NIBL_1$, EBL, BOKL, $NIBL_2$, NICBL, NSBIBL, NIBL3, KBL, HBL and NIBL4 were under priced due to the higher value than their market price. As stated by previous studies, when the market interest rate is equal to the coupon rate the value of bond is equal to its par value. Similarly, when the market interest rate is greater than the coupon rate, the value of bond is less than its par value. And when the market interest rate is less than the coupon rate, the value of a bond is more than its par value. This last concept was strongly supported by Nepalese corporate debt securities. As shown in the table, for NBL market interest rate (i.e., 6.00%) is less than the coupon interest rate (i.e., 8.5%), the present value of NBL (i.e., Rs.1148.75) is more than its par value (i.e., Rs.1000). Similarly, for $NIBL_1$ market interest rate (i.e., 4.45%) is less than the coupon rate (i.e., 7.5%), the present value of $NIBL_1$ (i.e., Rs.1056.83) is more than its par value (i.e., Rs.1000). In the similar manner, coupon rate of EBL, BOKL, $NIBL_2$, NICBL, N SBI BL NIBL3, KBL, HBL and NIBL4 are greater than market interest rate, and due to that their present values are greater than their par values.

The basic concepts of valuation discussed above provide the foundation for investment decisions. A security's investment determines its prices and value. The professional investors follow the more scientific procedure of forming estimates of a security's value before they make a decision to buy or sell the security. Buying-selling decisive rules as, described by Francis (1986), examined this study for Nepalese Corporate debt securities as in the following way:

If a security's market price is below its value, it is under priced and should be bought and held in order to profit from price gains thinking that profit should occur in the future. Similarly, if a security's market price equals its value, the price is in equilibrium and is not expected to change. If the security's market price is above the security's value, the security is overpriced; security should be sold in order to avoid losses. When its prices fall down to the level of its value, then it may be sold short in order to make profit from the expected price decline. As corporate debt securities issued by above mentioned companies coupon rate are greater than market interest rate, their debt securities present value are more than par values. This shows that the above-mentioned debentures are under priced. So, such under priced debenture should be bought in order to made profit in the future from price gain.

4.1.3 Duration of Nepalese Corporate Debt Securities

The duration is a measure of the 'average maturity' of the stream of payments associated with a bond. A bond's duration is considered to be an appropriate measure of its time structure than its years-to-maturity because it reflects the amount and time of every cash flow rather than merely the length of time until the final payment occurs. Duration is directly related to term and inversely related to coupon and yield to maturity. This study has been based on the model developed by F.R. Macaulay (1938) for calculating the weighted average time of Nepalese corporate debt securities.

Table 4.4:

Duration of Nepalese Corporate Debt Securities

Companies	M I R	C I R	Duration	Maturity Period
$NIBL_1$	4.50%	7.50%	5.70 yrs.	7 yrs.
EBL	4.28/%	6.00%	5.89 yrs.	7 yrs.
BOKL	4.45%	6.00%	5.89 yrs.	7 yrs.
$NIBL_2$	4.45%	6.00%	5.89 yrs.	7 yrs.
NICBL	4.45%	6.00%	5.89 yrs.	7 yrs.
NSBIBL	4.45%	6.00%	5.89 yrs.	7 yrs.
NIBL3	5.50%	6.25%	5.81 yrs	7 yrs.
KBL	5.50%	8.00%	5.61 yrs.	7 yrs.
HBL	6.00%	8.00%	5.66 yrs.	7 yrs.
NIBL4	6.00%	8.00%	5.66 yrs.	7 yrs.
NBL	6.00%	8.00%	5.81 yrs	10 yrs.

Source: Annex

The result presented in the **Table 4.4** shows that all the seven corporate debt securities have less actual term-to-maturity than their book-term-to-maturity. KBL duration 5.61 years is less than its maturity period 7 years. Also for KBL, market interest rate is less than coupon interest rate. Similarly, duration of bond of $NIBL_1$, EBL, BOKL, $NIBL_2$, NICBL, NSBIBL, HBL, NIBL4 and NBL are less than their maturity periods and similarly their coupon rates are also higher than market interest rate. This shows that when market interest rate is less than the coupon rate, the duration is lesser than its maturity period. The investors may not wait for whole return until the maturity period. The investor receives income prior to the maturity date as described by Alexander et.al. : (2002).

Similarly, duration and price volatility are closely related. Duration is directly related to price volatility because bonds with longer duration will experience more price volatility if interest rate changes. Bonds with long duration have more price risk than that of short-duration. Therefore, Nepalese corporate debt securities have less price risk because of less duration than their term-to-maturity (i.e., 5.61 years < 7 years for KBL, 5.70 years < 7 years for $NIBL_1$, 5.89 years < 7 years for EBL, 5.89 years < 7 years for BOKL, 5.89 years < 7 years for $NIBL_2$ and so on) **and hence it is safer to invest in debenture in Nepal due to less risk factor**. Furthermore, we can see in the above table that, decreases in bonds coupon rate (i.e., for KBL 8.0% with duration 5.61 years, for $NIBL_1$ 7.5% with duration 5.70 years, for EBL 6% with duration 5.89 years and so on) increases bonds duration **(See Table 4.4)**. This shows that duration is inversely related to coupon interest rate.

4.1.4 Corporate Disclosure and Debenture Market

A good disclosure practice is essential to bring transparency in the securities market. Inadequate disclosure practices and poor transparency discourage potential investors from investing in the securities market. In order to secure investor's confidence and commitment a flow of information is a must as investors can make informed decisions in securities market only with adequate information. Informed decisions of investors not only help to establish price of securities but also help to attract additional investors in the market. (Adhikari, N. 2005).

Securities market requires good corporate disclosure through financial statement annual reports and annual general meeting (AGM). If there is not good corporate disclosure prospective investors in primary as well as secondary market cannot receive good knowledge about corporate sectors past, present and future financial solvency and profitability. They feel problem in making investment decision until they are not aware in the matter and negative thought may come due to poor financial disclosure.

Under the provisions of present securities legislation listed companies are required to provide price sensitive information and other important information immediately to their investors and the NEPSE. After the second amendment in securities exchange Act 1983, the listed companies required to submit their annual as well as half yearly report to SEBON in additional to NEPSE. The amendments made is mandatory that the listed companies should

submit their annual report along with the financial year and half yearly report to SEBON within 60days after expiration of 6 months period. SEBON is continuously informing the listed companies regarding these provisions and following up the companies through regular correspondence and public notice by the end of fiscal year 2007/08 out of 144 listed companies, 117 listed companies have submitted their annual reports or financial statement to SEBON. Even out of 117 listed companies, only 6 companies have submitted their reports to SEBON within the stipulated time as per the second amendment in security exchange Act 1983, which is very poor however there is a developing trend for submitting the reports to SEBON comparing to previous financially years although late.

Table 4.5:

Sector wise Information Disclosure

S.N	Sectors	No. of Listed Companies	No. of companies disclosure Information with in time	No. of companies disclosure Information	Perce
1	Commercial Bank	17	2	16	94.1
2	Developmental Bank	23	2	20	86.9
3	Finance companies	57		48	84.2
4	Insurance Companies	17		12	70.5
5	Hotels	4	1	3	75.0
5	Manufacturing and Processing Companies	18		11	61.1
6	Trading Companies	3	1	3	100.0
8	Others	5		4	80.0
Total		**144**	**6**	**117**	**81.2**

Source: SEBON Annual Report, 2007/08

It can be observed that disclosure of trading companies was complete and highest. Commercial banks overall financial disclosure was second highest and the Manufacturing and Processing Companies was the lowest. Overall listed information disclosure of corporate sector is 81.25 percent seems to be satisfactory but the timely information ratio is only 4.16% out of total listed companies which is very low and timely flow of information is very important which could not be observed. For any investors timely flow of information plays the vital role for making investment decision.

The above analysis shows that there is serious shock to debenture market growth in Nepal due to poor corporate information disclosure. Poor disclosure practice increases uncertainty in the security market investment and diverts investment to other unproductive areas such as

gold, saving deposit, land and building and discretionary items and hence timely information disclosure is one of the major key factors to make investment decision in any securities.

4.1.5 Company wise Issue Approval

Capital market in Nepal is very underdeveloped. Debt capital and corporate bond market is almost non-existence. Secondary market is also in infancy stage. Although 144 companies share are listed, stock trading center on the stock of financial institutions only 25-30 corporate firm stocks are traded in a day. It is generally recognized that the capital markets are not yet effective vehicles for mobilizing long-term capital in Nepal.

Among the 144 listed companies only 10 companies have issued debentures in different years i.e. Bottlers Nepal Ltd, Shree Ram Sugar Mills Ltd, Jyoti Spinning Mills Ltd., Himalayan Bank Ltd, Nepal Investment Bank Ltd., Everest Bank Ltd., Bank of Kathmandu Ltd., Nepal SBI Bank Ltd., Kumari Bank Ltd. and Nabil Bank Ltd. Out of 217 times of total issue of securities only 14 times of debenture issue was done from financial Year 1993/94 to 2007/08 (**See Table 4.3)**. Total debenture issue was amounting Rs.2153 millions against Rs.13701 total securities issued with merely 15.71% which is extremely low.

4.2 Presentations and Analysis of Primary Data

4.2.1 Introduction

This investigation deals with the study of the opinions of respondents with respect to issues and prospects of developing Nepalese corporate bond market. This study is mainly based on questionnaire survey of the opinions of fifty-two respondents. Out of fifty-two respondents, fifteen belongs to companies (i.e., seven from banking sector, six from manufacturing sector, and two from hotel sector), six respondents belongs to issue manager/broker, twenty-two respondents belongs to individual investors and remaining nine respondents belongs to experts group in particular field. The classification of the respondents into listed companies, issue manager/broker, individual investors, and experts has been made in order to systematically analyzing the differences in their opinions with respects to major aspects of Nepalese corporate bond market. These aspects include assessing priority for raising long-

term fund, type of long-term investment preferable, preferred sector debenture issue, major factor hindrances the smooth growth of Nepalese corporate bond market, factors playing key role to attract investors towards corporate bond, reasons for few practice of debenture, and reasons for using bank loan instead of issuing bond.

Furthermore, it also include assessing their view about infrastructure of Nepalese capital market, price sensitive information disclosure system, present pace of corporate bond market growth, and adequacy of existing legal rules and regulations for the growth of Nepalese corporate bond market. The pro forma structured questionnaire and details of responses obtained are presented in Appendix - Annex V and VI respectively. Similarly, the list of respondents is given in Appendix – Annex VII.

In order to assess whether the difference in the opinions of the listed companies, issue manager/broker, individual investors and experts as to the major aspects of corporate bond market in Nepal is significant, chi-square values are computed and the results are presented in the Appendix- Annex VII. Similarly, the response to each choice in those questions where choices are to be ranked is weighted by the value of the rank assigned to it by the respondents. And weighted arithmetic mean is calculated. With the help of this, average weighted arithmetic mean is calculated to find the overall rank for each choice of the listed companies, issue manager/broker, individual investors, experts and all respondents.

4.2.2 Study of Opinions Major Aspects of Corporate Bond Market in Nepal

Q.No.1 *Appropriate Source of Financing for Raising Long-term Fund*

In their overall ranks for raising long-term fund by using different instruments, i.e., common stock, preferred stock, corporate bond, bank loan and others, majority of respondents gave their first priority to option ‘a’, i.e., common stock, second priority to option ‘c’, i.e., corporate bond, third priority to option ‘b’, i.e., preferred stock, fourth priority to option‘d’, i.e., bank loan, and fifth priority to option ‘e’, i.e., others **(See Annex)**.

Table 4.6:

Priority to Appropriate Source of financing for Raising Long-term Fund by all Respondents

Source: Annex

Out of total respondents (i.e., 52), 87% respondents give their first priority to common stock, only 10% respondents give their first priority to corporate bond and 3% respondents give their first priority to bank loan **(See Table 4.6)**. This shows that the majority of the respondents gave first priority to common stocks.

Furthermore, each group response on appropriate source of financing for raising long-term fund is analyzed. The majority of respondents, i.e. 80% listed companies, 83% issue manager/broker, 86% individual investors and 100% experts gave their first priority to common stock for raising long-term fund **(See Table 4.6)**. As the practice of issuing common stock is very popular in the Nepalese capital market, majority of investors are familiar with these securities only.

Options	**L.C.**		**I.M./B**		**Ind. Inv.**		**Experts**		**Total**	
(a)	12	(80)	5	(83)	19	(86)	9	(100)	**45**	**(87)**
(b)	0	(0)	0	(0)	0	(0)	0	(0)	**0**	**(0)**
(c)	1	(7)	1	(17)	3	(14)	0	(0)	**5**	**(10)**
(d)	2	(13)	0	(0)	0	(0)	0	(0)	**2**	**(3)**
(e)	0	(0)	0	(0)	0	(0)	0	(0)	**0**	**(0)**
Total	**15**	**(100)**	**6**	**(100)**	**22**	**(100)**	**9**	**(100)**	**52**	**(100)**

Common stock market has dominated Nepalese capital market. Due to the poor practice of issuing other investment alternatives as preferred stock, corporate bond, and very few availability of investment alternatives majority of investors are familiar with common stock only. Majority of the companies used common stock for raising long-term fund, as it is already popular to investor and easily subscribe. This indicates that if other instruments with superior quality are also practiced for raising long-term fund they may have good prospects of subscribing. Over subscription of banking sectors debenture is the better example here. For making optimum capital structure, to decrease overall cost of capital also fund should be raised through various instruments such as common stock, preferred stock, and bonds etc.

Q.No.2 *Priority for Long-term Investment*

In their overall ranks about the type of long-term investment preferable, majority of respondents gave their first priority to option 'a(i)', i.e., government debt securities, second priority to option 'b', i.e., real assets, third priority to option 'a(ii)', i.e., corporate debt securities **(See Annex)**.

Table 4.7:

Priority for Long-term Investment by all Respondents

Source: Annex

Out of total respondents (i.e., 52), 40% respondents give their first priority to invest in government debt securities, 35% respondents give their first priority to invest in real assets and 25% respondents give their first priority to invest in corporate debt securities. This shows that the majority of the respondents gave first priority to invest in government debt securities, as these securities have least risk. But second highest percentage of respondents gave their first priority to invest in real assets as these have high capital gain and less investment risk. Thirdly, only 25% respondents give first priority to invest in corporate debt securities as these have higher risk in comparison other two alternatives **(See Table 4.7)**. Furthermore, each group response on preferable type of long-term investments is analyzed. The majority of respondents, i.e. 47% listed companies, 50% issue manager/broker, very low i.e., 27% individual investors and 56% experts gave their first priority to invest in government debt

Options	**L.C.**		**I.M./B**		**Ind. Inv.**		**Experts**		**Total**	
(a)(i)	7	(47)	3	(50)	6	(27)	5	(56)	**21**	**(40)**
(a)(ii)	1	(6)	2	(33)	9	(41)	1	(11)	**13**	**(25)**
(b)	7	(47)	1	(17)	7	(32)	3	(33)	**18**	**(35)**
Total	**15**	**(100)**	**6**	**(100)**	**22**	**(100)**	**9**	**(100)**	**52**	**(100)**

securities. But majority of individual investors i.e., 41% give their first priorities to invest in corporate debt securities. Similarly, 47% respondents give first priority to invest in real assets like land and building, gold, silver etc **(See Table 4.7)**. This indicates that Nepalese investors least like corporate debt securities in comparison to government debt securities and real assets, as they have good return with less investment risk.

Q.No.3 *Preference on Choice of Debenture Issue Sector:*

Banking sector, manufacturing sector, hotel, finance companies, and others are option available to respondents for giving their preferences on the choice of debenture issue sector. In their overall ranks about the preference on choice of debenture issue sector, majority of respondents gave their first priority to option ‘a’, i.e., banking sector, second priority to option ‘d’, i.e., finance companies, third priority to option ‘b’, i.e., manufacturing sector,

fourth priority to option ‘c’, i.e., hotel, and fifth priority to other sector **(See Annex)**.

Out of total respondents (i.e., 52), majority of the respondents i.e., 96% respondents have given their first priority on banking sectors debenture issue. Only 2% respondents have given their first priority on finance companies and remaining 2% respondents have given their first priority on manufacturing sector debenture issue. None have given their first priority on hotel and other sectors debenture issue **(See Table 4.8)**.

Table 4.8:

Respondents Preference on choice of Various Sectors Debenture Issue

Options	**L.C.**		**I.M./B.**		**Ind. Inv.**		**Experts**		**Total**	
(a)	15	(100)	6	(100)	20	(90)	9	(100)	**50**	**(96)**
(b)	0	(0)	0	(0)	1	(5)	0	(0)	**1**	**(2)**
(c)	0	(0)	0	(0)	0	(0)	0	(0)	**0**	**(0)**
(d)	0	(0)	0	(0)	1	(5)	0	(0)	**1**	**(2)**
(e)	0	(0)	0	(0)	0	(0)	0	(0)	**0**	**(0)**
Total	**15**	**(100)**	**6**	**(100)**	**22**	**(100)**	**9**	**(100)**	**52**	**(100)**

Source: Annex

Furthermore, while analyzing each group responses on their priority we see these responses. The majority of respondents, i.e. 100% listed company, 100% issue manager/broker, 90% individual investor and 100% experts have given their first priority on banking sector debenture issue **(See Table 4.8)**.

This shows that banking sectors debenture issue is most preferable to majority of respondents, which is due to the reason that they find this sector less risky for investment in comparison to other sector. Then finance companies and manufacturing sectors debenture issue is preferable. So, all other sectors should disclose their performance reports like information to the general public or investors in order to attract them towards their debenture securities.

Testing of hypothesis in Q. No. 3

Hypothesis No. 1

Null Hypothesis (H_o): There is no significant difference between observed and expected frequencies regarding to the choice of various sector’s debenture.

Alternative Hypothesis (H_1): There is significant difference between observed and expected frequencies regarding to the choice of various sector's debenture.

Test Statistics under H_o,

$$\chi^2 = \sum \frac{(O-E)^2}{E}$$

$\chi^2 = 1.896017$

Level of significance (α) = 0.05

Degree of freedom (d. f.) = (r-1) (c-1) = (5-1) (4-1) = 12

Critical Value or Tabulated Value = the critical value of χ2 at 5% level of significance and 12 d. f. is 21.02607.

Conclusion: Since, the calculated value of χ^2 is less than the tabulated value (i.e., 1.896017< 21.02607), we accept the null hypothesis (H_o) at 5% level of significance and 12 d. f., i.e., there is no significant difference between observed and expected frequencies regarding to the choice of various sector's debenture **(See Annex)**.

To test whether the difference in the opinions of the respondents is significant, the chi-square test is employed. The computed chi-square value is 1.896017 and critical or tabulated value at 5% level of significance and 12 d. f. is 21.02607. It can, therefore, be stated that opinions of four responding groups are similar and that there is no significant difference with respect to the investment in debt securities of banking sectors.

Q.No.4 *Major Factors that Hinder the Smooth Growth of Nepalese Corporate Bond Market:*

In their overall ranks for the major factors that hinder the smooth growth of Nepalese corporate bond market, majority of the respondents gave their first priority to option 'c', i.e., lack of effective and efficient bond market, second priority to option 'a', i.e., lack of investors awareness towards debt securities, third priority to option 'b', i.e., limited supply of quality bonds, fourth priority to option 'd', i.e., lack of capital gain opportunity, fifth priority to option 'e', i.e., lack of credit rating agency, and sixth priority to option 'f', i.e., poor practice of information disclosure by private organization **(See Annex)**.

Out of total (i.e., 52) respondents, 52% of them agree that the major factor the Nepalese debt market cannot growth smoothly, is due to lack of investors' awareness towards debt securities, 17% of the respondents agree with the lack of effective and efficient bond market. And 15% agree with the limited supply of quality bonds. Only 10% of respondents agree with lack of capital gain opportunity, 8% agree with the lack of credit rating agency and remaining 8% agree with the poor practice of information disclosure by private organization **(See Table 4.9)**.

Options	**L.C.**		**I.M./B.**		**Ind. Inv.**		**Experts**		**Total**	
(a)	8	(54)	3	(50)	9	(41)	2	(22)	**22**	**(42)**
(b)	2	(13)	1	(17)	2	(9)	3	(34)	**8**	**(15)**
(c)	2	(13)	1	(17)	4	(18)	2	(22)	**9**	**(17)**
(d)	0	(0)	0	(0)	4	(18)	1	(11)	**5**	**(10)**
(e)	1	(7)	0	(0)	2	(9)	1	(11)	**4**	**(8)**
(f)	2	(13)	1	(16)	1	(5)	0	(0)	**4**	**(8)**
Total	**15**	**(100)**	**6**	**(100)**	**22**	**(100)**	**9**	**(100)**	**52**	**(100)**

Table 4.9:

Priority for Major Factors that Hinders the Smooth Growth of Nepalese Corporate Bond Market by all Respondents

Source: Annex

Furthermore, while analyzing each group responses on their priority we see these responses. The majority of respondents, i.e. 54% listed company, 50% issue manager/broker and 41% individual investor, and only 22% experts gave the first priority to lack of investors awareness towards debt securities. But the majority of respondents from experts group (i.e. 34% experts) gave the first priority to limited supply of quality bonds **(See Table 4.9)**. This shows that the important factor for the smooth growth of Nepalese corporate bond market is investors' awareness.

There are many more tools to make investor awareness about corporate bond market. Among them, issuing the bond in the capital market is one and disclosure of price sensitive information is the other. If the bonds are not issued, how they know about that. Similarly without the knowledge of price sensitive information of bond issuing companies, how they know the financial background, performance etc. of the companies that attracts them towards their debt securities. So, for the growth of corporate bond market the bond issuing companies should disclose its financial performance time to time. Such timely disclosure of price

sensitive information helps to attract the investors or public towards their debt securities.

Testing of hypothesis in Q. No. 4

Hypothesis No. 2

Null Hypothesis (H_o): There is no significant difference between observed and expected opinions regarding to the reason for the slow growth of Nepalese corporate bond market.
Alternative Hypothesis (H_1): There is significant difference between observed and expected opinions regarding to the reason for the slow growth of Nepalese corporate bond market.

Test Statistics under H_o,

$$\chi^2 = \sum \frac{(O-E)^2}{E}$$

$\chi^2 = 15.50539$

Level of significance (α) = 0.05
Degree of freedom (d. f.) = (r-1) (c-1) = (6-1) (4-1) = 15
Critical Value or Tabulated Value = the critical value of χ2 at 5% level of significance and 15 d. f. is 24.99579.

Conclusion: Since, calculated value of χ^2 is less than the tabulated value (i.e., 15.50539< 24.99579), we accept the null hypothesis (H_o) at 5% level of significance and 15 d. f., i.e., there is no significant difference between observed and expected opinions regarding to the reason for the slow growth of Nepalese corporate bond market **(See Annex)**.
To test whether the difference in the opinions of the respondents is significant, the chi-square test is employed. The computed chi-square value is 15.50539 and critical or tabulated value at 5% level of significance and 15 d. f. is 24.99579. It can, therefore, be stated that opinions of four responding groups are similar and that there is no significant difference regarding the factors that hinder the smooth growth of Nepalese corporate bond market.

Q.No.5 *Factors that Plays Significant Role to Attract Investors towards Corporate Bond:*

In their overall ranks for the factors that plays significant role to attract investors towards corporate bond, majority of the respondents gave their first priority to option 'a', i.e., declining interest rate on deposit, second priority to option 'b', i.e., less risky in comparison to common stock and preferred stock, third priority to option 'c', i.e., regular interest income, fourth priority to option'd', i.e., liquid assets **(See Annex)**.

Options	**L. C.**		**I. M / B.**		**Ind. Inv.**		**Expert**		**Total**	
(a)	8	(54)	2	(33)	11	(50)	8	(89)	**29**	**(56)**
(b)	5	(33)	3	(50)	5	(23)	0	(0)	**13**	**(25)**
(c)	2	(13)	1	(17)	4	(18)	0	(0)	**7**	**(13)**
(d)	0	(0)	0	(0)	2	(9)	1	(11)	**3**	**(6)**
Total	15	(100)	6	(100)	22	(100)	9	(100)	**52**	**(100)**

Table 4.10:

Factors that plays Significant Role to Attract Investors towards Corporate Bond

Source: Annex

Out of total respondents (i.e., 52), 56% gives the first priority to declining interest rate on deposit because the rate of interest on deposit is in decreasing trend. Investors who deposit his/her fund or money in time deposit for certain year are attracting towards debt securities. This is due to the reason that, the rate of time deposit is lower than the coupon rate of debenture issues. And 25% respondents give first priority to less risky in comparison to common stock and preferred stock. As Nepalese investors are risk averter they likes to invest in less risky securities, and debt securities match their choice. Similarly, 13% respondents give first priority to regular interest income and remaining 6% respondents give their first priority to liquid assets **(See Table 4.10)**. Risk averter investors generally demand fixed return with low risk, and as Nepalese investors are risk averter, they prefer corporate bond.

Furthermore, while analyzing each group responses on their priority we see these responses. The majority of respondents, i.e. 54% listed company, only 33% issue manager/broker, 50% individual investor and 89% experts have given their first priority on declining interest rate on deposit. But the majority of respondents from issue manager/broker group (i.e. 50% issue manager/broker) gave the first priority to less risky in comparison to common stock and preferred stock **(See Table 4.10)**.

As there are very few investment alternatives available in Nepalese capital market, if

debenture is issued at that time investors gets an opportunity to invest on it. So, if the quality bonds are issued then surely these fixed income securities influence the investors towards corporate bond. Thus, the major factor influencing investors towards corporate bond is declining interest rate on deposit and less risky in comparison to common stock and preferred stock.

Q.No.6 *Reasons for Few Practice of Debenture by Countable number of Corporate Bodies:*

In their overall ranks on reasons for few practice of debenture by countable number of corporate bodies, majority of the respondents gave their first priority to option 'b', i.e., lack of sound debt market in Nepal, second priority to option 'd', i.e., lengthy process of issuing as well as ineffective rules and regulations, third priority to option 'a', i.e., credit oriented transaction have dominated debenture market, fourth priority to option 'e', i.e., increase in financial risk, and fifth priority to option 'c', i.e., political instability **(See Annex)**.

Out of total respondents (i.e., 52), 50% respondents give their first priority to lack of sound debt market in Nepal, 15% respondents give their first priority to lengthy process of issuing as well as ineffective rules and regulations, and rest of the respondents give their first priority to political instability and credit oriented transaction have dominated debenture market (See Table 4.10). This shows that the major reasons for few practice of debenture by countable number of corporate bodies is due to the lack of sound debt market in Nepal. Similarly, lengthy process of issuing as well as ineffective rules and regulations is the second major reasons for few practice of debenture by countable number of corporate bodies.

Options	**L.C.**		**I.M./B**		**Ind. Inv.**		**Experts**		**Total**	
(a)	1	(7)	1	(17)	4	(18)	1	(11)	**7**	**(13)**
(b)	10	(66)	3	(50)	10	(46)	3	(33)	**26**	**(50)**
(c)	1	(7)	1	(16)	4	(18)	1	(11)	**7**	**(14)**
(d)	2	(13)	1	(17)	2	(9)	3	(34)	**8**	**(15)**
(e)	1	(7)	0	(0)	2	(9)	1	(11)	**4**	**(8)**
Total	**15**	**(100)**	**6**	**(100)**	**22**	**(100)**	**9**	**(100)**	**52**	**(100)**

Table 4.11:

Priority of Reasons for Few Practice of Debenture by Countable number of Corporate Bodies (Viewed by all Respondents)

Source: Annex

Furthermore, each group response on reasons for few practice of debenture by countable number of corporate bodies is analyzed. The majority of respondents, i.e. 66% listed companies, 50% issue manager/broker, 46% individual investors and 33% experts gave their first priority to lack of sound debt market in Nepal. Similarly, 34% experts gave their first priority to lengthy process of issuing as well as ineffective rules and regulations **(See Table 4.11)**. This shows that systematic growth of Nepalese debt market is required to attract investors and issuers towards it. Similarly, lengthy process of issuing as well as ineffective rules and regulations should be revised to make it friendly to bond investor and issuer.

Q.No.7 *Reasons for Using Bank Loan Instead of Issuing Bond by Nepalese Organization:*

In their overall ranks on reasons for using bank loan instead of issuing bond by Nepalese organization, majority of the respondents gave their first priority to option 'a', i.e., bank loan is easily available, second priority to option 'b', i.e., collection of funds by issuing bond is a lengthy and difficult process, third priority to option 'c', i.e., cost of bank loan is less than that of bond issue, and last priority to others **(See Annex)**.

Out of total respondents (i.e., 52), 77% respondents give their first priority to bank loan instead of bond issue as it is easily available, 15% respondents give their first priority to bank loan as the collection of funds by issuing bond is a lengthy and difficult process, and 8% respondents give their first priority to bank loan as the cost of bank loan is less than that of bond issue **(See Table 4.12)**.

Table 4.12

Priority Reasons for using Bank Loans over Issuing Bond by Nepalese Organization (Viewed by Respondents)

Source: Annex

Furthermore, each group response on reasons for using bank loan instead of issuing bond is analyzed. The majority of respondents, i.e. 80% listed companies, 50% issue manager/broker, 77% individual investors and 89% experts gave their first priority to lack of sound debt market in Nepal. Similarly, 50% of issue manager/broker gave their first priority to issue bank loan, as the collection of funds by issuing bond is a lengthy and difficult process. **(See Table 4.12)**. As bank loan is less costly and easily available source of financing, majority of the respondents give their first priority in using bank loan instead of issuing bond. However, bank loan is suitable for short term financing and bond issue is suitable for long-term financing.

Testing of hypothesis in Q.No.7

Hypothesis No. 3

Options	**L.C.**		**I.M./B**		**Ind. Inv.**		**Experts**		**Total**	
(a)	12	(80)	3	(50)	17	(77)	8	(89)	**40**	**(77)**
(b)	2	(13)	3	(50)	2	(9)	1	(11)	**8**	**(15)**
(c)	1	(7)	0	(0)	3	(14)	0	(0)	**4**	**(8)**
(d)	0	(0)	0	(0)	0	(0)	0	(0)	**0**	**(0)**
Total	**15**	**(100)**	**6**	**(100)**	**22**	**(100)**	**9**	**(100)**	**52**	**(100)**

Null Hypothesis (H_0): There is no significant difference between observed and expected opinion regarding to the use of bank loan instead of issuing corporate bond.

Alternative Hypothesis (H_1): There is significant difference between observed and expected opinion regarding to the use of bank loan instead of issuing corporate bond.

Test Statistics under H_o,

$$\chi^2 = \sum \frac{(O-E)^2}{E}$$

$\chi^2 = 2.9064$

Level of significance (α) = 0.05

Degree of freedom (d. f.) = (r-1) (c-1) = (4-1) (4-1) = 9

Critical Value or Tabulated Value = the critical value of χ2 at 5% level of significance and 9 d. f. is 16.91898.

Conclusion: Since, the calculated value of χ^2 is less than the tabulated value (i.e., 2.906433< 16.91898), we accept the null hypothesis (H_o) at 5% level of significance and 9 d. f., i.e., there is no significant difference between observed and expected frequencies regarding to the use of bank loan instead of issuing corporate bond **(See Annex)**.

To test whether the difference in the opinions of the respondents is significant, the chi-square test is employed. The computed chi-square value is 2.906433 and critical or tabulated value at 5% level of significance and 9 d. f. is 16.91898. It can, therefore, be stated that opinions of four responding groups are similar and that there is no significant difference with respect to the use of bank loan instead of issuing corporate bond.

Q.No.8 *Adequacy of the Infrastructure of Nepalese Capital Market for the growth of Corporate Bond Market.*

A question has been asked to the total number of respondents about adequacy of the infrastructure of Nepalese capital market for the growth of corporate bond market. Out of total respondents (i.e., 52), 88% of respondents replied as inadequate and only 12% respondents replied as adequate **(See Table 4.13)**. The majority of respondents replied that the infrastructure of Nepalese capital market is inadequate for the growth of corporate bond market.

Table 4.13:

Profile of Respondents on Adequacy of Nepalese Capital Market for the Growth of Corporate Bond Market

Options	L.C.		I.M./B		Ind. Inv.		Experts		Total	
Adequate	1	(7)	2	(33)	1	(5)	2	(22)	**6**	**(12)**
Inadequate	14	(93)	4	(67)	21	(95)	7	(78)	**46**	**(88)**
Total	**15**	**(100)**	**6**	**(100)**	**22**	**(100)**	**9**	**(100)**	**52**	**(100)**

Source: Annex

As the Nepalese capital market is in the emerging stage it lacks adequate infrastructure facilities. This shows that the infrastructure facilities are not adequate for the growth of corporate bond market.

Furthermore, while analyzing each group responses on adequacy of existing legal rules and regulations for the growth and development of Nepalese corporate bond market. The majority of respondents, i.e. 93% listed companies, 67% issue manager/brokers, 95% individual investors and 78% experts have opined that the infrastructure of Nepalese capital market is inadequate but the remaining opined adequate for the growth of corporate bond market **(See Table 4.13)**. This indicates that there is not adequate infrastructure of capital market for the growth of corporate bond market in Nepal.

Q.No.9 *Due to the Lack of Large Corporate Houses, Various kinds of Debt Instruments are not practiced in Nepal:*

Another question has been asked in order to analyze poor practice of debt instruments in Nepal, due to the lack of large corporate houses. Various kinds of debt instruments are not practiced in Nepal. Out of total respondents (i.e., 52), 69% respondents agree and only 31% respondents disagree with the statement that due to the lack of large corporate houses various kinds of debt instruments are not practiced in Nepal **(See Table 4.14)**. The majority of respondents agree that the large flotation costs at the time of issue can be bear by large corporate houses only. Also investors' only likes the debt securities of large and better performing companies. These big corporate houses can raise required funds easily and they didn't need to issue bonds like securities. Therefore only countable companies have been practicing issuing corporate bond like securities.

Table 4.14:
Profile of Respondents on Poor Practice of Various kinds of Debt Instruments, due to Lack of Large Corporate Houses

Options	L.C.		I.M./B		Ind. Inv.		Experts		Total	
Yes	10	(67)	3	(50)	17	(77)	6	(67)	**36**	**(69)**
No	5	(33)	3	(50)	5	(23)	3	(33)	**16**	**(31)**
Total	**15**	**(100)**	**6**	**(100)**	**22**	**(100)**	**9**	**(100)**	**52**	**(100)**

Source: Annex

Furthermore, to analyze each group response on agree or disagree on the statement that due to lack of large corporate houses various kinds of debt instruments are not practiced in Nepal. The majority of respondents, i.e. 67% listed companies, 50% issue manager/brokers, 77% individual investors and 67% experts agree with the statement and remaining disagree with the statement **(See Table 4.14)**. This indicates that due to the lack of large corporate houses various kinds of debt instrument are not practiced in Nepal.

Analyzing the sample survey, the researcher concludes that one of the important factors of developing corporate debt market is available of large Business organization or sufficient large business organization. But in this matters Nepal is very poor because at first, large

Q.No.10 *Is there Adequate Price Sensitive Information Disclosure System of Private Organization?*

A question has been asked to the total number of respondents about adequacy of price sensitive information disclosure system of private organization. Out of total respondents (i.e., 52), 85% respondents disagree but 15% respondents agree with the adequacy of price sensitive information system of private organization **(See Table 4.15)**. This shows that majority of the Nepalese organization are unable to disclose price sensitive information such as income statement, balance sheet, cash flows, profit/loss a/c, financial ratios, etc. This information is very helpful for making investment decision on the securities issued by them. However, all sectors information disclosure is not poor.

Table 4.15:

Profile of Respondents on Adequacy of Price Sensitive Information Disclosure System of Private Organization

Options	L.C.		I.M./B		Ind. Inv.		Experts		Total	
Adequate	1	(7)	1	(17)	4	(18)	2	(22)	**8**	**(15)**
Inadequate	14	(93)	5	(83)	18	(82)	7	(78)	**44**	**(85)**
Total	**15**	**(100)**	**6**	**(100)**	**22**	**(100)**	**9**	**(100)**	**52**	**(100)**

Source: Annex

Furthermore, each group response on adequacy of price sensitive information disclosure system of private organization is analyzed. The majority of respondents, i.e. 93% listed companies, 83% issue manager/broker, 82% individual investors and 78% experts agree that the price sensitive information system of private organization is inadequate **(See Table 4.15)**. This indicates that timely disclosure of price sensitive information related with their financial performance is essential for the growth of Nepalese corporate bond market and capital market too.

Q.No.11 *Political Instability hinders the Growth of Corporate Bond Market in Nepal:*

A question has been asked to the total number of respondents about whether the political instability hinders the growth of Nepalese corporate bond market or not. Out of total respondents (i.e., 52), 75% respondents agree but 25% respondents disagree with the statement that political instability hinders the growth of Nepalese corporate bond market **(See Table 4.16)**. As political instability hinders the growth of each and every sector, surely capital market and corporate bond market is also not free from it. This shows that for the overall development of not only corporate bond market but also each and every sector, political stability is the necessity. As the whole economy is in down turn, how far is it possible that corporate bond market be safe?

Table 4.16:

Profile of Respondents on Political Instability hinders the Growth of Nepalese Corporate Bond Market

Options	**L.C.**		**I.M./B**		**Ind. Inv.**		**Experts**		**Total**	
Yes	15	(100)	5	(83)	16	(73)	3	(33)	**39**	**(75)**
No	0	(0)	1	(17)	6	(27)	6	(67)	**13**	**(25)**
Total	**15**	**(100)**	**6**	**(100)**	**22**	**(100)**	**9**	**(100)**	**52**	**(100)**

Source: Annex

Furthermore, each group response on whether the political instability hinders the growth of Nepalese corporate bond market is analyzed. The majority of respondents, i.e. 100% listed

companies, 83% issue manager/broker, 73% individual investors and very few i.e., only 33% experts agree with the statement that the political instability hinder the growth of Nepalese corporate bond market. But the majority of respondents i.e., 67% experts disagree with the statement that the political instability hinders the growth of Nepalese corporate bond market **(See Table 4.16)**. This means that only political instability is not the major factor that hinders the growth of Nepalese corporate bond market.

Q.No.12 *Credit Oriented Transaction has Dominated Nepalese Corporate Bond Market:*

A question has been asked to the total number of respondents about whether the credit-oriented transaction has dominated Nepalese corporate bond market or not. Out of total respondents (i.e., 52), 54% respondents agree but 46% respondents disagree with the statement that the credit-oriented transaction has dominated Nepalese corporate bond market **(See Table 4.17)**. This shows that the credit-oriented transaction has dominated the growth Nepalese corporate bond market. The credit facility provided by large business houses if fulfills medium businesses fund requirement, then there is no need of issuing corporate bond. Similarly, if a large corporate house fulfills their fund requirement by using credit facilities, then there is no need of issuing corporate bond in the capital market.

Table 4.17:

Profile of Respondents view on Credit Oriented Transaction has Dominated Nepalese Corporate Bond Market

Options	**L.C.**		**I.M./B**		**Ind. Inv.**		**Experts**		**Total**	
Yes	10	(67)	3	(50)	12	(55)	3	(33)	**28**	**(54)**
No	5	(33)	3	(50)	10	(45)	6	(67)	**24**	**(46)**
Total	**15**	**(100)**	**6**	**(100)**	**22**	**(100)**	**9**	**(100)**	**52**	**(100)**

Source: Annex

Furthermore, each group response on whether the credit-oriented transaction has dominated Nepalese corporate bond market is analyzed. The majority of respondents, i.e. 67% listed companies, 50% issue manager/broker, 55% individual investors and very few i.e., only 33% experts agree with the statement that the political instability hinder the growth of Nepalese

corporate bond market. But the majority of respondents i.e., 67% experts and 50% issue manager/broker, 45%individual investors and only 33% listed companies disagree with the statement that the credit oriented transaction has dominated Nepalese corporate bond market **(See Table 4.17)**. This shows that credit oriented transaction have some impact on corporate bond market. However, credit oriented transaction is not the major factor that hinders the growth of corporate bond market.

Q.No.13 *Present Pace of Corporate Bond Market Growth in Nepal:*

A question has been asked to the total number of respondents to get their view about present pace of corporate bond market growth in Nepal. Out of total respondents (i.e., 52), 77% respondents are of the view that present pace of corporate bond market growth in Nepal is poor, 21% respondents are of the view that it is satisfactory, and very few i.e., 2% respondents are of the view that it is very good **(See Table 4.18)**. This indicates that if some homework is done (i.e., revising legal rules and regulation and making it workable for the mutual benefits of issuer and investor, providing better infrastructure facilities continuously for the systematic growth of capital market, punishing the cheater, making computerized system instead of open cry in NEPSE, establishing credit rating agencies, and making compulsion for timely disclosure of information etc.) then surely corporate bond market move towards its development.

Table 4.18:

Profile of Respondents on Present Pace of Corporate Bond Market Growth in Nepal

Options	L.C.		I.M./B		Ind. Inv.		Experts		Total	
Very good	1	(7)	0	(0)	0	(0)	0	(0)	**1**	**(2)**
Satisfactory	4	(27)	3	(50)	4	(18)	0	(0)	**11**	**(21)**
Poor	10	(66)	3	(50)	18	(82)	9	(100)	**40**	**(77)**
Don't know	0	(0)	0	(0)	0	(0)	0	(0)	**0**	**(0)**
Total	**15**	**(100)**	**6**	**(100)**	**22**	**(100)**	**9**	**(100)**	52	**(100)**

Source: Annex

Furthermore, each group view on present pace of corporate bond market growth in Nepal is analyzed. The majority of respondents, i.e. 66% listed companies, 50% issue manager/broker, 82% individual investors and 100% experts are of the view that present pace of corporate

bond market growth in Nepal is poor. Also majority of respondents i.e., 50% issue manager/broker, 27% issue listed companies and 18% individual investors are of the view that present pace of corporate bond market growth in Nepal is satisfactory **(See Table 4.18)**. This shows that a lot of work is needed from the concerned authority, government bodies, SEBON, NEPSE and other concerned experts group for the development of corporate bond market that is still in the creeping stage of its development.

Q.No.14 *Are the Existing Legal Rules and Regulations Adequate for the Growth and Development of Nepalese Corporate Bond Market:*

It has been asked one question that "Are the existing legal rules and regulations adequate for the growth and development of Nepalese corporate bond market?" to listed companies, issue manager/brokers, individual investors and experts. Out of total respondents (i.e., 52), 87% respondents replied as inadequate and only 13% respondents replied as adequate **(See Table 4.19)**. The majority of respondents replied that existing legal rules and regulations are inadequate for the growth and development of Nepalese corporate bond market. As the Nepalese capital market is in the creeping stage, proper legal rules and regulations for the protection of investors' rights and their mutual benefits are not seen working.

Table 4.19:

Profile of Respondents on Adequacy of Existing Legal Rules and Regulations for the Growth

and Development of Nepalese Corporate Bond Market

Options	**L.C.**		**I.M./B**		**Ind. Inv.**		**Experts**		**Total**	
Yes	2	(13)	2	(33)	2	(9)	1	(11)	**7**	**(13)**
No	13	(87)	4	(67)	20	(91)	8	(89)	**45**	**(87)**
Total	**15**	**(100)**	**6**	**(100)**	**22**	**(100)**	**9**	**(100)**	**52**	**(100)**

Source: Annex

Furthermore, while analyzing each group responses on adequacy of existing legal rules and regulations for the growth and development of Nepalese corporate bond market. The majority of respondents, i.e. 87% listed companies, 67% issue manager/brokers, 91% individual

investors and 89% experts have opined that existing legal rules and regulations are inadequate for the growth and development of Nepalese corporate bond market **(See Table 4.19)**. This indicates that existing legal rules and regulations are inadequate for influencing investors and issuers towards corporate bond, hence proper growth and development of Nepalese corporate bond market is not seen.

4.3 Main Findings

Analysis of primary and secondary data relating to Nepalese corporate bond market helps to draw some major findings relating to issues and prospects of developing corporate bond market.

4.3.1 Major Findings from the Analysis of Secondary Data

The history of corporate debt securities in Nepal started with the issuance of debenture by Bottlers Nepal Ltd. in the FY 1986/87. It had issued 5,000 number of debenture with par value Rs. 1,000 per debenture. After that JSML and SRSML had issued 20,000 and 93,000 number of debentures respectively with par value Rs.1, 000. Heavily under subscription of SRSML debenture by 75,870 number of debenture showed that investors were not interested towards manufacturing sectors debenture securities.

After the issuance of SRSML convertible debenture, HBL was the first bank to issue debenture of amount Rs. 360 million in the FY 2001/02. It was heavily over subscribed i.e., 1.12 times. Similarly thereafter NIBL, EBL, BOKL, NICBL, and NSBIBL had issued six debenture securities and their high over subscription indicates the better future prospects of Nepalese corporate bond market.

Though the coupon rate of debenture (14%) of SRSML was higher than the market interest rate (10.25%), it was heavily under subscribed instead of attracting large number of investors. But, as stated in the textbook by Van Horne (2002), Alexander (1999), and Ronald and Donald (2000); higher coupon rate always attracts the large no of investors. Very low subscription of SRSML debenture may be due to lack of investors' awareness towards debenture securities. But the coupon rate of debenture securities of banking sector higher than market interest rate agrees with the writers' statement by attracting large number of investors. If this result continues, corporate debt securities will attract large number of investors. This

means, more of such bond issues can be expected in the future, particularly from the banks to meet their higher capital requirement under Nepal Rastra Bank directives.

As stated by previous studies, when the market interest rate is less than the coupon rate, the value of a bond is more than its par value. This concept was strongly supported by Nepalese corporate debt securities. The market interest rate (i.e., 4.45%) of NIBL1 is less than the coupon interest rate (i.e., 7.5%), the present value of NIBL1 (i.e., Rs.1056.83) is more than its par value (i.e., Rs.1000). In the similar manner, coupon rate of EBL, BOKL, $NIBL_2$, NICBL, NSBIBL, NIBL3, KBL, HBL, NIBL4 and NBL are greater than market interest rate, and due to that their present values are greater than their par values. This shows that the above mentioned debentures are under priced. So, such under priced debenture should be bought in order to made profit in the future from price gain.

The result of duration computed above shows that all the seven corporate debt securities have less actual term-to-maturity than their book-term-to-maturity. Also their coupon rates are higher than market interest rate. This shows that when market interest rate is less than the coupon rate, the duration is less than its maturity period. The investor receives income prior to the maturity date as described by Alexander et.al.2002. Furthermore, we see that decreases in bonds coupon rate increases bonds duration. This shows that duration is inversely related to coupon interest rate. As stated by F.R. Macaulay, less duration always attract the large number of investors because investor get their whole return before maturity period and less price risk. Less duration of above mentioned Nepalese corporate debt securities and their high over subscription shows that investors are attracted towards it resembles with Macaulay's statement. Therefore, if such types of circumstances continue in future, investor may buy the corporate debt securities of other sectors too.

4.3.2 Major Findings from the Analysis of Primary Data

After analysis of research variables relating to Nepalese corporate bond market, important findings relating to issues and prospects of developing corporate bond market has been obtained. Questionnaires responded by respondents (i.e., listed companies, issue manager/broker, individual investors and experts) has been analyzed through chi-square test and other statistical tools. Findings drawn have been presented as follows.

Common stock market has dominated Nepalese capital market. Due to the poor practice of issuing other investment alternatives as preferred stock, corporate bond, and very few availability of investment alternatives majority of investors are familiar with common stock only. Majority of the companies used common stock for raising long-term fund, as it is already popular to investors and easily subscribe. This may be the major issue of Nepalese corporate bond market. This indicates that if other instruments with superior quality are also practiced for raising long-term fund they may have good prospects of subscribing. Over subscription of banking sectors debenture is the better example here. This shows some prospects of better future corporate bond market.

Nepalese investors least like corporate debt securities in comparison to government debt securities and real assets, as they have good return with less investment risk. Investors' particular preferences on debenture issuing companies are also being another serious issue in the growth of corporate debenture market. Investors have more preference on banks and finance companies while poor preference on manufacturing and trading companies.

The majority of the respondents view that lack of investors' awareness towards corporate bond, limited supply of quality bonds, lack of efficient and effective bond market are the major factor that hinders the smooth growth of Nepalese corporate bond market. This indicates that to develop investors' awareness towards debt securities and to encourage the companies for supplying quality bonds is another major issue of corporate debt market in Nepal. The result of hypothesis test also agrees with it. However, by issuing the quality bond in the capital market is one and timely disclosure of price sensitive information is the other to cope with these problems. If the bonds are not issued, how investors know about that. Similarly without getting the proper information of bond issuing companies, how they know the financial background, past performance etc. of the companies that attracts them towards their debt securities. So, if above issues are solved then we may see some prospects of corporate bond market

Investors who deposit his/her fund or money in time deposit for certain year are attracting towards debt securities. This is due to the reason that, the rate of time deposit is lower than the coupon rate of debenture issues. As Nepalese investors are risk averter they like to invest in less risky securities, and debt securities match their choice. However, declining coupon

rate are unable to cover increasing inflation rate, this may be the serious issue of Nepalese corporate bond market. But, if this issue is managed some bright future prospects of corporate bond market is seen.

We find that the major reason for few practice of debenture by countable number of corporate bodies is due to the lack of sound debt market in Nepal. Similarly, lengthy process of issuing as well as ineffective rules and regulations is the second major reasons. This is the other serious issue of Nepalese corporate bond market. This shows that systematic growth of Nepalese debt market is required to attract investors and issuers towards it. Similarly, lengthy process of issuing as well as ineffective rules and regulations should be revised to make it friendly to bond investor and issuer.

Majority of the respondents agree that the reasons for using bank loan instead of issuing bond by Nepalese organization are: bank loan is easily available, collection of funds by issuing bond is a lengthy and difficult process, and cost of bank loan is less than that of bond issue. The result of hypothesis test agrees with this statement. Though the cost of bank loan is less (i.e., saves high flotation costs) in short-term, it is higher in long-term (as the lending rate of bank is high). Nepalese bond issuers are not aware of this fact. So, if we make them aware about this fact, then some future bright prospects of corporate bond market is seen.

Majority of the respondents replied that the infrastructure facility of Nepalese capital market is inadequate for the growth of corporate bond market. As the Nepalese capital market is in the emerging stage it lacks adequate infrastructure facilities. If this issues is solved then some good future prospects of corporate bond market is seen.

Majority of the respondents agree with the statement that due to the lack of large corporate houses various kinds of debt instruments are not practiced in Nepal. They agree that the large flotation costs at the time of issue can be bear by large corporate houses only. Also investors' only likes the debt securities of large and better performing companies. These big corporate houses can raise required funds easily and they didn't need to issue bonds like securities. Therefore only countable companies have been practicing issuing corporate bond like securities.

Majority of the Nepalese organization are unable to disclose price sensitive information such

as income statement, balance sheet, cash flows, profit/loss a/c, financial ratios, etc. This information is very helpful for making investment decision on the securities issued by them. Information disclosure of manufacturing and trading and hotel sector is not good. So, the major issue of Nepalese corporate bond market is poor practice of price sensitive information disclosure system.

Political instability is another issue that hinders the smooth growth of Nepalese corporate debentures market. As political instability hinders the growth of each and every sectors, surely capital market and corporate bond market is also not free from it. Political insatiability occurred due to domestic war, emergency declarations, strike and lockout etc. hinders the growth of Nepalese corporate bond market directly and indirectly.

The credit facility provided by large business houses if fulfills medium businesses fund requirement, then there is no need of issuing corporate bond. Similarly, if a large corporate house fulfills their fund requirement by using credit facilities, then there is no need of issuing corporate bond in the capital market. This shows that credit oriented transaction have some impact on corporate bond market. However, credit oriented transaction is not the major factor that hinders the growth of corporate bond market.

The present pace of corporate bond market growth in Nepal is poor as only very few practices of issuing it is seen. This indicates that if some homework is done (i.e., revising legal rules and regulation and making it workable for the mutual benefits of issuer and investor, providing better infrastructure facilities continuously for the systematic growth of capital market, punishing the cheater, making computerized system instead of open cry in NEPSE, establishing credit rating agencies, and making compulsion for timely disclosure of information etc.) then surely corporate bond market may move towards its development.

The existing legislative provisions regarding debentures markets are insufficient. Investors' interest protection act, trustee-listing provision of debenture in NEPSE is insufficient. Existing legal rules and regulations are inadequate for influencing investors and issuers towards corporate bond, hence proper growth and development of Nepalese corporate bond market is not seen. This is the serious issue of corporate bond market.

NEPSE and SEBON have weak and ineffective working system. NEPSE is being the trading

place of limited listed shares. Present trading of securities in NEPSE is based on traditional methods. There is not trading of securities by computerized system. SEBON is not able to monitor Nepalese capital market effectively. So it indicates that poor infrastructure is one of the major issues of developing Nepalese corporate bond market.

CHAPTER-V

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter summarizes the whole study in three sections. Section first includes the summary of the study. The second section presents the conclusion of the study. The third section includes some recommendations provided to the concerned government bodies, general investors, and corporate sector for the systematic development of Nepalese corporate bond market.

5.1 Summary

Capital is the most important part of any financial market. It is the market for the collection of long-term funds. Entrepreneurs who have ideas but do not have funds to establish, manage and operate the business can collect the required funds by mobilizing the scattered public savings. They issue tradable securities like shares, debentures, preferred stock and others. The securities market is the requisite for the sound development of an economy because it not only provides stable long-term capital for companies and an effective saving vehicle for the public, but also functions as an efficient tool for resource allocation.

A well-developed capital markets enable high quality firms to increasingly finance themselves from securities (bond and equity) rather than from bank loans. But, Nepalese corporate bond market is dominated by common stock. Similarly, government debt securities and real assets also dominate Nepalese corporate bond market.

The corporate debt securities market is an important sector of capital market. There is no controversy as too whether this sector should be developed or not. However, it is a leading sector and once this sector is developed, capital market will be developed as a whole. As a result overall economic development of the nation takes place. Many intellectuals in the development country say that their countries are under-developed because they do not have sound corporate bond market. Thus, corporate bond market in developing countries has been viewed as an effective tool for achieving economic development and reallocation of capital all over the nation.

For the overall growth of Nepalese capital market, development of corporate bond market is necessity. As the Nepalese capital market is in the creeping stage of development, corporate bond market is limited in its existence. Only very few, just fourteen issuance of corporate bond are seen from the period of FY1986/87 to FY2007/08 in the Nepalese history. Very poor practice of corporate debt securities with very similar characteristics except SRSML convertible debenture is seen, this may be due to lack of issuers and investors awareness towards corporate debt securities.

This study mainly focuses on analyzing the issues and prospects of developing Nepalese corporate bond market. Its specific objectives are:

(a) To study existing corporate bond market in Nepal,

(b) To examine valuation and duration of Nepalese corporate debt securities,

(c) To identify issues that hinders the development of corporate bond market in Nepal,

(d) To access the prospects of corporate bond market growth and development in Nepal, and

(e) To examine the opinions of concerned parties about the Nepalese corporate bond market.

This study is based on primary as well as secondary sources of information. The study of existing corporate bond market of Nepal was accomplished by using secondary data for the period of FY1986/87 to FY2007/08. The valuation and duration of corporate debt securities are analyzed by using the secondary data for the period of FY2003/04 to FY2007/08.

Similarly, survey of respondents has been accomplished by using primary data of 52 respondents. Out of 52 respondents, 15 from listed companies, 6 from issue manger/brokers, 22 from individual investors and 9 from experts. These respondents of four groups gave their responses on different aspects of Nepalese corporate debt securities market. The response of each respondent group also analyzed on each question, to ascertain the differences in their responses. For this not only a variety of statistical tests are employed but testing of hypothesis at 5% level of significance by using chi-square is also employed.

5.2 Conclusion

The major findings of this study led to conclude that only a few corporate debt securities (i.e., thirteen), have been issued by eleven companies (i.e., three mfg. and eight banks) during the period of FY1986/87 to FY2007/08. Though the debentures of SRSML were heavily undersubscribed (0.18 x), HBL debentures were oversubscribed (1.12 x). Thereafter, over subscription of debenture issue of EBL (1.71 x), BOKL (1.33 x), NIBL (1.03 x), N SBI BL (1.16 x) and full subscription of all other corporate bonds issued shows some better future prospects of corporate bond market.

The characteristics of Nepalese corporate debt securities are similar, except SRSML convertible debenture. So, issuance of quality bonds with better characteristics features by better performing corporate houses is the demand of present corporate bond market. The result of bond valuation supports the findings of previous studies, when the market interest rate is less than the coupon interest rate; the value of a bond is more than its par value.

The result of this study supports the view of previous studies, when market interest rate is less than the coupon rate; the duration is less than its maturity period. Furthermore, we see that decreases in bonds coupon rate increases bonds duration. This shows that duration is inversely related to coupon interest rate. This study supports the result of previous studies performed F.R. Macaulay, less duration always attract the large no. of investors because investor get their whole return before maturity period with less price risk.

Majority of the companies used common stock for raising long-term fund, as it is already popular to investor and easily subscribe. Though bond issue is suitable for long-term financing, bank loan are very popular even if it is suitable for short-term financing. This is due to the reason that corporate houses might not be aware of fact that bond issue are less costly source of long-term financing. Nepalese investors least like corporate debt securities in comparison to government debt securities and real assets, as they provide good return with less investment risk.

The major factors that hinder the smooth growth of Nepalese corporate bond market are: lack of investors' awareness towards corporate debt securities, lack of effective and efficient bond market, lengthy process of issuing as well as ineffective rules and regulations, inadequate

infrastructure facilities, limited supply of quality bonds. Furthermore, NEPSE and SEBON have weak and ineffective working system. NEPSE is being the trading place of limited listed shares through traditional open cry system and computerized system is lacking.

Major issues of Nepalese corporate bond market are: poor practice of price sensitive information disclosure system, political insatiability, dominance of bond market by credit oriented transaction, and investors' particular preferences on debenture issuing companies.

Lower deposit rate of commercial banks than coupon rate of bond issue may helps to attract investors towards Nepalese corporate debt securities. However, declining coupon rate is unable to cover increasing inflation rate, and this may be the serious issue of Nepalese corporate bond market.

Thus, for systematic growth and development of Nepalese corporate bond market as well as overall capital market above mentioned issues must be coped by developing competitive strength on the one hand and capturing opportunities on the other hand.

5.3 Recommendations

The researcher found so many scattered weaknesses in all areas and overall system of Nepalese corporate bond market. The researcher desires to give some suggestions to concerned authorities i.e., government, corporate sector, issue manager/broker, and investors for converting the major issues into strength and grasping the opportunities for the overall development of Nepalese corporate bond market.

5.3.1 Government

Government has main responsibilities in promoting desirable activities and restricting undesirable activities for the growth of Nepalese corporate bond market. As corporate bond market is requirement for the overall growth of capital market. Concerned government bodies should focus on the issues of corporate bond market and then by developing competitive strength to cope with the forth-coming problems, they should enable the growth of overall

capital market. Government should do following activities for development of corporate bond market.

1. As political instability hinders the growth of each and every sector, surely capital market and corporate bond market is also not free from it and hence political stability should be maintained.

2. Nepal Government should offer tax exemption in income from debt securities this attract investor towards the debt securities and needed funds will be easily available to Government as well as corporate sectors.

3. Existing legal provisions regarding the corporate debt securities market should be reformed in such a way that it protects the rights of the investors. Similarly, lengthy process of issuing as well as ineffective rules and regulations should be revised to make it friendly to bond issuers and investor.

4. Nepalese corporate houses used bank loans instead of issuing bond, as it is easily available. Though the cost of bank loan is less (i.e., saves high flotation costs) in short-term, it is higher in long-term (as the lending rate of bank is high). Nepalese bond issuers are not aware of this fact and hence the Government should make them aware and should make easy process of issuing bonds.

5. Majority of the respondents replied that the infrastructure facility of Nepalese capital market is inadequate for the growth of corporate bond market. The majority of respondents agree that the large flotation costs at the time of issue cannot bear by small corporate houses. So, Government should provide adequate infrastructure, and make the cost of issuing bond favorable.

6. SEBON should ensure the timely disclosure of price sensitive information. NEPSE and SEBON have weak and ineffective working system. NEPSE is being the trading place of limited listed shares based on open cry system. There is a need of trading of securities by computerized system. SEBON is not able to monitor Nepalese capital market effectively.

5.3.2 Corporate Sector

Corporate sector is an important stakeholder of corporate debt securities market. If they don't issue debentures, growth of corporate debt securities will be impossible. The researcher gives following suggestions to corporate sectors.

1. They should understand market demand and grab the opportunity by issuing debentures to fulfill the long-term fund requirement. Huge portion of issued debentures should be subscribed through public offering rather than private placement that more investors can purchase it. Provision of trustee should be made in debenture issue. Issued debentures should be listed in NEPSE in order to provide secondary market. Number of minimum debentures to be purchased should be minimized, so that poor people may also buy it.

2. The true picture of past performances as well as future plan of any business is very essential to the potential investors for making investment decisions. They should be disclosed at the time of issuance.

3. Continuous and timely disclosure of price sensitive information may help to earn good reputations, as result investors likes its securities.

4. Majority of the companies used common stock for raising long-term fund, as it is already popular amongst investors and easily subscribed. This indicates that if other instruments with superior quality are also practiced for raising long-term fund they may have good chances of subscribing.

5. Investors' particular preferences on debenture issuing companies shows that if other profitable opportunity for investment also disclosed with its timely and continuous information there is no doubt that investors will be attracted towards it.

6. Although the investors are attracted towards corporate bond, because of coupon rate is higher than bank rate; however, declining coupon rate are unable to cover increasing inflation rate and this may be the serious issue of Nepalese corporate bond market. To solve this problem coupon rate should be slightly higher than the inflation rate.

5.3.3 Investors

There are two types of investors in the corporate debt securities market, which are: individual investors and institutional investors. The researcher gives following suggestions to investors (mainly individual investors).

1. It is found that majority of Nepalese investors are unaware of their investment scheme. Therefore it is suggested that they should be aware of their investment scheme after properly analyzing risk and return.

2. Investors should be aware of their rights so that they may use it when needed.

3. Investors should call investors protection act and they should enforce corporate bond issuing companies to enlist that bond issue in NEPSE.

4. Investors should change their perception and should also invest in the corporate debt securities issued by any better performing company that discloses its price sensitive information continuously on time. Investors need to decide rationally before making investment decision.

5. Majority of the Nepalese organization are unable to disclose price sensitive information such as income statement, balance sheet, cash flows, profit/loss a/c, financial ratios, etc. This information is very helpful for making investment decision on the securities issued by them. So, investors need to know about their past performances and future plan from information analysis before making investment decision.

Finally, it is recommended to all the concerned persons, parties and agencies to take more efforts for the proper development of the debt securities marked of Nepal.

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ANNEXES

Annex – I

Real Rate of Return, Inflation Rate and Market Interest Rate

The market interest rate is taken from the commercial banks deposit rates of time more than two years. Average of deposit rate is the market rate here. The information needed for computing present values and duration of Nepalese corporate debt securities (such as market interest rate of different periods) are given in this table.

Real Rate of Return, Inflation Rate, and Market Interest Rate

Source: NRB Quarterly Economic Bulletins, Vol.-XXXIX, No.-4, Mid-July 2005, and Mid-Term Review of the Monetary Policy for 2005/06 up to year 2005/06.
Further years 2006-2008 has been calculated on the basis of the report in reference to ***Current Macro Economics Situation by NRB (Based on first five months' data of 2008/09)***

Years	Market Interest Rate	Inflation Rate	Real Rate of Return
1996/97	11.25	8.1	3.15
1997/98	10.25	8.33	1.92
1998/99	8.75	11.36	-2.61
1999/00	7.13	3.37	3.76
2000/01	6.38	2.45	3.93
2001/02	5.63	2.90	2.73
2002/03	5.38	4.79	0.59
2003/04	4.50	3.96	0.54
2004/05	4.28	4.52	-0.24
2005/06	4.45	6.98	-2.53
2006/07	5.50	5.10	0.40
2007/08	6.00	12.10	-6.10

Annex - II

List of Debenture Issuing Companies in Nepal till year ending 2007/08

Year	Issuer	B I (Units)	B A (Units)	O S (Units)	O/U S (x)	I M	Types
1986/87	BNL	5,000	-	-	-	-	-
1992/93	JSML	20,000	-	-	-	NIDC	-
1997/98	SRSML	93,000	17,130	-75,870	-0.18	NIDC	Convertible
2001/02	HBL	3,60,000	4,01,700	41,700	1.12	NMB	Redeemable
2003/04	$NIBL_1$	3,00,000	3,00,000	-		AFCL	Redeemable
2004/05	EBL	3,00,000	5,13,000	2,13,000	1.71	CIT	Redeemable
2005/06	BOKL	2,00,000	2,66,620	66,620	1.33	NMB	Redeemable
2005/06	$NIBL_2$	2,50,000	2,56,825	6,825	1.03	AFCL	Redeemable
2005/06	NICBL	2,00,000	2,00,000	-		AFCL	Redeemable
2005/06	NSBIBL	2,00,000	2,32,400	32,400	1.16	CIT	Redeemable
2006/07	$NIBL_3$	2,50,000	2,50,000	-	1.00	AFCL	Redeemable
2007/08	KBL	4,00,000	4,04,000	4,000	1.01	NMB	Redeemable
2007/08	HBL	500,000	5,00,000	-	1.00	AFCL	Redeemable
2007/08	$NIBL_4$	2,50,000	2,50,000	-	1.00	AFCL	Redeemable
2007/08	NBL	3,00,000	3,00,000	-	1.00	NIDC	Redeemable

Source: Annual Report SEBON 2005/06, 2006/7 and 2007/08

Annex - III

Valuation of Nepalese Corporate Debt Securities

The information needed for computing the present values of Nepalese corporate debt securities are shown in the table.

Information	Date	F V (M)	C R (I)	C A P Yr	M P (n)	M I R (k %)	Int. Pmt.
NIBL1	17/7/060	Rs.1,000	7.50%	Rs.75	7 yrs.	4.50%	S-A
EBL	7/1/062	Rs.1,000	6%	Rs.60	7 yrs.	4.28%	S-A
BOKL	3/6/062	Rs.1,000	6%	Rs.60	7 yrs.	4.45%	S-A
NIBL2	26/2/063	Rs.1,000	6%	Rs.60	7 yrs.	4.45%	S-A
NICBL	29/2/063	Rs.1,000	6%	Rs.60	7 yrs.	4.45%	S-A
NSBIBL	20/3/063	Rs.1,000	6%	Rs.60	7 yrs.	4.45%	S-A
$NIBL_3$	9/6/006	Rs.1,000	6.25%	Rs.60	7 yrs.	5.50%	S-A
KBL	2/2/064	Rs.1,000	8%	Rs. 80	7 yrs.	5.50%	S-A
HBL	8/3/065	Rs.1,000	8%	Rs.80	7 Yrs	6%	S-A
$NIBL_4$	12/3/065	Rs.1,000	8%	Rs. 80	7 yrs.	6%	S-A
NBL	29/3/065	Rs.1,000	8%	Rs. 80	10 yrs.	6%	S-A

Source: Debenture Prospectus of Issuing Companies, Annex - I

We have valuation model,

$V_o = I\ (PVIFA_{k\%,\ n\ periods}) + M\ (PVIF_{k\%,\ nth\ period})$

Where,

$PVIFA_{k\%,\ n\ periods}$ = Present Value Interest Factor of Annuity at k%, for n periods.

$PVIF_{k\%,\ n\ th\ period}$ = Present Value Interest Factor at k% for n^{th} period.

V_o = Present Value of bond

I = Coupon Interest Rate

k% = Market Interest Rate or Yield-to-maturity

n = Maturity Period

Also, (PVIFA $_{k\%, n \text{ periods}}$) and (PVIF $_{k\%, n \text{ th period}}$) factors are calculated by using the following formula:

$$(PVIFA_{k\%, n \text{ periods}}) = \frac{1 - \frac{1}{(1+k)^n}}{k}$$

$$(PVIF_{k\%, n \text{ th period}}) = \frac{1}{(1+k)^n}$$

Now,

Valuation of NIBL1 debenture:

We have,

$$V_o = \frac{75}{2} \text{ (PVIFA 4.45\%/2, 2*2) + 1000 (PVIF 4.45\%/2, 2*2)}$$

= 37.5 * 3.7849 + 1000 * 0.0.9149
= Rs.1112.56

Thus, the present value of NIB debenture is Rs.1056.83.

Valuation of EBL debenture:

We have,

$$V_o = \frac{60}{2} \text{ (PVIFA 4.28\%/2, 4*2) + 1000 (PVIF 4.28\%/2, 4*2)}$$

= 30 * 7.2833 + 1000 * 0.8446
= Rs.1063.10

Thus, the present value of EBL debenture is Rs. Rs.1063.10

Valuation of BOKL debenture:

We have,

$$V_o = \frac{60}{2} \text{ (PVIFA 4.45\%/2, 4*2) + 1000 (PVIF 4.45\%/2, 4*2)}$$

= 30 * 7.2483 + 1000 * 0.8372
= Rs.1054.64

Thus, the present value of BOKL debenture is Rs.1054.64

Valuation of $NIBL_2$ debenture:

We have,

$$V_o = \frac{60}{2} \text{ (PVIFA 4.45\%/2, 5*2) + 1000 (PVIF 4.45\%/2, 5*2)}$$

= 30 * 8.8679 + 1000 * 0.8008
= Rs.1066.11

Thus, the present value of $NIBL_2$ debenture is Rs.1066.11

Valuation of NICL debenture:

We have,

$$V_o = \frac{60}{2} \text{ (PVIFA 4.45\%/2, 5*2) + 1000 (PVIF 4.45\%/2, 5*2)}$$

= 30 * 8.8679 + 1000 * 0.8008
= Rs.1066.11

Thus, the present value of NICL debenture is Rs.1066.11

Valuation of NSBI BL debenture:

We have,

$$V_o = \frac{60}{2} \text{ (PVIFA 4.45\%/2, 5*2) + 1000 (PVIF 4.45\%/2, 5*2)}$$

= 30 * 8.8679 + 1000 * 0.8008
= Rs.1066.11

Thus, the present value of SBI BL debenture is Rs.1066.11

Valuation of $NIBL_3$ debenture:

We have,

$$V_o = \frac{80}{2} \text{ (PVIFA 5.50\%/2, 5*2) + 1000 (PVIF 5.50\%/2, 5*2)}$$

= 40 * 8.6398 + 1000 * 0.7624
= Rs.1107.99

Thus, the present value of $NIBL_3$debenture is Rs.1107.99

Valuation of KBL debenture:

We have,

$$V_o = \frac{80}{2} \text{ (PVIFA 5.50\%/2, 6*2) + 1000 (PVIF 5.50\%/2, 6*2)}$$

= 40 * 10.1081 + 1000 * 0.7227
= Rs.1127.02
Thus, the present value of KBL debenture is Rs.1127.02

Valuation of HBL debenture:

We have,

$$V_o = \frac{80}{2} \text{ (PVIFA 6.00\%/2, 7*2) + 1000 (PVIF 6.00\%/2, 7*2)}$$

= 40 * 10.3001 + 1000 * 0.6614
= Rs.1113.40
Thus, the present value of HBL debenture is Rs.1113.40

Valuation of NIBL$_4$ debenture:

We have,

$$V_o = \frac{80}{2} \text{ (PVIFA 6.00\%/2, 7*2) + 1000 (PVIF 6.00\%/2, 7*2)}$$

= 40 * 10.3001 + 1000 * 0.6614
= Rs.1113.40
Thus, the present value of NIBL$_4$ debenture is Rs.1113.40

Valuation of NBL debenture:

We have,

$$V_o = \frac{80}{2} \text{ (PVIFA 6.00\%/2, 10*2) + 1000 (PVIF 6.00\%/2, 10*2)}$$

= 40 * 14.8764 + 1000 * 0.5537
= Rs.1148.75
Thus, the present value of NIB debenture is Rs.1148.75

Annex - IV

Duration of Nepalese Corporate Debt Securities

Some basic information needed for computing duration is tabulated in this table. So, with the help of this information, duration of Nepalese corporate debt securities is calculated.

Source: Debenture Prospectus of Issuing Companies

For the computation of duration of Nepalese corporate debt securities, we have
The specific model developed by Macaulay as such:

$$MD = \frac{1+y}{y} - \frac{(1+y) + T(c-y)}{c[(1+y)^{T}-1]+y}$$

Where,

MD = Macaulay Duration

y = Yield-to-maturity i.e., Market Interest Rate

c = Coupon Rate

T = Term-to-maturity i.e., Maturity Period

Duration of $NIBL_1$ debenture:

We have,

$$MD = \frac{1 + 0.0225}{0.0225} - \frac{(1 + 0.0225) + 14(0.0375 - 0.0225)}{0.0375[(1 + 0.0225)^{14}-1] + 0.0225}$$

Where,

MD = Macaulay Duration

y = 4.50%/2 = 0.0225

c = 7.5%/2 = 0.0375

T = 7 *2 = 14 periods

MD = 45.4444 – 34.0470
= 11.3974
= 11.40 (Semi-annual periods) (Approx.)

So, annual duration = 11.40/2 = 5.70 yrs.

Similarly,

Duration of EBL debenture:

We have,

$$MD = \frac{1 + 0.0214}{0.0214} - \frac{(1 + 0.0214) + 14\,(0.030 - 0.0214)}{0.030\,[(1 + 0.0214)^{14} - 1] + 0.0214}$$

Where,

MD = Macaulay Duration

y = 4.28%/2 = 0.0214

c = 6.00%/2 = 0.030

T = 7 *2 = 14 periods

MD = 47.7290 – 35.9622
= 11.7668
= 11.77 (Semi-annual periods) (Approx.)
So, annual duration = 11.77/2 = 5.89 yrs.

Duration of BOKL debenture:

We have,

$$MD = \frac{1 + 0.02225}{0.02225} - \frac{(1 + 0.02225) + 14\,(0.030 - 0.02225)}{0.030\,[(1 + 0.02225)^{14} - 1] + 0.02225}$$

Where,

MD = Macaulay Duration

y = 4.45%/2 = 0.02225

c = 6.00%/2 = 0.030

T = 7 *2 = 14 periods

MD = 45.9438 – 34.1616
= 11.7822
= 11.78 (Semi-annual periods) (Approx.)
So, annual duration = 11.78/2 = 5.89 yrs.

Duration of NIBL$_2$ debenture:

We have,

$$\frac{1 + 0.02225}{0.02225} \qquad \frac{(1 + 0.02225) + 14 (0.030 - 0.02225)}{0.030 [(1 + 0.02225)^{14}-1] + 0.02225}$$

Where,

MD = Macaulay Duration

y = 4.45%/2 = 0.02225

c = 6.00%/2 = 0.030

T = 7 *2 = 14 periods

MD = 45.9438 – 34.1616

= 11.7822

= 11.78 (Semi-annual periods) (Approx.)

So, annual duration = 11.78/2 = 5.89 yrs.

Duration of NICBL debenture:

We have,

$$MD = \frac{1 + 0.02225}{0.02225} - \frac{(1 + 0.02225) + 14 (0.030 - 0.02225)}{0.030 [(1 + 0.02225)^{14}-1] + 0.02225}$$

Where,

MD = Macaulay Duration

y = 4.45%/2 = 0.02225

c = 6.00%/2 = 0.030

T = 7 *2 = 14 periods

MD = 45.9438 – 34.1616

= 11.7822

= 11.78 (Semi-annual periods) (Approx.)

So, annual duration = 11.78/2 = 5.89 yrs.

Duration of N SBI BL debenture:

We have,

$$MD = \frac{1 + 0.02225}{0.02225} - \frac{(1 + 0.02225) + 14 (0.030 - 0.02225)}{0.030 [(1 + 0.02225)^{14}-1] + 0.02225}$$

Where,

MD = Macaulay Duration

y = 4.45%/2 = 0.02225

c = 6.00%/2 = 0.030

T = 7 *2 = 14 periods

MD = 45.9438 – 34.1616
= 11.7822
= 11.78 (Semi-annual periods) (Approx.)
So, annual duration = 11.78/2 = 5.89 yrs.

Duration of NIBL3 debenture:

We have,

$$MD = \frac{1 + 0.0275}{0.0275} - \frac{(1 + 0.0275) + 14 (0.03125 - 0.0275)}{0.03125 [(1 + 0.0275)^{14}-1] + 0.0275}$$

Where,

MD = Macaulay Duration

y = 5. 50%/2 = 0.0275

c = 6.25%/2 = 0.03125

T = 7 *2 = 14 periods

MD = 37.3636 – 25.7510
= 11.6126
= 11.62 (Semi-annual periods) (Approx.)
So, annual duration = 11.62/2 = 5.81 yrs.

Duration of KBL debenture:

We have,

$$MD = \frac{1 + 0.0275}{0.0275} - \frac{(1 + 0.0275) + 14\,(0.04 - 0.0275)}{0.04\,[(1 + 0.0275)^{14} - 1] + 0.0275}$$

Where,

MD = Macaulay Duration

y = 5. 50%/2 = 0.0275

c = 8.00%/2 = 0.04

T = 7 *2 = 14 periods

MD = 37.3636 – 26.1526
= 11.2110
= 11.21 (Semi-annual periods) (Approx.)
So, annual duration = 11.21/2 = 5.61 yrs.

Duration of HBL debenture:

We have,

$$MD = \frac{1 + 0.030}{0.030} - \frac{(1 + 0.030) + 14\,(0.040 - 0.030)}{0.030\,[(1 + 0.030)^{14} - 1] + 0.030}$$

Where,

MD = Macaulay Duration

y = 6.00%/2 = 0.030

c = 8.00%/2 = 0.040

T = 7 *2 = 14 periods

MD = 34.3333 – 23.0108
= 11.3225
= 11.32 (Semi-annual periods) (Approx.)
So, annual duration = 11.32/2 = 5.66 yrs.

Duration of NIBL4 debenture:

We have,

$$MD = \frac{1 + 0.030}{0.030} - \frac{(1 + 0.030) + 14\,(0.040 - 0.030)}{0.030\,[(1 + 0.030)^{14} - 1] + 0.030}$$

Where,

MD = Macaulay Duration

y = 6.00%/2 = 0.030

c = 8.00%/2 = 0.040

T = 7 *2 = 14 periods

MD = 34.3333 – 23.0108
= 11.3225
= 11.32 (Semi-annual periods) (Approx.)
So, annual duration = 11.32/2 = 5.66 yrs.

Duration of NBL debenture:

We have,

$$MD = \frac{1 + 0.030}{0.030} - \frac{(1 + 0.03) + 20\,(0.040 - 0.030)}{0.030\,[(1 + 0.030)^{20} - 1] + 0.030}$$

Where,

MD = Macaulay Duration

y = 6.00%/2 = 0.030

c = 8.00%/2 = 0.040

T = 10 *2 = 20 periods

MD = 34.3333 – 22.7021
= 11.6312
= 11.63 semi-annual periods) (Approx.)
So, annual duration = 11.63/2 = 5.81 yrs.

Annex – V

Questionnaire

Dear Respondent,

I have been conducting a research on "A Study Corporate Bond: Prospectus and Issues in Nepal" as a requirement for the partial fulfillment of the degree of MBS. I hope this questionnaire be an effective methodology to find out the issues and prospects of corporate bond market, by using the statistical tool chi-square test of hypothesis based on various categories of samples and their attitude towards corporate bond.

I have sent you some questions regarding corporate bond market hoping that your timely response will come. So, I heartily request you to fill this questionnaire at the best of your knowledge. Your kind cooperation in this regard will be of great value for me.

Yours faithfully,

Santosh Raj Khanal
Tribhuvan University
Nepal Commerce Campus
MBS Final Year

Respondent:
Name:
Address:

Please tick in the group you belong to:

Listed Company ☐
Broker/Issue Manager ☐
Individual Investors ☐
Other Experts ☐

Instructions: Rank the following aspects of your view in order to your preference by indicating '1' to the most preferred, '2' to the second most preferred and so on.

(1) In your opinion, which source of financing is appropriate for raising long-term fund?

(a) Common Stock ☐
(b) Preferred Stock ☐
(c) Corporate Bond ☐
(d) Bank Loan ☐
(e) Others ☐

(2) What type of long-term investment do you generally prefer?

(a) Financial Assets:
  (i) Government Debt Securities ☐
  (ii) Corporate Debt Securities ☐
(b) Real Assets ☐

(3) Which sectors debenture issue is most preferable?

(a) Banking Sector ☐
(b) Manufacturing Sector ☐
(c) Hotel ☐
(d) Finance Companies ☐
(e) Others ☐

(4) In your opinion, what might be the major factors that hinder the smooth growth of Nepalese corporate bond market?

(a) Lack of Investors Awareness towards Debt Securities ☐
(b) Limited Supply of Quality Bonds ☐
(c) Lack of Effective and Efficient Bond Market ☐
(d) Lack of Capital Gain Opportunity ☐
(e) Lack of Credit Rating Agency ☐
(f) Poor Practice of Information Disclosure by Private Organization ☐

(5) In your opinion, which factor plays significant role to attract investors towards corporate bond?

(a) Declining Interest Rate on Deposit ☐

b) Less Risky in comparison to Common Stock and Preferred Stock ☐

(c) Regular Interest Income ☐

(d) Liquid Assets ☐

(6) In your opinion, what might be the reasons that only few private organization have practiced debenture as a source of long-term financing?

(a) Credit Oriented Transaction have Dominated Debenture Market ☐

(b) Lack of Sound Debt Market in Nepal ☐

(c) Political Instability ☐

(d) Lengthy Process of Issuing as well as Ineffective Rules and Regulations ☐

(e) Increase in Financial Risk ☐

(7) In your opinion, why does Nepalese Organizations used bank loan instead of issuing bond?

(a) Bank Loan is easily available ☐

(b) Collection of Funds by issuing Bond is a Lengthy and Difficult Process ☐

(c) Cost of Bank Loan is less than that of Bond Issue ☐

(d) Others ☐

Please tick (√) in appropriate place:

(8) Do you think that the infrastructure of Nepalese capital market is adequate for the growth of corporate bond market in Nepal?

(a) Adequate ☐

(b) Inadequate ☐

(9) Do you agree that due to the lack of large corporate houses, various kinds of debt instruments are not practiced in Nepal?

(a) Yes ☐

(b) No ☐

(10) Is there adequate price sensitive information disclosure system of private organization?

(a) Adequate ☐

(b) Inadequate ☐

(11) Do you think that political instability hinder the growth of corporate bond market in Nepal?

(a) Yes ☐

(b) No ☐

(12) Do you think that credit oriented transaction have dominated Nepalese corporate bond market?

(a) Yes ☐

(b) No ☐

(13) What is your view about present pace of corporate bond market growth in Nepal?

(a) Very good ☐

(b) Satisfactory ☐

(c) Poor ☐

(d) Don’t know ☐

(14) Do you think that the existing legal rules and regulations are adequate for the growth and development of Nepalese corporate bond market?

(a) Yes ☐

(b) No ☐

*** Thank You ***

Annex - VI

Number of Responses to Field Survey Based on Questionnaire

Total no. of respondent is 52. Seven questions asked to them are yes/no type. Their responses are tabulated as shown below.

QN	Stream	Rank wise No. of Response							Total Response	Weighted Value	Mean Weight	Overall Rank
		Sector	1	2	3	4	5	6				
1	(a)	L.C.	12	2		1			15	20	1.33	
		I.M/B	5	1					6	7	1.17	
		Ind. Investors	19	1	2				22	27	1.23	
		Experts	9						9	9	1	
	Total		45	4	2	1			52	63	1.21	1
	(b)	L.C.		6	6	3			15	42	2.8	
		I.M/B		2	3	1			6	17	2.83	
		Ind. Investors		4	9	9			22	71	3.23	
		Experts		3	3	3			9	27	3	
	Total			15	21	16			52	157	3.02	3
	(c)	L.C.	1	3	9	2			15	42	2.8	
		I.M/B	1	2	3				6	14	2.33	
		Ind. Investors	3	11	8				22	49	2.23	
		Experts		2	5	2			9	27	3	
	Total		5	18	25	4			52	132	2.54	2
	(d)	L.C.	2	4		9			15	46	3.07	
		I.M/B		1		5			6	22	3.67	
		Ind. Investors		6	3	12	1		22	74	3.36	
		Experts		4	1	4			9	27	3	
	Total		2	15	4	30	1		52	169	3.25	4

	(e)	L.C.					15		15	75	5	
		I.M/B					6		6	30	5	
		Ind. Investors				1	21		22	109	4.95	
		Experts					9		9	45	5	
	Total					1	51		52	259	4.98	5
2	(a)	L.C.	7	7	1				15	24	1.6	
		I.M/B	3	2	1				6	10	1.67	
		Ind. Investors	6	15	1				22	39	1.77	
		Experts	5	3	1				9	14	1.56	
	Total		21	27	4				52	87	1.67	1
	(b)	L.C.	1	3	11				15	40	2.67	
		I.M/B	2	1	3				6	13	2.17	
		Ind. Investors	9	3	10				22	45	2.05	
		Experts	1	2	6				9	23	2.56	
	Total		13	9	30				52	121	2.33	3
	(c)	L.C.	7	5	3				15	26	1.73	
		I.M/B	1	3	2				6	13	2.17	
		Ind. Investors	7	4	11				22	48	2.18	
		Experts	3	4	2				9	17	1.89	
	Total		18	16	18				52	104	2	2
3	(a)	L.C.	15						15	15	1	
		I.M/B	6						6	6	1	
		Ind. Investors	20	1	1				22	25	1.14	
		Experts	9						9	9	1	
	Total		50	1	1				52	55	1.06	1
	(b)	L.C.		3	6	6			15	48	3.2	
		I.M/B		1	3	2			6	19	3.17	
		Ind. Investors	1	2	9	10			22	72	3.27	
		Experts		1	3	5			9	31	3.44	
	Total		1	7	21	23			52	170	3.27	3

	(c)	L.C.			4	8	3		15	59	3.93	
		I.M/B			2	4			6	22	3.67	
		Ind. Investors		2	11	8	1		22	74	3.36	
		Experts		1	5	3			9	29	3.22	
	Total			3	22	23	4		52	184	3.54	4
	(d)	L.C.		11	2	2			15	36	2.4	
		I.M/B		5	1				6	13	2.17	
		Ind. Investors	1	17	1	3			22	50	2.27	
		Experts		7	1	1			9	21	2.33	
	Total		1	40	5	6			52	120	2.31	2
	(e)	L.C.			3		12		15	69	4.6	
		I.M/B					6		6	30	5	
		Ind. Investors				1	21		22	109	4.95	
		Experts					9		9	45	5	
	Total				3	1	48		52	253	4.87	5
4	(a)	L.C.	8	3	1	2		1	15	31	2.07	
		I.M/B	3	1	1		1		6	13	2.17	
		Ind. Investors	9	1	8	1	3		22	54	2.45	
		Experts	2		2	2	3		9	31	3.44	
	Total		22	5	12	5	7	1	52	129	2.48	2
	(b)	L.C.	2	2	8		1	2	15	47	3.13	
		I.M/B	1	2		1	2		6	19	3.17	
		Ind. Investors	2	7	1	9		3	22	73	3.32	
		Experts	3	2	1	2	1		9	23	2.56	
	Total		8	13	10	12	4	5	52	162	3.12	3
	(c)	L.C.	2	4	4	4	1		15	43	2.87	
		I.M/B	1	3	1		1		6	15	2.5	
		Ind. Investors	4	10	4	2	2		22	54	2.45	
		Experts	2	7					9	16	1.78	
	Total		9	24	9	6	4		52	128	2.46	1

	(d)	L.C.		1	1	3	5	5	15	72	4.8	
		I.M/B			1	2	2	1	6	27	4.5	
		Ind. Investors	4	4	2	4	5	3	22	77	3.5	
		Experts	1	1	2	2		3	9	35	3.89	
	Total		5	6	6	11	12	12	52	211	4.06	4
	(e)	L.C.	1	2		4	4	4	15	65	4.33	
		I.M/B			1	4		1	6	25	4.17	
		Ind. Investors	2	1	1	6	9	3	22	94	4.27	
		Experts	1		2	1	4	1	9	37	4.11	
	Total		4	3	4	15	17	9	52	221	4.25	5
	(f)	L.C.	2	3		3	4	3	15	58	3.87	
		I.M/B	1		1			4	6	28	4.67	
		Ind. Investors	1	2	3		3	13	22	107	4.86	
		Experts			1	1	2	5	9	47	5.22	
	Total		4	5	5	4	9	25	52	240	4.62	6
5	(a)	L.C.	8	4	1	2			15	27	1.8	
		I.M/B	2	3		1			6	12	2	
		Ind. Investors	11	5	5	1			22	40	1.81	
		Experts	8			1			9	12	1.33	
	Total		29	12	6	5			52	91	1.75	1
	(b)	L.C.	5	4	5	1			15	32	2.13	
		I.M/B	3		3				6	12	2	
		Ind. Investors	5	8	6	3			22	51	2.32	
		Experts		4	4	1			9	24	2.67	
	Total		13	16	18	5			52	119	2.29	2
	(c)	L.C.	2	6	2	5			15	40	2.67	
		I.M/B	1	3	2				6	13	2.17	
		Ind. Investors	4	10	6	2			22	50	2.27	
		Experts		5	4				9	22	2.44	
	Total		7	24	14	7			52	125	2.4	3

	(d)	L.C.		1	7	7			15	51	3.4	
		I.M/B			1	5			6	23	3.83	
		Ind. Investors	2	1	3	16			22	77	3.5	
		Experts	1		1	7			9	32	3.56	
	Total		3	2	12	35			52	183	3.52	4
6	(a)	L.C.	1	1	7	2	4		15	52	3.47	
		I.M/B	1	1	1	3			6	18	3	
		Ind. Investors	4	6	6	5	1		22	59	2.68	
		Experts	1	1	2	3	1		9	27	3	
	Total		8	9	16	13	6		52	156	3	3
	(b)	L.C.	10	3	1	1			15	23	1.58	
		I.M/B	3	3					6	9	1.5	
		Ind. Investors	10	7	4		1		22	41	1.86	
		Experts	3	3	2		1		9	20	2.22	
	Total		26	16	7	1	2		52	93	1.79	1
	(c)	L.C.	1	3	1	6	4		15	54	3.6	
		I.M/B	1		2	1	3		6	25	4.17	
		Ind. Investors	4	2	6	4	6		22	72	3.27	
		Experts	1			2	6		9	39	4.33	
	Total		6	5	9	13	19		52	190	3.65	5
	(d)	L.C.	2	6	4	1	2		15	40	2.67	
		I.M/B	1	2	2		1		6	16	2.67	
		Ind. Investors	2	6	4	10			22	66	3	
		Experts	3	3	2	1			9	19	2.11	
	Total		8	17	12	12	3		52	141	2.71	2
	(e)	L.C.	1	2	2	5	5		15	56	3.73	
		I.M/B		1	2	2	1		6	21	3.5	
		Ind. Investors	2	1	2	11	6		22	84	3.82	
		Experts	1	2	2	3	1		9	28	3.11	
	Total		4	6	8	21	13		52	189	3.63	4

7	(a)	L.C.	12	3					15	18	1.2	
		I.M/B	3	2	1				6	10	1.67	
		Ind. Investors	17	5					22	27	1.23	
		Experts	8	1					9	10	1.11	
	Total		40	11	1				52	65	1.25	1
	(b)	L.C.	2	6	7				15	35	2.33	
		I.M/B	3	2	1				6	10	1.67	
		Ind. Investors	2	11	9				22	51	2.32	
		Experts	1	2	6				9	23	2.56	
	Total		8	21	23				52	119	2.29	2
	(c)	L.C.	1	5	7	2			15	40	2.67	
		I.M/B		2	4				6	16	2.67	
		Ind. Investors	3	6	12	1			22	55	2.5	
		Experts		7	2				9	20	2.22	
	Total		4	20	25	3			52	131	2.52	3
	(d)	L.C.		1	1	13			15	57	3.8	
		I.M/B				6			6	24	4	
		Ind. Investors			1	21			22	87	3.95	
		Experts				9			9	36	4	
	Total			1	2	49			52	204	3.92	4

QN	Option	L.C.	I.M./B	Ind. Investors	Experts	Total
8	(a)	1	2	1	2	**6**
	(b)	14	4	21	7	**46**
	Total	**15**	**6**	**22**	**9**	**52**
9	(a)	10	3	17	6	**36**
	(b)	5	3	5	3	**16**
	Total	**15**	**6**	**22**	**9**	**52**
10	(a)	1	1	4	2	**8**
	(b)	14	5	18	7	**44**
	Total	**15**	**6**	**22**	**9**	**52**
11	(a)	13	5	16	3	**37**
	(b)	2	1	6	6	**15**
	Total	**15**	**6**	**22**	**9**	**52**
12	(a)	10	3	12	3	**28**
	(b)	5	3	10	6	**24**
	Total	**15**	**6**	**22**	**9**	**52**
13	(a)	1	0	0	0	**1**
	(b)	4	3	4	0	**11**
	(c)	10	3	18	9	**40**
	(d)	0	0	0	0	**0**
	Total	**15**	**6**	**22**	**9**	**52**
14	(a)	2	2	2	1	**7**
	(b)	13	4	20	8	**45**
	Total	**15**	**6**	**22**	**9**	**52**

Annex – VII

List of Responding Organization

A. Banking Sector

a. Nabil Bank Ltd.
b. Nepal Investment Bank Ltd.
c. Nepal Bangladesh Bank Ltd.
d. Himalayan Bank Ltd.
e. Everest Bank Ltd.
f. Nepal Credit and Commerce Bank Ltd.
g. Himalayan Bank Ltd.

B. Manufacturing and Processing Companies

a. Shree Ram Sugar Mill Ltd.
b. Bottlers Nepal Ltd.
c. Butwal Dhago Karkhana Ltd.
d. Nepal Banaspati Ghee Udyog.
e. Jyoti Spinning Mill Ltd.
f. Unilever Nepal Ltd.

C. Hotels

a. Oriental Hotel Ltd.
b. Tara Goun Regency Hotel Ltd.

Annex - VIII

As the opinion of four responding group on problems of Nepalese corporate bond market has to be tested, we find chi-square test the best tool for testing the above mentioned hypothesis. The result of chi-square has been tabulated as follows.

Results of Chi-square Test

QN	Opt.	LC	I.M./B	Ind. Investors	Experts	∑	Test Stat.	5%	Rem.	Decision
3	(a)	15	6	25	9	55				
H_1	(b)	48	19	72	31	170				
	(c)	59	22	74	29	184				
	(d)	36	13	50	21	120				
	(e)	69	30	109	45	253				
Total		**227**	**90**	**330**	**135**	**782**	**1.9**	**21**	**NS**	**Accept H_0**
4	(a)	31	13	54	31	129				
H_2	(b)	47	19	73	23	162				
	(c)	43	15	54	16	128				
	(d)	72	27	77	35	211				
	(e)	65	25	94	37	221				
	(f)	58	28	107	47	240				
Total		**316**	**127**	**459**	**189**	**1091**	**15.5**	**25**	**NS**	**Accept H_0**
7	(a)	18	10	27	10	65				
H_3	(b)	35	10	51	23	119				
	(c)	40	16	55	20	131				
	(d)	57	24	87	36	204				
Total		**150**	**60**	**220**	**89**	**519**	**2.91**	**16.9**	**NS**	**Accept H_0**