

PROBLEM AND PROSPECTS OF DEBENTURE MARKET IN NEPAL

A Thesis

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DECLARATION

I hereby declare that the work reported in this thesis entitled “**PROBLEMS AND PROSPECTS OF DEBENTURE MARKET IN NEPAL**” submitted to Office of Dean, Faculty of Management, Tribhuvan University, is my original work done in the form of partial fulfillment of the requirement for the Master of Business Studies (MBS) under the supervision of Roopak Joshi of Khwopa College.

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ABBREVIATION

AGM	: Annual General Meeting
C.V.	: Coefficient of Variation
CAPM :	: Capital Asset Pricing Model
COV	: Covariance
Co.	: Company
DPS	: Dividend per Share
EPS	: Earning Per Share
EBL	: Everest Bank Ltd.
F.Y.	: Fiscal Year
Fin. & Ins.	: Finance and Insurance
HBL	: Himalayan Bank Ltd.
Govt.	: Nepal's Government
HPR	: Holding Period Return
Ltd.	: Limited
Mfg. & Proc.	: Manufacturing and Processing
MPS	: Market Price of Share
NABIL	: Nabil Bank Ltd.
NEPSE	: Nepal Stock Exchange
NI	: Nepalese Index
NIBL	: Nepal Investment Bank Ltd.
NIC	: Nepal Industrial and Commercial Bank Ltd.
NRB	: Nepal Rastra Bank
S.D.	: Standard Deviation
SCBNL	: Standard Chartered Bank Nepal Ltd.
SML	: Security Market Line
SBI	: Nepal SBI Bank Ltd.
T.U.	: Tribhuvan University

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CHAPTER - I

INTRODUCTION

1.1 Background of the Study

Once the goods started to be transacted in monetary value, industrial development started from primitive stage & has come to this modern stage. In this modern economy, there are different types of organizations whose output might be physical goods (e.g. manufacturing industries) or services (e.g. financial institutions, Travel agencies etc.). Irrespective of nature of organizations, each one of these requires capital. Capital is the fund raised in present to get benefit in future. The sources could be equity share capital, preference share capital or debts.

Equity share capital is the fund provided to the firm by the owners, is long term source of fund. People who put this capital are real owners of the organization; have voting right. Preference share capital can be said as semi-equity type of capital, is also long term source of fund. Preference share holders are partial owner of the firm who have less right than the equity share holders; are entitled to fixed dividend before the distribution of profit to equity shareholders. And debt is the money borrowed from other which could be long term as well as short term source of fund. Short term debt could be banks loans, trade credit, receivable factoring etc. Long term debt could be bank loans (Term Loans), Bonds issue, debenture issue etc.

Capital structure of any organization is formed by mixing these various type of long term financings (mixing long term & short term financing is financial structure). And each firm tries to have optimal capital structure to have lower cost of capital which will ultimately help to increase the profit. These above long term capital are traded in primary market & secondary market. Primary market is in which the firm issues shares or bonds-debentures to investors and secondary market is in which the shares or bonds or debentures are traded after initially purchased from the issuer. Now coming to our subject area of research-Debenture; it is a type of long term unsecured bond (loan), taken out by a company, which it agrees to repay at specified future date. The company will usually pay a fixed rate of interest to debenture holders each year until maturity, and if it fails to repay either the interest or the principal amount of the loan when the time comes, the debenture holders can force the company into liquidation and try to recover, along with other creditors, their money from a sale of its assets. Periodic payment of interest is done prior to the payment of dividends to equity & preference share holders. So, it has lower risk as

comparison to the equity shares. It is tax deductible before the calculation of total tax bill of firm, so, a profitable business effectively pays less for debt capital than for equity. Periodic payment of Interest & face value at maturity is already known but due to change in market interest rate, price of the bond- debenture could be different. Market interest rate depends upon various factors like monetary policy, inflation etc. And issuing cost of debenture is low as comparison to the cost of issuance of shares.

In context of Nepal, security market is in developing stage. Equity shares are mostly traded security. Investors who want to take more risk, do have alternatives for investment but who are risk averter, does not have more choice of investment in Nepal as debenture issuance had not been done in full fledged as looking into the history of security market from the inception of Security Exchange centre in 1976.

The first company to issue debenture was Bottlers Nepal in 1986/87, which issued 5 million units with 18% coupon interest rate. And very few companies have issued debenture till now whereas in past few years we have seen more increase in debenture issuance as many commercial banks have issued debenture in recent years. This increase in issuance of debenture is due to positive roles played by Nepal Rastra Bank, Commercial bank, Government, Security board, stock exchange, broker's agents & ultimately the investors. With establishment of Securities Exchange Board of Nepal (SEBON), Nepal Stock Exchange (NEPSE) under stock exchange Act, 1983, establishment of license system for broker's and amendment of previous regulations, debenture market is slowly getting pace but again, more positive approach from investors & various concerned parties need to be developed. Since, debenture is unsecured, organizations issuing it, must convince the investors with profitable book & cash flow that can pay interest periodically & face value on maturity.

Company act 2063 any company can issue debentures if it is in need of funds but the use of funds has to be revealed prior to issuance. Bonds or debentures can be issued with or without any pledge provided the provision regarding issuance of bonds and debentures is mentioned in Articles of Association and Memorandum of the company. While issuing debentures company must provide full information on debentures being issued, like maturity period, interest rate and face value etc. Debenture issuance process is almost same as that of common stock issuance. Debentures are issued in primary market through trustee or could be privately placed. As per company act 2053 company should have an agreement with trustee if it is going to issue debenture by establishing any trustee. But as per company ordinance issued in late September

2005, any company should issue debenture through debenture trustee only. Later amendment draft to this ordinance was issued according to which banks, finance companies or merchant banks will be allowed to be a Debenture Trustee, if their

Articles include a provision that allows them to be such Trustee and they have the appropriate manpower and valuation capabilities. Company act 2053 also suggests that these debentures could be pledged or sold in secondary market. While transferring the ownership of debentures, buyer should request the issuing company. The issuing company then updates the same in debenture registration book maintained as per company act. This book contains information like name & address of debenture holder, number of shares owned by them, total amount paid and outstanding if any, date of registration of buyer's name as debenture holder and date and time of debenture holder's name stuck off. This book can be inspected by debenture holder at any time he may deem necessary. Interest and maturity value of debentures at the time of maturity is distributed as per the debenture registration book.

1.2 Focus of the Study

Investors can be divided into two group, Risk seeker & Risk averter. Risk seeker has choices to invest in Nepal but for risk averter, there is very few alternatives as low risk investment choices are not being issued frequently. Only government, issues low-risk debt instruments with some frequency which is also not sufficient. One of the low-risk alternate for investor, Debenture, is not popular as equity share in Nepal. So, the focus of the study is to find the root cause of it. The research will also focus on the nature of companies who have issued debentures with their characteristics & legal provisions regarding the debenture issuance.

1.3 Statement of the Problem

Whenever we talk to anybody on the alternatives of security investment that could be done in the Nepalese market, each will say about equity share capital (common share capital). Equity share capital is the most popular security investment in Nepal. Although SEBON & NEPSE have been established way back in 1983, other various security investment alternatives could not flourished in market which the researcher is deemed to study on why the debenture issuance could not be flourished as compared to the most popular equity share capital. And also the organizations tend to increase the capital by

issuing equity share capital rather than the debentures. So, the researcher is attracted to study on topic: Problem and & Prospects of Debenture Market in Nepal. Some of the points on which researcher thinks to be researched are:

- a) Whether there is the Problem & Future prospect of debenture in Nepal?
- b) Whether there is any Legal provision about debenture market in Nepal?
- c) What are the differences in debenture issuance with other security issuance in market share in Nepal?
- d) What are the trend of interest rate of deposits & coupon interest rate of debenture and bonds in Nepal?
- e) What are the statuses of Trading of debenture in Secondary market in Nepal?

1.4 Objectives of Study

The objectives of the study are listed below:

- a) To examine current position of Nepalese corporate debenture market
- b) To identify the problems faced by debenture market of Nepal
- c) To evaluate the potentials for the growth of debenture in the Nepalese corporate market.
- d) To provide suggestion and recommendation for the investors, researcher and Stakeholders about Nepalese corporate debenture.

1.5 Significance of the Study

The researcher in this thesis has tried to study the debenture market in Nepal with problem & future prospects of it. This thesis explains about debenture with its very technical terms. With study, this thesis explains on the solution on the debenture issuance in Nepalese security market. And till time few researches had been made in this subject. So, this thesis could be useful for both issuers & investors to know the debenture concept and problems & solution of it. So, ultimately this research could surely help in the debenture market in Nepal, in overall security market of Nepal. And, this research could be also useful for other researchers on debenture in Nepal.

1.6 Limitation of the study

Study on debenture market is done with the following limitations:

- a) The study is focused on corporate debenture market of Nepal only.

- b) The study is based on primary and secondary data.
- c) The data is taken up to the year 2066.
- d) The research is done as per the objectives.

Sampling has been used to conduct surveys. The study was done on the basis of the data provided by the organization. So, the output of the data is entirely dependent upon the data provided by organization. Although the study contains both qualitative and quantitative analysis, the use of statistical tools may be limited to a certain extent because of no availability of required data in some cases.

1.7 Organization of the Study

In order to provide clear picture of debenture market in Nepal the whole study has been divided into following five chapters:

Chapter I: Introduction

This chapter includes background of study, focus of study, statement of problem, objectives of study, significance of the study, limitations of study and organization of the study.

Chapter-II: Review of Literature

This chapter deals with the review of available literature. It includes review of previous published and unpublished Master degree thesis, books journals and articles etc.

Chapter-III: Research Methodology

This chapter explains the research methodology used in the study. It includes research design, population and sampling, sources of data, method of data analysis and research variables etc.

Chapter-IV: Data Presentation and Analysis

This chapter consists of the presentation and analysis of primary and secondary data.

Chapter-V: Summary, Conclusion and Recommendation

The last chapter summarizes the main conclusion that follows from the study and offers suggestion and recommendation for further improvement and conclusion of the study

CHAPTER II

REVIEW OF LITERATURE

2.1 Conceptual Review

2.1.1 Concept of debt

A debenture is a debt security issued by the borrower, purchased by the investor usually through the intermediation of a group or underwriters. Public debt is borrowings of the state or government taken from its public and foreign countries. As per A. H. Hanson public debt is debt owned by government to people and institution within its own borders (i.e. internal debt) and over the foreign creditors (i.e. external debt). Securities markets exist in order to bring together buyers and sellers of securities, meaning that they are mechanisms created to facilitate the exchange of financial assets. Security market may be divided in to primary and secondary market depending upon the security traded.

Primary market can be defined as a place used for initial trading of securities while issuing the securities. In other words primary market is a place where issuer offers security for sales. The new capital issues in primary market facilitate mostly for raising long term fund requirement. On the other hand secondary market is palace where securities once purchased from issuer is traded among the investors.

In other words secondary market is a place to further trade securities purchased from primary market. The only way to convert securities into cash is through sales in secondary market (Kohn; 1999: 180). Securities market can be classified into capital or money market depending upon the life span of the security. Commercial paper, certificates of deposit, treasury bills are some of the example of securities traded in money market. On the contrary security with maturity of more than a year is traded in capital market. Such securities include common stock, corporate and governments etc.

Debt securities market is a place where debt instruments like bonds, debentures, treasury bonds etc. are traded. Thus debt securities market plays vital role in the development of debt securities. For that debt market needs to be efficient, here efficient debt market is characterized by competitive market with low transaction cost, high level of heterogeneity among participants and low level of fragmentation with safe market infrastructure. The development of efficient money market requires the development of institutions, instruments and operating procedures that facilitate widening and deepening of the market and allocation of short term resource with minimum transaction costs and the minimum of delays. Debt market primarily includes government debt market and

corporate debt market and facilitates the transfer of capital from savers to the issuers or organizations requiring capital for government projects, business expansions and ongoing operations.

2.1.2 Government Debt Market:

In government debt market government debt or public debt are traded. As discussed earlier, government collects funds from public in order to bridge the budget deficits. In developing countries like Nepal, government is notable to invest in development projects through tax revenues only, due to which government is compelled to collect funds from public in form of government debt. Another reason for issuing public or government debt is to involve its people in development of the country. Government collects funds through various instruments like treasury bonds, national saving bonds, development bonds, municipal bonds etc. To facilitate the issue and trading of such instruments government debt market was evolved. Thus government debt market can be defined as a place where primary and secondary trading of government debt instrument takes place. Government debt thus being very important is development of country, government debt market is considered crucial. It generates funds for the government and investment opportunities for the investors at less risk. Government debt market converts ideal small savings into huge fund ready for investment and reduce dependency of government towards foreign nation. Thus development of government debt market can be linked with development of the country.

2.1.3 Corporate Debt Market:

Corporate houses require fund frequently in order to upgrade themselves with the change in technology, for further investments, in order to increase capital and for many more reasons. To fulfill such scarcity of funds one way is to issue debt in the form of debentures and bonds. And to facilitate such trading corporate debt market is required. Corporate debt market brings buyer and seller of corporate debt at one place to conduct trading of such debt instruments. Corporate bond is a certificate of promise made by issuing organization to pay the specified amount upon maturity and in the mean time to pay interest in regular interval. In other words corporate debt market is a place where primary and secondary trading of corporate debt instruments takes place. Since corporate debt is issued by private organization it is not considered as safe as government debt. In case of insolvency of firm bondholders will get payment depending upon the financial

situation of the issuer. Corporate bonds come in several different forms. The basic classification include collateralized (secured) or uncollateralized (unsecured), senior or junior (subordinate), callable or non callable and convertible or nonconvertible bonds (*Thygerson; 1993: 59*).

A corporation can issue common stock only once but can issue bonds and debentures as much as it likes depending on its financial status. So there is huge prospect in bond and for the development of bond and debenture corporate debt market needs to be developed. Various enhancements like giving credit rating to organization issuing debt, introducing disclosure system, enacting various laws which could eliminate loop holes in corporate debt market that is pulling is back. Corporate debt market plays very important role in private organization by arranging additional funds require by firms. This will ultimately help in growth of the organization.

2.2 History of Corporate Debt Market in Nepal

In Nepal the first instance of debt was cited back in 1961 AD through the issuance Treasury bill amounting Rs. 7 million with 1% interest rate. The debt was issued in order to fulfill the budget deficit, so with the view that public participation is must for development of the country interest factor wasn't considered important. Later in 1963 AD, with the introduction of Public Debt Regulation Act 1963, Development bond worth Rs. 137 million was issued. From 1984 AD government started to borrow funds from National Saving Bonds too. In order to facilitate the transaction of those bonds Security market center (SMC) was established in 1976 AD which in the initial phase was limited to primary trading of security only. Later in 1981 AD it started secondary trading of the security but that too was related to trading of government securities only. After that since no law regarding trading of securities were in place, Securities Exchange Act, 1983 was introduced back in 1983 AD. This act facilitated trading of securities and restricted the trading to the security of listed companies only. Later in 1984 SMC was changed into Securities Exchange Center (SEC). SEC was the only institution to manage and operate primary and secondary trading of both government and corporate securities at that time.

This provoked the thought for the need of another institutional mechanism to avoid potential conflict of interest between the services provided. Securities exchange act 1983 was amended in 1993AD, paved the way for the structuring of securities market in Nepal. The first amendment of securities exchange act 1983 in 1993 AD influenced the

establishment of Securities Board of Nepal (SEBO) with a purpose to regulate and develop securities market in Nepal. SEBO was established to register the existing securities and approve the issuance of new securities. The first amendment of securities exchange act also changed the SEC into Nepal Stock Exchange Ltd. (NEPSE) and limited its operation to secondary transaction and management of securities. NEPSE started full-fledged stock exchange from January 13, 1994. Later in 1997 AD second amendment was made to Securities exchange act, 1983. This made provision for registering securities business persons and empowered SEBO to provide license to them. The amendment also made securities businesspersons to submit annual reports incorporating the securities transactions carried out by them to SEBO and the listed companies to submit their annual and semiannual reports to SEBO.

Corporate debt issuance in Nepal was observed for the first time in 1986/87 with the issuance of 18% 5 million debentures by Bottlers Nepal, which was later redeemed at maturity (*Bhatpara; 1995: 193*). Later in 1992/93, Jyoti Spinning Mills Ltd issued 14% bond of 20 million which was managed by NIDC (*Baral, 1999*). Shree Ram Sugar Mills Ltd then issued 14% convertible and redeemable debenture in 1997/98. The debentures were secured and amounts Rs. 93 million with par value of Rs. 1,000 and convertible to shares after 4 years. These were listed in exchange but no separate trading system was followed. Very few of these debentures were traded and were later delisted (and redeemed) in fiscal year 2001/02 (Bhattra, Rabindra, Debentures are welcome, New Business Age, 2003).Corporate debt issuance then progressed with issuance of 8.5% Himalayan Bank Limited debenture 2009 with following features: (*Source: Himalayan Bank Prospectus,2002*)Rs. 360,000,000 worth of debenture Rs. 100,000,000 worth issued through issue manager Rs. 260,000,000 worth issued through private placement semiannual interest payment 8.5 % coupon interest rate Maturity period of 7 years Rs. 1,000 par value and Unsecured in nature Nepal Investment Bank then followed with issue of 7.5% Nepal Investment Bank Bond, 2010 in 2003 AD. It had following feature: (*Source: Nepal Investment Bank Prospectus, 2003*) Rs. 300,000,000 worth of debenture Rs. 10,000,000 worth issued through issue managers. 200,000,000 worth issued through private placement semiannual interest payment7.5% coupon interest rate Maturity period of 7 years Rs. 1,000 par value Next to issue debenture was another bank in 2005 which was Everest Bank Limited. Everest bank issued 300 million worth debentures with following features: (*Source: Everest Bank Debenture Prospectus, 2005*), Debentures worth Rs. 300,000,000 Semiannual interest payment6% coupon interest rate Maturity

period of 7 years Rs. 1000 Par value Bank of Kathmandu then contributed to the development of corporate debt market in 2005 with issuance of debentures worth 200 million which had following features: (*Source: Bank of Kathmandu, Debenture Prospectus, 2005*) Debentures worth Rs. 200,000,000 Rs. 50,000,000 worth issued through issue manager Rs. 150,000,000 worth issued through private placement Semiannual interest payment 6% coupon interest rate Maturity period of 7 years Rs. 1000 par value A year later in 2006, Nepal Investment Bank issued 6% Nepal Investment Bank Bond 2070 worth NPR 250 million with features listed below: (*Source: Nepal Investment Bank, Debenture Prospectus, 2006*) Debentures worth Rs. 250,000,000 Rs. 80,000,000 worth issued through issue manager Rs. 170,000,000 worth issued through private placement Semi Annual interest payment 6% coupon interest rate Maturity period of 7 years Rs. 1000 par value Nepal Industrial Commerce Bank Limited issued —6% Nepal Industrial Commerce Bank Bond 2070 with features listed below: (*Source: Nepal Industrial & Commerce Bank, Debenture Prospectus, 2006*) Debenture worth Rs. 20,000,000 Rs. 50,000,000 worth issued through issue managers Rs. 150,000,000 worth issued through private placement Semi Annual interest payment 6% coupon interest rate Maturity period of 7 years Rs. 1000 par value In the same year Nepal SBI Bank Ltd also issued —6% Nepal SBI Bank Bond 2070 worth 200 million with following features: (*Source: Nepal SBI Bank, Debenture Prospectus, 2006*) Debenture worth Rs. 20,000,000 Rs. 50,000,000 worth issued through issue managers Rs. 150,000,000 worth issued through private placement Semi Annual interest payment 6% coupon interest rate Maturity period of 7 years Rs. 1000 par value In 2007, Nepal Investment Bank Ltd issued . Nepal Investment Bank Bond-2071 worth 225 million with following features: (*Source: Nepal Investment Bank, Debenture Prospectus, 2007*) Debenture worth Rs. 250,000,000 Rs. 50,000,000 worth issued through issue managers Rs. 200,000,000 worth issued through private placement Semi Annual interest payment 6.5% coupon interest rate Maturity period of 7 years Rs. 1,000 par value In 2008, Nepal Electricity Authority issued NEA Bond, 2069 worth NPR 1500 million with following features: (*Source: NEA, Debenture Prospectus, 2008*) Debenture worth Rs. 1,500,000,000 Rs. 1,350,000,000 worth issued through issue managers Rs. 150,000,000 worth issued through private placement Semi Annual interest payment 7.75% coupon interest rate Maturity period of 5 years Rs. 1000 par value In same year 2008,

Himalayan Bank Ltd issued 8% H BL debenture, 2072 worth NPR 500 million with following features: (*Source: Himalayan Bank Ltd, Debenture Prospectus, 2008*) Debenture worth Rs. 5,000,000,000 Rs. 400,000,000 worth issued through issue managers Rs. 100,000,000 worth issued through private placement Semi Annual interest payment 8% coupon interest rate Maturity period of 7 years Rs. 1000 par value Again in 2008, Kumari Bank Ltd issued —KBL Bond, 2069 worth NPR 400million with following features: (*Source: Kumari Bank Limited, Debenture Prospectus, 2008*) Debenture worth Rs. 400,000,000 Rs. 320,000,000 worth issued through issue managers Rs. 8,000,000 worth issued through private placement Semi Annual interest payment 8% coupon interest rate Maturity period of 5 years Rs. 1000 par value.

Nepal Investment bank issued Nepal Investment Bond-2072 worth NPR 250 million with following features: (*Source: Nepal Investment Bank Ltd, Debenture Prospectus, 2008*) Debenture worth Rs. 250,000,000Rs. 20,000,000 worth issued through issue managers Rs. 50,000,000 worth issued through private placement Semi Annual interest payment 8% coupon interest rate Maturity period of 7 years Rs. 1,000 par value In the same way in 2008, NABIL Bank Ltd issued. NABIL Bank Bond-2075worth NPR 300 million with following features: (*Source: NABIL Bank, Debenture Prospectus, 2008*) Debenture worth Rs. 3,000,000,000Rs. 240,000,000 worth issued through issue managers Rs. 60,000,000 worth issued through private placement Semi Annual interest payment 8.5% coupon interest rate Maturity period of 10 years Rs. 1,000 par value Similarly Laxmi Bank issued Laxmi Bank Debenture 2072 worth NPR 350 million with following features: (*Source: Laxmi Bank, Debenture Prospectus, 2008*) Debenture worth Rs. 350,000,000Rs. 320,000,000 worth issued through issue managers Rs. 80,000,000 worth issued through private placement Semi Annual interest payment 8.5% coupon interest rate Maturity period of 7 years Rs. 1,000 par value And Siddhartha Bank Ltd issued. Siddhartha Bank Ltd Debenture, 2072 worth NPR 400 million with following features: (*Source: Siddhartha Bank Debenture Prospectus, 2008*) Debenture worth Rs. 4,000,000,000Rs. 320,000,000 worth issued through issue managers Rs. 80,000,000 worth issued through private placement semiannual interest payment 8.5% coupon interest rate Maturity period of 7 years Rs. 1,000 par value Very slow development of debt market especially corporate debt market in Nepal can be observed. The reason for this is traditional thinking and lack of awareness about the securities among investors. Market interest rate in Nepal is so low in comparison to that of debenture that there is no any investment alternative after sales of debenture. So people are keen to hold the debenture

rather than trading them for better opportunities. In current situation some positive development can be seen in the trend of debenture issuance. In last six years commercial banks had come forward to issue debenture. This is mainly due to provision made by NRB to increase the capital to 1 billion by 2010 AD. So, more instances of debt issuance can be expected in near future. With the increment of literacy proportion in Nepal some private organization are too expected to issue debts in order to fulfill their scarcity of funds.

2.3 Long Term Debt Instruments

By the term debt instruments it generally refers to bonds and debentures. Bonds and debentures are synonymous in nature. Bonds and debentures may be secured or unsecured with maturity of short, mid and long term. Bonds or debentures are certificate that states amount to be paid in maturity, rate of interest and interest payment interval and time of maturity. Apart from bonds and debentures some other instruments can also be found in market. Some of the long term debt instruments are illustrated below:

2.3.1 Debentures:

Debentures are most popular debt instrument used by organizations for generation of fund. Though, debentures being unsecured in nature there is risk of default while paying interest and principal. Due to which only well-established and credit worthy organizations are expected to get good response from issuance of debentures. Despite this provisions are made in indenture in order to save investors interest.

2.3.2 Subordinate Debentures:

By the word subordinate it means inferior, so here subordinated debenture are the debt that is ranked behind other debt in respect of claiming on assets. To make it clearer, subordinate debentures holder cannot be paid until all senior debt as named in debenture indenture has been paid at the time of liquidation or reorganization. Due to this feature of subordinate debenture it needs to provide more incentive to it's investors in order to attract them.

2.3.3 Mortgage Bond:

Mortgage bond are the debt instrument which are backed by security of the issuing organization. Mortgage is done in the fixed assets which may be first, second or third depending upon debenture for the total debenture amount. This provides trustee on behalf of bond holder right to take over the property and sell it in order to payback the debenture holders in case of default due to any of provision mentioned in the bond indenture.

2.3.4 Income Bond:

Income bond holder gets interest payment in regular interval as specified in bond indenture but only if the issuing organization is earning. In other words if the issuing organization cannot earn as much as required to pay interest to bond holders, then the company is not obliged to pay interest.

These interests, however is accumulated for payment later when organization earns, but generally the period is up to three years. Income bonds thus are not too much popular among the investors'.

2.3.5 Equity – Linked Debt:

These are the debt instrument with an option to own a common stock of the company. Debt issued with warrants provides opportunity to debt holders town common stock of the organization and continue to hold the debt instrument. This is done mainly to attract investors to invest in debt with lower rates. Convertible bonds are similar to this type of debt which allows holder to exchange the bonds with certain number of stock. These bonds are considered very attractive, especially when issued by firms with high growth rate. In return for this attractive feature, a convertible bond normally requires the firm to pay less interest that would be paid for a comparable nonconvertible bond. Exchangeable debt on the other hand gives opportunity to its holder to exchange the bond with the common stock of another corporation. This type of financing is applicable to companies that have stock holdings in another organization.

2.3.6 Treasury bills:

Treasury bills are short term debt instruments with no coupon interest paid. These are discounted at the time of issuance and the holder gets full value at the time of maturity. Although treasury bills are sold at discount, their dollar yield (that is difference

between the purchase price and the face value if bill is held to maturity) is treated as interest income for tax purpose. The discount rate thus can be calculated by following formula:

$$\text{Discount rate in \%} = (100 - \text{BP}) \times 365 \times 100 \text{ BP} \times T$$

Where,

BP = Bill price or purchase price of Treasury bill

T = Maturity period of Treasury bills

Treasury bills are generally used to generate short term fund which may be used to repay previously issued matured treasury bills. These are generally issued by government itself in order to fulfill its short term fund requirement.

2.3.7 Municipal bonds:

Municipal bonds are debt obligations issued by states, cities, counties other governmental entities to raise money to build schools, highways, hospitals and sewer systems, as well as many other projects for the public good. These types of bonds are generally tax exempted. So these are more popular among investors due to certainty, safety, marketability and tax exemption. Municipal bonds may be issued with or without coupon interest. In case of non coupon or zero coupon municipal bond, they are sold at a substantial discount from the face amount and at the time of maturity the investor receives the full face amount of the bond. An investor needs to be very much clear and careful while investing in debt instruments. Debt instruments being less risky than common stock and preferred stocks, makes it to be ultimate destination for the investment among investors. Furthermore fixed interest income until maturity despite issuer's loss or profit and fixed maturity makes its market lucrative. But while investing one must consider its drawbacks as no opportunity to take part in management limited taxable interest income in spite of company's huge profit. Similarly in investor's perspective too debt may sound more preferable in comparison to common stock due to features like tax benefit, flexibility in capital structure management, minimum cost of capital. These features may be overshadowed by its negative points like obligation to pay after maturity, permanent burden to the company, increment in liability, reduction in goodwill. So, proper evaluation needs to be carried out both by issuer and investor while issuing and investing in debt instruments.

2.4 Types of Government Debt Securities

Government raises debt needed for development of infrastructure of the country through internal and external resources. Government to its people is considered as Government too believes in public participation in development of country through debt lending, hence opting internal resource for debt collection. Government thus, collects funds from public through issuance of different debt securities. The most commonly used securities for debt collection are discussed below.

2.4.1 Treasury Bills

Treasury bills are most commonly used short term debt to raise government fund. They are generally issued in order to bridge budget deficit gaps. It is normally issued with maturity of 91 days but it may sometimes have matured 365 days. Treasury bills are normally auctioned on discount basis with face value refundable at the time of maturity.

2.4.2 Development Bonds

Development bonds are long term government debt with normal maturity of 5 years. Development bonds generally pay semiannual coupon interest where interest is taxable. They, being long term debt, can be pledged as collateral while taking loans. Both individuals and corporate houses can apply and hold government development bonds.

2.4.3 National Saving Bond

These are most popular government among individual investors. Investors apart from commercial banks can have the ownership of this bond. They pay non taxable semi-annual interest to its investors. These are normally long term debts with normal maturity of 5 years and can be pledged while taking loans.

2.4.4 Citizen Saving Certificate

These bonds are almost synonymous to other government bonds that have long-term maturity. Like other long term government bonds they also can be used as collateral while borrowing.

2.4.5 Special Bond

Special bonds are issued on special occasions for short time period. They can be issued by government to individual or institution as a payment for government dues. These bonds can also be used as collateral by bondholders to generate funds.

2.5 Terms related to Corporate Bond Market:

2.5.1 Interest Rate:

People lend their saving in order to get some benefit from it. Such benefit is termed as interest. In other words it is a charge made for a loan, or a credit facility or a payment made by borrower to lender for the use of the money borrowed. It is calculated as a percentage of the amount borrowed. Interest rate may be simple, compound and discount. The interest rate depends on the relationship between supply and demand. If the demand for loan 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. Interest rate plays very important role in corporate bond market. In fact it is a driving factor for the investment in corporate bonds or debentures. Interest rates provided determines the income that an investor will earn and also capital gains or losses that the investor will incur. Bonds pay interest that can be fixed, floating or payable at maturity. Most debt securities carry an interest rate that stays fixed until maturity and is a percentage of the face (principal) amount. Mostly interest rates are paid semi annually to the bond or debenture investors.

2.5.2 Inflation:

Inflation is an increase in the supply of currency or credit relative to the availability of goods and services, resulting in higher prices and a decrease in the purchasing power of money. An investor should clearly monitor inflation rate too while investing in debt. The real interest rate can be obtained by subtracting the inflation rate from the nominal interest rate. And nominal interest rates are highly correlated with inflation. If only interest rate is considered while investing then there is a risk of it being overshadowed by high inflation rate. In other words return earned through nominal interest on investment may be spent in compensating rise in price due to inflation. Inflation causes tomorrow's dollar to be worth less than today's; in other words, it

reduces the purchasing power of a bond investor's future interest payments and principal, collectively known as cash flows. Inflation also leads to higher interest rates, which in turn leads to lower bond prices. Inflation is caused due to steep rise in economic growth, which raises the cost of goods and services and leads to higher interest rate and erodes bond value. Thus the nominal interest rate. Bonds or debentures offer fixed interest rate for investors. But the real rate of return that investors receive is calculated by subtracting inflation rate from normal interest rate. Inflation rate is measured by percentage change in the Consumer Price Index (CPI) over the period. CPI can be calculated by collecting the prices of consumer goods and services and leads to higher interest rate and erodes bond value. Thus the rate of inflation too needs to be considered while investing along with normal interest rate. In Nepal, CPI is calculated by NRB. Inflation for a single period can be measured as follows:

$$q_t = \frac{CPI_{(t+1)} - CPI_t}{CPI_t}$$

Where,

q_t = inflation rate for the time t

CPI_t = Consumer Price Index at beginning of time t

$CPI_{(t+1)}$ = Consumer Price Index at end of time t

Annual influence rate is given by $(1 + \text{per month } q)$

To provide full compensate for the investor borrower has to adjust the inflation rates with nominal rates. Then adjusted normal rate of return can be derived from:

$$r = rr + q$$

Where,

r = normal rate of return

rr = real rate of return

q = inflation rate

With the formula given above, borrower or lender can easily determine the real interest rate and invest or lend accordingly.

2.5.3 Investment Bankers / Underwriters of securities:

Investment bankers or underwriter acts as a bridge between investors and issuing company. The agent responsible for finding buyer for brand new securities is called the investment banker or underwriter. Investment bankers purchases initial offerings of the

issuing company and later sell to general public. At the time of issuance of new security member of issuing firm and investment bankers hold pre-underwriting conferences where amount of capital to be raised, security to be issued and the terms of the agreements are drawn up by the investment banker (*Weston & Copeland; 1992:960*). The risk to the underwriter is that the issue may not attract buyers at a positive Filing, legal and tax incurred at the time of initial offering apart from underwriting fees are paid by the issuing organization. Investment bankers also involve in advising 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.

2.5.4 Duration of bond

Duration is defined as the weighted average number of years that cash flows occur. Cash flows include both coupon and principal payments. The weights average number of years until the cash flows occurs, with the relative present values of each cash flow used as the weights (*Francis; 1988: 73*). Frederic Macaulay was the first person to introduce the concept of duration in 1938, so it is also called as Macaulay Duration. 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. Macaulay duration can be used to determine the following: The duration of a zero coupon bond is equal to its time to maturity. The duration of a coupon bearing bond is less than its time to maturity. If two bonds have the same coupon rate and yield, then the bond with the greater maturity has the greater duration. If two bonds have the same yield and maturity, then the one with the lower coupon rate has the greater duration. Duration may be derived from the function of term, coupon, maturity value and yield to maturity. Duration is directly proportionate to term and inversely to coupon rate or yield to maturity. This means with increase in term will increase duration of the bond and vice – versa. Similarly increase in coupon rate or yield to maturity cause decrement in duration of bond and vice – versa.

2.5.5 Immunization:

Immunization is the strategy for protecting a bond portfolio against the risk of rising interest rates. The concept of immunization was emerged after the introduction of concept of duration of bond. 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 the period (*Alexander; 2003 : 59*). 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. Immunization is subjected to reduce only interest rate risks; it doesn't minimize other risks of portfolio though corporate bonds are included.

Immunization expected to exist when total value of a portfolio of bonds at the end of some specified planning horizon equals the value of the portfolio based on the YTM that existed when it was purchased. For accomplishment of immunization investment should be made in portfolio with equal duration or the promised outflows. 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

When 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. Immunization is used only to minimize interest rate risk in the portfolio of the bonds with equal duration. Thus the bond duration is an insightful measure of the time structure of a bond's cash flows and a measure of a bond's interest rate risk which is useful in development of strategies for managing the interest rate risk in a portfolio of bonds.

2.5.6 Yield Curve:

Yield curve, also known as term structure of interest rate, is concerned with the relationship between yield and maturity of security with same default risk. It also shows the relationship between short term interest rates and long term interest rates. It describes

the pure time value of money for different lengths of time. It is obtained by calculating yield to maturity at different time to maturity. All the factors other than maturity must be held constant if the relationship studied is to be meaningful. The most common shape of the yield curve mostly seen in modern days is upward sloping but degree of steepness has varied. Real rate of interest, the rate of inflation and the interest rate risk are the three components used for the determination of the shape of the Yield Curve. To determine the shape of the yield curve three theories were developed. The theories are Liquidity premium theory, Segmentation theory and Expectations theory. As per liquidity premium theory on average the yields from long-term bonds must be higher than the yields from short-term bonds. This is due to investors pay price premium on short maturities resulting lower yields in order to avoid the higher interest rate risk present in bonds with longer maturities. This would result yield curve to slope upward. Segmentation theory says loan market is segmented on the basis of the maturity of the loan, which may be short term or long term. Furthermore market interest rate of loans is determined by demand and supply of loans. Thus the yield curve is determined by relationship of prevailing market interest rate in each market segment. Yield curve would slope upward when there is low interest rate in short-term market segment and high interest rate in long-term market segment. Similarly if interest rate is high in short-term market segment and low in long-term market segment the yield curve would slop downwards. Expectation theory, however investors expect rates to rise the yield curve would slope upward and vice versa.

2.5.7 Interest Rate Swaps:

Swap means to trade or exchange something for something else. In case of interest rate swaps exchange of two different cash flows between two counterparties which may be two corporations, two financial institutions or any two borrowers

2.5.8 Bond Swaps:

Bond swaps involve sales of one bond issue ahead of its maturity followed by immediate purchase of another. Bond swaps are undertaken mostly in order to increase a bond portfolio's return. Bond swaps may be of different types. Bond swap may be substitution swap which involves exchange of bonds that are perfectly substitutes in every respect except their prices or YTM. In case of inter –market spread swap, bonds being exchanged might have price difference but issued by same corporation. Rate anticipation swap is another instance of bond swap where investor purchases short term bonds and

sells long term bond in order to avoid risk arose due to change in interest rate. Pure yield – pick up swap is the simplest bond swap. In which no speculation is done and bond are swapped for higher YTM.

2.6 Key Characteristics of Bonds

Different bonds have different characteristics but illustrated below are some common characteristics of bonds.

2.6.1 Par Value:

Par value is the value of the bond on which interests are calculated. In other words par value is the value that issuer agrees to pay to the purchaser of bond at the time of its maturity. Par value generally represents the amount of money the firm borrows and promises to repay on the maturity date (*Brigham, Gapenski and Ehrhardt; 1999:346*).

2.6.2 Coupon rate:

Coupon rate states the rate of interest paid to the bond holder. Bonds pay interest that can be fixed, floating or payable at maturity. Most debt securities carry an interest rate that stays fixed until maturity and is a percentage of the face (principal) amount. However interest payments are done generally in semi –annual basis. Some bonds have no periodic interest payments. Instead, the investor receives one payment at maturity that is equal to the purchase price plus the total interest earned, compounded semi – annually at the (original) interest rate. In case of zero—coupon bonds, they are sold at a substantial discount from their face amount. For example, a bond with a face amount of Rs. 20,000 maturing in 20 years might be purchased for about Rs. 5,050. At the end of the 20 years, the investor will receive Rs. 20,000. The difference between Rs. 20,000 and Rs. 5,050 represents the interest, based on an interest rate of 7%, which compounds automatically until the bond matures. If the bond is taxable, the interest is taxed as it accrues, even though it is not paid to the investor before maturity or redemption.

2.6.3 Maturity:

A Bonds maturity refers to the specific future date on which the investor's principal will be repaid. Maturity period of bond plays huge role in determining the value of bond. Bond maturities generally range from one day up to 30 years. Income cases,

bonds have been issued for terms of up to 100 years. We don't find any instance of bonds having maturity up to 100 years. But in US bonds with maturity of 100 years was witnessed in the 1800s when Disney and Coca – Cola issued 100 years bond. It was sold out immediately which showed the existence of people having interest in 100 year bonds. But for issuing long term bonds the issuer must have good credibility. Generally maturity ranges are often categorized as follows: Short – term notes: maturities of up to five years;

Intermediate notes/bonds: maturities of five to 12 years; long – term bonds: maturities of 12 or more years. In case of long – term bonds there is risk of fluctuation in price of bond with little change in interest rate. So, one should issue bond with appropriate maturity period.

2.6.4 Call Provisions:

Bonds might have redemption, or call provisions that would allow or require the issuer to repay the investors' principal at a specified date before maturity. Bonds are commonly called when prevailing interest rates have dropped significantly since the time the bonds were issued. Call provisions are advantage to issuer as they can exercise whenever they like. If interest rate goes up, the company will not call the bond, and the investor will be stuck with the original coupon rate on the bond, even though interest rates in the economy have risen sharply. However if interest rates fall, the company will call the bond and pay off investors, who will then have to reinvest the proceeds at the current market interest rate which is lower than the rate investor were getting on the original bond. Conclusively the investor loses when interest rates go up, but doesn't reap the gains when rates fall. While calling the bonds, issuer pays price higher than market price. The difference is termed as call premium. While investing in bonds one should always take an account of call provisions.

2.6.5 Puts:

Bonds having puts provide investors the option of requiring the issuer to repurchase the bonds at specified times prior to maturity. Investors typically exercise this option when they need cash for some purpose or when interest rates have risen since the bonds were issued. They can then reinvest the proceeds at a higher interest rate.

2.6.6 Collateral:

Collateral is property used as security against bonds. The security placed as collateral can be used to recover the bond's maturity value in case of default by issuer. It is not necessary that bonds need to have collateral, some might be collateralized and some might not. Depending upon collateral bonds may be secured or unsecured or sinking fund bond. Bonds backed by security or collateral are termed as secured. On the contrary bonds that are not backed by security is called unsecured bond. However in case of sinking fund bond, the issuer accumulates certain amount each year for payment of bond at the time of maturity. The sinking fund agent, who is generally a trustee mentioned in indenture, collects such yearly payments and either calls at premium or buys the bonds through the market.

2.6.7 Indenture

The indenture is a written legal agreement between the corporation issuing the bonds and the lender which contains detail of terms of bond issue and restrictions on the issuing company. Generally contract is done with trustee who represents the investors of the bond.

2.6.8 Other Features

Apart from above mentioned features some other features like convertible bonds where bond holder can convert their bond in to common stock of same company make bond more attractive. Bond also has features like warrant, an option to buy common stock, income bond which gives benefit to issuer by allowing it to pay interest only when the organization is in profit. Purchasing power bond gives benefit to bond holder by protecting it from inflation by its feature of interest payment based on inflation rate.

2.7 Risk associated with Bond Investment

All investments offer a balance between risk and potential return. The risk is the chance that one will lose some or all the money that is invested. The return is the money that one stands to make on the investment.

The balance between risk and return varies by the type of investment, the entity that issues it, the state of the economy and the cycle of the securities markets. As a general rule, to earn the higher returns, one has to take greater risk. Conversely, the least

risky investments will also have the lowest returns. The bond market is no exception to this rule. Bonds in general are considered less risky than stocks for several reasons like they carry the promise of their issuer to return the face value of the security to the holder at maturity. On the contrary stocks do not have such promise from their issuer. The other thing is most bonds pay investors a fixed rate of interest income that is also backed by a promise from the issuer. Stocks sometimes pay dividends, but their issuer has no obligation to make these payments to shareholders. Historically the bond market has been less vulnerable to price swings or volatility than the stock market which makes it safer than that of common stock. The average returns from bond investments have also been historically lower, if more stable, than average stock market returns due to it being less risky. However no any investment is free from risk so some of the risks associated with bond investment are discussed below.

2.7.1 Interest rate risk

Interest rate risk refers to risk caused due to fluctuation of bond interest rate. When interest rate of bond rises, prices fall; conversely, when rates decline, bond prices rise. The longer the time to a bond's maturity, the greater will be its interest rate risk.

2.7.2 Duration risk

Duration risk deals with the possibility of loss in bond investment due to fluctuation in duration of the bond. The modified duration of a bond is a measure of its price sensitivity to interest rates movements, based on the average time to maturity of its interest and principal cash flows. Duration enables investor to more easily compare bonds with different maturities and coupon rates by creating a simple rule: with every percentage change in interest rates, the bond's value will decline by its modified duration, stated as a percentage. For example, an investment with a modified duration of 10 years will rise 10% in value for every 1% decline in interest rates and fall 10% in value for every 1% increase in interest rates. So while investing in bond average duration needs to be increased when the rate is expected to decline, and decrease average duration when rate is expected to rise.

2.7.3 Reinvestment risk

Reinvestment risk exists when market interest rate is declining. When interest rates are declining, investors have to reinvest their interest income and any return of principal, whether scheduled or unscheduled, at lower prevailing rates.

2.7.4 Inflation risk

Inflation risk is another major consideration that is to be made while investing in bond. Inflation causes reduce in the purchasing power of a bond investor's future interest payments and principal, collectively known as cash flows. Inflation also leads to higher interest rates, which in turn leads to lower bond prices. To defy this risk one can invest in purchasing power bonds which gives return based on inflation rate.

2.7.5 Market risk

Market risk is the risk associated with decline of whole bond market, bringing the value of individual securities down with it regardless of their fundamental characteristics. Despite this occurs in worst case scenario, we still need to consider market risk while investing in bond.

2.7.6 Selection risk

Selection risk is based in the risk that an investor chooses a security that underperforms the market for reasons that cannot be anticipated. This type of risk is unpredictable in nature and difficult to be assessed.

2.7.7 Default risk

Default risk refers to the possibility that a bond issuer will be unable to make interest or principal payments when they are due. If these payments are not made according to the agreements in the bond documentation, the issuer can default. This risk is minimal for mortgage-backed securities issued by government agencies or government sponsored enterprises and most asset-backed securities, which tend to carry bond insurance that guarantees payments of interest and principal to investors.

2.7.8 Event risk

The risk that a bond's issuer undertakes a leveraged buyout, debt restructuring, merger or recapitalization that increases its debt load, causing its bonds' values to fall, or interferes with its ability to make timely payments of interest and principal. Event risk

can also occur due to natural or industrial accidents or regulatory change. (This risk applies more to corporate bonds than municipal bonds. Bond though have less risk than that of other securities, one should not ignore the minimal risk present. So proper risk assessment should be carried out before investing in bond so as to ensure certain return from the investment.

2.8 Bond Ratings

Bond ratings here refer to the quality rating given to each bond by individual securities rating agencies that reflects the probability of bond going into default. Bond with high rating are considered most secured while lower rating bonds are considered unsafe. Bond rating helps investors to invest on bonds. Various qualitative and quantitative factors are considered while rating bonds. Some of which are discussed below :(*Brigham, Gapenski and Ehrhardt; 1999* :)

Ratios: Ratios are best measure to determine the rating of any organization. The better the ratios like debt ratio, times interest earned ratio, current ratios of the organization the higher would be the rating.

Security: Bond rating varies depending upon security of the bond. Secured bonds are rated higher than unsecured bonds and for secured bonds; bonds with high value security are always rated higher.

Subordination provision: Subordination of bond to other debts would result in decrement of security. Conversely a bond with other debt subordinated to it will have somewhat higher rating.

Guarantee provision: Some bonds are guaranteed by other strong firms which would provide bond of weaker companies rated as the organization guarantying the bond. This usually happens when the bond issuing organizations are sister concern of the guarantying organization.

Sinking fund: Bond with sinking fund provision is considered safe and rated highly than other bonds.

Maturity: Bond having shorter maturity period are considered less risky in comparison to the bond with long maturity. This would cause change in ratings of bond. Above are the basic factors for judging the bonds present in the market. Apart from above antitrust, environmental factors, regulation etc are also considered while determining the rating of the bond. Basically main factor for rating bonds is risk factor, bonds with higher risk are rated low and bonds with lower risks are rated high.

2.9 Buying and selling rules of Securities

Securities price is fluctuating in nature and varies with small change in market variables. Due to such change in market price of securities one can get capital gain through buy and sell of those securities. Through the trading of security income is generated by purchasing securities when its price is low and selling when the price is high. Despite the fact when to buy and sell the securities in the market where market price is highly fluctuating is difficult task to the investor. Market depending upon price of securities can be divided in to bear market and bull market. Securities market may be termed as bear market when securities price is in decreasing trend and conversely bull market is the place where securities prices are in increasing trend. With the identification of the type of market one can get investment benefit by buying securities in bear market and selling it in bull market. Apart from market price of securities, required and expected rate of return can also be considered while buying and selling of the securities. Securities are under priced when expected rate of return is greater than required rate of return. On the other side if the expected rate of return is less than required rate of return securities are overpriced. But if both expected and required rate of return are equal then the security is rightly priced. As an investor one should buy securities when it is overpriced and sell when it is under priced. In case of rightly priced securities no trading should be done. Table appended below would clarify more regarding investment in securities based on expected and required rate of return.

- 1 Expected rate of return $>$ required rate of return under priced Buy
- 2 Expected rate of return $<$ Required rate of return Over priced Sell
- 3 Expected rate of return = required rate of return exactly priced No trading

2.10 Valuation of Bond

Bond is a long term debt instrument where issuer agrees to pay certain amount at the time of maturity and periodical interest in between. It being long term while investing in bond value should be computed in order to identify improper pricing of the security. Value of any asset is computed by determining the present value of the cash flows the asset is expected to produce. In case of bond, bond holder gets certain amount as interest each period and gets maturity value at the time of the maturity of the bond. Thus value of bond represents sum of present value of the periodical interest payments and the par value of bond due at the time of maturity. Bond value is variable in nature, its value changes with the change in any of the above variable. Value of bond would increase with increase in coupon interest rate of the bond and vice versa. Similarly increase in loan tenure would cause decrease in the value of bond and decrease would cause increase in the value of bond. So while purchasing bond either in primary or secondary market value along with above variable needs to be evaluated. Valuation of bond depends on the type the bond is i.e. Ordinary Bonds, Callable Bonds and Perpetual Bond. Valuation of these bonds is illustrated below.

$$V_b = \frac{INT}{(1+k_d)^1} + \frac{INT}{(1+k_d)^1} + \frac{INT}{(1+k_d)^2} + \dots + \frac{INT}{(1+k_d)^N} + \frac{M}{(1+k_d)^N}$$

$$\sum_{t=1}^n \frac{INT}{(1+k_d)^t} + \frac{M}{(1+k_d)^N}$$

Where,

M = maturity value

F = Face value or par value

N = Maturity period

I = Coupon interest rate

P_m = Market price of bond

K_d = Market interest rate or opportunity rate

f = Function

Bond value is variable in nature, its value changes with the change in any of the above variable. Value of bond would increase with increase in coupon interest rate of the bond and vice versa. Similarly increase in loan tenure would cause decrease in the value of bond and decrease would cause increase in the value of bond. So while purchasing bond either in primary or secondary market value along with above variable needs to be evaluated.

2.10.1 Ordinary bonds

In case of ordinary bonds issuer pays certain amount at the time of maturity and regular interest payment in between. Valuation of such bonds is compared by formula illustrated below.

i) Annual interest payment

$$V_b = \frac{I_1}{(1+k)^1} + \frac{I_2}{(1+k)^2} + \frac{I_3}{(1+k)^3} + \dots + \frac{M}{(1+k)^n}$$
$$= \sum_{t=1}^n \frac{I_t}{(1+k)^t} + \frac{M}{(1+k)^n}$$

Where,

V_b = Present value of bond

I_t = Interest payment during t period

k = market interest rate

t = time periods

n = Number of time periods

M = Maturity value of bond

ii) Semi-annual interest payment

$$V_b = \sum_{t=1}^{n \times 2} \frac{I_t}{(1+\frac{k}{2})^t} + \frac{M}{(1+\frac{k}{2})^{n \times 2}}$$

2.10.2 Callable Bonds

Callable bonds are ordinary bonds with right to redeem the bond before its maturity. Valuation of which is given by formula below.

i) Annual interest payment

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

Where,

P_c = Call price

m = Number of period

ii) Semi-annual interest payment

$$\sum_{t=1}^{m \times 2} \frac{I_t}{(1+\frac{k}{2})^t} + \frac{P_c}{(1+\frac{k}{2})^{m \times 2}}$$

2.10.3 Perpetual Bonds

Perpetual bonds don't have maturity period and the issuer doesn't need to pay par value or maturity value. Instead the investor is paid interest regularly for indefinite period. Value of such bond is given by formula below.

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

Where,

I = Interest payment each year

K = Interest rate of bond

2.10.4 Bond Return Measures

It is expectation of future return that drives investors invest their money in current time. Investment is done only if the expected return covers the compensation of the current sacrifice of investment amount along with expected rate of inflation and risk of loss of current investment in future. From bond, investor gets income from price appreciation or loss from price depreciation and capital gain or loss. Return from bond is calculated through expected rate of return which is calculated by using price of bond. Current yield, yield to maturity, holding period return, expected rate of return etc which are defined below are considered as main measures for calculating return form bond.

2.10.4.1 Current Yield:

Current yield is considered most popular measure used for calculating bond return. Calculation of current yield is entirely based on the relationship between coupon rate and current price of the bond. The current yield provides information about the cash income a bond will generate in a given year. This can be expressed mathematically as below.

$$I_c = \frac{C}{P_0}$$

Where,

I_c = Current or coupon yield

C = Annual coupon amount

P_0 = Current market price of bond

2.10.4.2 Yield to Maturity (YTM)

Yield to maturity is defined as the rate of interest that an investor earns on her/his investment if s/he holds the bond till its maturity. In other words it 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. YTM is synonymous to the effective interest rate or the internal rate of return that is commonly used in capital budgeting. But if there is any probability of default in bond or if it is callable then the calculated YTM may be different from its expected rate of return. The YTM for a bond that sells at par consists entirely of an interest yield but if the bond sell at a price other than its par value, the YTM will consist of the interest yield plus positive or negative capital gains yield. The bond's YTM changes whenever interest rates in the economy changes. One who purchases a bond and holds it until the maturity will receive the YTM that existed on the purchase date, but the bond's calculated YTM will change frequently between the purchase date and the maturity date. YTM is calculated on the ground that value of bond is known and it can be calculated either through trial & error method or through approximation formula method.

2.11 Trial & Error Method

Through trial & error method YTM is calculated through computation of value of Bond by substituting of rate that would be equal to the price of bond.

$$V_b = \sum_{t=1}^n \frac{INT}{(1+YTM)^t} + \frac{Minority\ value}{(1+YTM)^n}$$

Where,

V_b = Value of bond

t = Time periods

n = Number of time periods

2.11.1 Yield to Maturity for callable bonds

Bonds can be issued with feature to call prior to the maturity by issuer. Such bonds are called callable bonds and if these bonds are called by issuer then bond holder doesn't have option to hold it until maturity. Bonds are likely to be called if current interest rates are below an outstanding bond's coupon rate. In that case yield to call best represents the rate of return. Yield to call can be calculated by solving given equation.

$$\text{Price of bond} = \sum_{t=1}^n \frac{INT}{(1+YTC)^t} + \frac{\text{Call Price}}{(1+YTC)^n}$$

2.11.2 Holding Period Return

Investors involved in trading of securities are mostly concerned about Holding Period Return (HPR). HPR can be defined as total return an investor would earn during specified period. HPR can be calculated either for past or future period. HPR for past period is called historical or ex – post measure and HPR for future period is called expected or ex ante return. The concept of HPR has evolved due to the change in strategy of investors. Here the change in strategy of investors refers to the shift from traditional concept of long term buy and hold strategy to short term strategies. HPR for bonds with coupons can be calculated as

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

Where,

HPR_t = Holding period return for the period t

P_t = Beginning or purchase price of the bond

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

2.11.3 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 bond has default probabilities or is not going to be held till maturity or when yields in general may change over the holding period (*Cheney & Moses; 10th edition*). Expected return is the weighted average rate of return calculated using probability of each rate of return as weight. It can be expressed as:

$$\begin{aligned} \text{Expected HPR} &= P_1 HPR_1 + P_2 HPR_2 + \dots + P_n HPR_n \\ &= \sum_{i=1}^n P_i \times HPR_i \end{aligned}$$

Where,

P_i = Probability of event i

HPR_i = Holding period return at event i

n = nth event

2.11.4 Cost of Debt Capital

Here cost of debt capital refers to all direct or indirect cost included in generating debt capital. Corporate bond or debenture being debt securities might have been issued at par or at discount or at premium. Further costs must have been incurred at the time of issuance of the bonds and debentures. Those costs are expenditure for issuing bonds and debentures such as preparation of prospectus, advertising cost and brokerage costs etc. Cost of debt capital also include interest paid to debt holders. Among three components of generating capital debt, preferred stock and common stock, debt is considered less costly. This is due to fixed legal claim to investors which would entitle bond holders greater security. Further on the basis of risk & return bond investors demand less return than stock holders and tax applicable on interest makes debt cheaper than other sources.

Cost of debt can be calculated mathematically as follows;

$$K_d = \frac{I}{NP}$$

Where,

K_d = Cost of debt before tax

I = Interest

NP = Net processed amount received after deducting all costs.

Since tax is applicable in interest paid to debt holder, debt is less expensive to issuer. So tax reduced cost of debt is calculated as:

$$k_{dt} = k_d (1-t)$$

Here, k_{dt} represents cost of debt after tax, k_d refers cost of debt before tax and t refers to tax rate applicable.

2.11.5 Bond Spreads

Difference in the interest rate of two different bonds is termed as "bond spreads" or "spreads". Mathematically, a bond spread can be obtained by simple subtraction of one bond yield from another. Bond spreads are the common way that market participants compare the value of one bond to another; much like "price-earnings ratios" are used for equities. Spreads reflect the relative risks of the bonds being compared. The higher the spread, the higher the risk usually is. People referring to bond spreads are generally talking about comparing the yields on federal government bonds, generally considered a country's most creditworthy bonds, to the bonds of other issuers such as provinces,

municipalities or corporations. Bond spreads can also be calculated between bonds of different maturity, interest rate coupon or even different countries and currencies.

Calculating Yield Spreads

Bond yield spread is differential interest between two bonds and can be calculated by subtracting one bond yield from another. For example, let's compare the Himalayan Bank Limited 7.5% debenture due in 2009 and the National Saving Bond 9.5% bond due in 2009. To properly understand the concepts of bond spreads, firstly the mechanics of spreads calculation can be examined. The current yield for instance on the HBL bond, is 5.3% compared to the NSB bond yield of 4.5%. Below we subtract the HBL bond yield from the NSB yield to obtain the spread: $5.3\% \text{ (HBL yield)} - 4.5\% \text{ (NSB yield)} = 0.8\%$ "Spread" Here bond yield spread is 0.8%.

Types of Spreads

Spreads seem simple but reflect a lot of underlying valuation factors. Below we list some of the spreads that can be calculated and the commonly understood meaning:

➤ **Credit Spreads]**

Credit Spreads are the differences in interest rates that reflect the credit risk between two bonds. The larger or "wider" the spread, the higher the credit risk of the high interest rate bond compared to the low interest rate bond. Corporate bonds generally have higher yields than similar maturity federal government bonds, as in our Sears Canada example above, reflecting their higher default or credit risk. The lower the credit quality and rating, the higher the yield spread compared to governments. That is why "less than investment grade" or "junk bonds" are commonly called the "high yield" sector of the bond market.

➤ **Term or Duration Spreads**

Duration Spreads are the spreads that reflect the different interest rates between bonds of different maturity. For example, the current interest rate on the very short-term, two year Nepal Investment Bank bond in our examples 4.5% reflecting its minimal capital risk because of interest rate movements. The current interest rate on a seven year National Saving Bond 8% of 2013 is 6.1%, reflecting its greater "interest rate risk". The yield spread or "curve spread" between these two bonds is 1.6% which reflects the interest rate between the two bonds and the conditions of monetary policy.

➤ **Coupon Spreads**

Coupon Spreads are spreads that reflect the differences between bonds with different interest rate coupons. For example, the Government of Nepal has issued two bonds which are due in 2008, one with a 10% coupon and one with 7% coupon. These two bonds have very similar maturities but very different coupons with a 3% different in payment each year until the final repayment of the principal of Rs.100 at maturity. In this case, a taxable investor would prefer to have less up front taxable income and would prefer to own a "lower coupon "bond. In recent years, the "stripping" activity of investment dealers, which produces "zero coupons" bonds, has caused coupon spreads to narrow considerably as high coupon bonds were sought because of their profitable "stripping" characteristics (higher profits for dealers).

➤ **Liquidity Spreads**

Liquidity Spreads reflect the difference in "liquidity" or ease of trading between bonds. For example, an investor can buy a zero coupon bonds for the same maturity date in three different forms: 1) a "coupon" which is a stripped coupon payment form bond; 2) a "residual" which is the stripped principal payment from bond; and 3) an actual zero-coupon bond issue which was originally issued as a zero coupon "global" bond issue. In terms of liquidity, the "global zero" trades at the lowest spread to other bonds, given its high liquidity. The coupon trades at the highest yield and spread, reflecting its smaller size (each "coupon" is $\frac{1}{2}$ of a bond's stated interest rate e.g. Rs. 4 on an 8% interest rate) where the residual is Rs.100. There are many other types of spreads such as "swap spreads" which reflect them for fixed to floating interest rate swaps or "Yankee spreads" which are spreads between U.S. dollar bonds of domestic and foreign issuers. Investment strategists use the spreads between the dividend yield and earnings yields on stocks and bond yields in their judgments on the relative attractiveness of these markets.

2.11.6 How Bonds Trade

Bonds generally can trade anywhere in the world that a buyer and seller can strike a deal. There is no central place or exchange for bond trading, as there is for publicly traded stocks. The bond market is known as an "over-the counter "market, rather than an

exchange market. There are some exceptions to this. For example, some corporate bonds in the Nepal are listed on an exchange. Also, bond futures, and some types of bond options, are traded on exchanges. But the overwhelming majority of bonds do not trade on exchanges. The trading of here discussed are marketable bonds which are permissible for trading.

Bond Dealers

While investors can trade marketable bonds among themselves whenever they want, trading is usually done with bond dealers, more specifically, the bond trading desks of major investment dealers. The dealers occupy centre stage in the vast network of telephone and computer links that connect the interested players. Bond dealers usually "make a market" for bonds. What this means is that the dealer has traders whose responsibility is to know all about a group of bonds and to be prepared to quote a price to buy or sell them. The role of the dealers is to provide "liquidity" for bond investors, thereby allowing investors to buy and sell bonds more easily and with a limited concession on the price. Dealers also buy and sell amongst themselves, either directly or anonymously via bond brokers. The name of the trading game is to take a spread between the price the bonds are bought at and the price they are sold at. This is the main way that bond dealers make (or lose) money.

Bond Investors

The major bond investors are financial institutions, pension funds, mutual funds and governments, from around the world. These bond investors, along with the dealers, comprise the "institutional market", where large blocks of bonds are traded. There is no size limit, and trades involving sum as high as Rs. 500 million or Rs. 1 billion at a time can take place. There similarly is no size restriction in the "retail market," which essentially involves individual investors buying and selling bonds with the bond trading desks of investment dealers.

2.11.6 Why Interest Rates Change

When interest rates change, it is the result of many complex factors. People who study interest rates find that it is as difficult to forecast future interest rates. Since interest rates reflect human activity, a long-term forecast is virtually impossible. After the fact,

explanations are many and confident! Some of the major factors which help to dictate interest rates are explained below.

Supply and Demand for Funds

Interest rates are the price for borrowing money. Interest rates move up and down, reflecting many factors. The most important among these is the supply of funds, available for loans from lenders, and the demand, from borrowers. For example, mortgage market can be taken. In a period when many people are borrowing money to buy houses, banks and trust companies need to have funds available to lend, which can be obtained from its own depositors. The banks pay 6% interest to depositors and charge 8% interest to its borrower. If the demand for borrowing is higher than the funds available, the interest rates can be raised or borrow money from other people by issuing bonds to institutions in the "wholesale market". The trouble here would be the source of funds being more expensive. Therefore interest rates would go up. If the banks and trust companies have lots of money to lend and the housing market is slow, any borrower financing a house will get "special rate discounts" and the lenders will be very competitive, keeping rates low. This happens in the fixed income markets as a whole. In a booming economy, many firms need to borrow funds to expand their plants, finance inventories, and even acquire other firms. Consumers might be buying cars and houses. These keep the "demand for capital" at a high level, and interest rates higher than otherwise it might be.

Monetary Policy

Another major factor in interest rate changes is the monetary policy of governments. If a government loosens monetary policy, this means that it has printed more money. If the Central Bank has created more money by printing it, interest rates will lower, because more money is available to lenders and borrowers alike. If the supply of money is lowered, it will tighten monetary policy and causes interest rates to rise. Governments alter the money supply to try and manage the economy. The trouble is, it is unpredictable regarding the amount of money necessary and the way to utilize it once it is available.

Inflation

Another very important factor is inflation. Investors want to preserve the "purchasing power" of their money. If inflation is high and risks going higher, investors

will need a higher interest rate to consider lending their money for more than the shortest term. After the very high inflation years of the 1970s and early 1980s, lenders had to receive a very high interest rate compared to inflation to lend their money. As inflation dropped, investors then demanded lower rates as their expectations become lower. We can imagine the plight of the long-term bond investor in the high inflation period. After lending money at 5-6%, inflation moved from the 2-3% range to above 12%. The investor receives 7% less than inflation, effectively reducing the investor's wealth in real terms by 7% each year.

2.11.7 Bond Management Strategies

Bond management strategies are based on interest rate anticipation, sector rotation and security selection.

Interest Rate Anticipation

Strategies which involve forecasting interest rates and altering a bond portfolio to take advantage of that forecast are called interest rate anticipation strategies. Interest rates are the most important factor in the pricing of bonds. The price of a bond is based on its interest rate or yield at any particular time and the most important influence on a bond's yield is the market interest rate structure. The market interest rate for any particular term of bond is generally agreed to be represented by the yields on government bonds, as these are viewed as highly liquid and of very low default risk.

- a. Basic interest rate anticipation strategy involves moving between long-term government bonds and very short-term treasury bills, based on a forecast of interest rates over a certain time horizon.
- b. Yield curve strategies are more sophisticated interest rate anticipation strategies take into account the differences in interest rates for different terms of bonds, called the term structure of interest rates. A chart of the interest rates for bonds of different terms is called the yield curve. A yield curve strategy would position a bond portfolio to profit the most from an expected change in the yield curve, based on an economic or market forecast.

Sector Rotation in Bonds

A sector rotation strategy for bonds involves varying the weights of different types of bonds held within a portfolio. An investment manager will form an opinion on the

valuation of a specific sector of the bond market, based on the credit fundamental factors for that sector and relative valuations compared to historical norms and technical factors, such as supply and demand, within that sector. A manager will usually compare his/her portfolio to the weightings of the benchmark index that s/he is being compared to on a performance basis.

Security Selection for Bonds

Security selection for bonds involves fundamental and credit analysis and quantitative valuation techniques at the individual security level. Fundamental analysis of a bond considers the nature of the security and the potential cash flows attached to it. Credit analysis evaluates the likelihood that the payments will be received as contemplated, or at all. Modern quantitative techniques use statistical analysis and advanced mathematical techniques to attach values to the cash flows and assess the probabilities inherent in their nature.

2.12 Review of Securities Laws and Acts

In order to systematize the primary issue and secondary trading of securities various legislation regarding primary and secondary securities market, has been issued. Organizations issuing new securities and listed in secondary market for secondary trading of securities need to adhere to the regulations directed by legislation of securities. In Nepal Security Board of Nepal plays the role of securities legislator. In order to make securities issue and trading systematic it has issued various act and ordinances. Some of important acts and ordinances are listed below:

- Security exchange Act, 1983
- Securities exchange regulation, 1983
- Membership of stock exchange and Transaction By laws, 1998
- Securities listing By – laws, 1996
- Issue management guidelines, 1997
- Security allotment guidelines, 1994
- Securities registration and issue approval guideline, 2000
- Company act, 1997

Apart from above acts there are some other acts like insurance act; banking and financial ordinance etc needs to be followed while issuing the securities by related

organizations. Some important provisions made regarding securities issues and trading are pointed below:

2.12.1 Company Act, 2063

Company Act, 2063 has pointed out following regulations regarding securities issuance and trading:

- The prospectus issued at the time of security issuing should incorporate company's objectives and important points that are mentioned in memorandum and article of association
- Minimum number of shares needed to become board of director.
- Introduction of directors and promoters are written their remuneration and rewards.
- Detail information regarding amount, par value, number and type of securities are being issued and its application process.
- Reasons for issuing securities is issued in premium.
- Allotment of securities needs to be done within three months from the invitation by company to apply for the share but if company is not able to collect 50% of shares within three months then the time period could be extended.
- Provision regarding representation of general shareholder should be participating in board of directors.
- Provision of bonus shares should be made public by the company.
- Primary and secondary transaction of securities needs to be done through the organizations recognized to do security transactions including all such acts as the sale, allotment and recovery of the sum of such securities
- A share certificate in the prescribed format shall be issued to every shareholder in respect of each share purchased by him, within 3 months of the allotment of the shares. In case if the share ownership is held jointly the certificate should be addressed to any one of the joint owner.
- A Company may, if it deems necessary, raise loans or issue debentures, specifying the reason therefore, the plan of action to be executed from the proceeds, and the estimated budget necessary for that purpose, with or without pledging or mortgaging the immovable assets of the company.
- As per the act any person in whose name the shares or debentures are registered in the records of the company shall be regarded as the owner, so one should register

his/her name in company's book after holding ownership through secondary transaction.

- Under company act no company can sell its shares or debentures on discount.
- A Company may issue preference shares subject to the privileges and restrictions as prescribed in the company Act and Memorandum or the Articles of Association of the company.
- A debenture may be converted into a share in accordance with the provisions made in the Memorandum or Articles or as per the decision made by the Board of Directors prior to the issuance of debenture. In the event of conversion of debenture into a share, information on that matter shall be given clearly through the prospectus.

2.12.2 Security Exchange Regulation Act, 1994

The security exchange regulation act, 1994 has been issued under the securities exchange act, 1983. Under this act following provisions have been made:

- Details of memorandum, articles of association and prospects of the company.
- Acts and rules under which company is formulated
- Detail of current fixed assets
- Amount, par value, number, type and other special provisions of issuing security
- Reason of debenture issues rationality, board of director's decision and application of fund.
- Other condition and facilities of security issue.
- Reason of change in price of two times issued securities
- Types, number, amount and transaction of last three years, if securities are issued previously
- Issue manager of security and underwriting of securities
- Provision of representation in board of directors for equity shares
- Provision about distribution of profit
- Three year audited and three year projected income statement and balance sheet
- Name, cast, address, qualification of person who prepares memorandum and articles of association
- Number of institutional investors and their representation in board of directors
- Other details advised by SEBO

2.12.3 Securities Registration and Issue Approval Guidelines, 2000

As per the Securities Registration and Issue Approval Guidelines, 2000 following information are required while applying for securities.

- Objective of the public issue and should mention about the application of raised fund.
- Description of company
- Projected Company three year net worth, profit and loss a/c, balance sheet, name, address, qualification and experience of persons who prepares statements.
- Name, address, qualification and experience of persons details should be prepares prospectus.
- Description of capital before and after securities issue
- Information to help rationalize people's investment decision
- Impact of finance shortage risk, materials shortage risk, production and market risks in operations and management of company
- Delaying in project completion and cost overrun risk
- Foreign currency rage fluctuation risk
- Points of deed if company is operated through foreign investment and management
- Convertibles debentures ratio of conversion with shares and time
- Information if conversion of debentures and preferred stock in equity changes in board of directors in company
- Provision of restriction in applying more than one application by one person
- Photo copy of minor birth certificate in case of applying in the name of minors
- Explanation about objectives of debentures issue, face value of debentures should be in application. Maturity period of debentures interest rate, time and method of interest payment in prospectus.
- Explanation about debentures holders right on organization assets as first right or second right. If second right exists the name of first right person should be mentioned.
- Debt and capital ratio during debentures maturity period should not exceed 70:30. if it exceeds proper justification needs to be provided.
- Comment of debentures redemption reserve fund if redemption debentures are issued
- Par value of security to be mentioned

- Information on human resource should be provided
- Statement of creditors should be provided
- Name, address and qualification of company secretary should be provided
- Name, address and qualification of auditor should be mentioned
- Agreement with issue manager of the company
- Agreement of underwriting if any
- Bases of certifying projected financial statements
- Agreement of loan with banks and financial companies
- Details of assets and liabilities revaluation at the time of conversion of private limited company into public limited company
- Commitment and remarks of experts and professional on projected income statements prepared by companies or organizations
- Reasons of deviation should greater than 20 percent of last 5 years actual profit.

2.13 Review of Previous Studies

There is very short history of corporate debt in Nepal due to which very few studies regarding corporate debt market has been found. In Nepal the development of debt market was very sluggish. The studies conducted on debt market were more focused on government debt market of Nepal. Studies regarding corporate debt market are very nominal in Nepal in comparison to other countries. In this part some of the related thesis submitted as a partial fulfillment of Masters Degree of Business studies and articles have been reviewed. Mainali, (2002) in his study "*Problem and Prospects of debt market growth in Nepal*" has the following objectives and major findings:

Objectives:

To find out the bottle necks in the debt market of Nepal that is stopping it to grow like common stock market. He used both primary and secondary data for the study.

Findings:

Nepalese investors are not much interested on investing in debt market because while investing in the securities they prefer liquidity, marketability and other features that are present in equity market. He has suggested that debt market being vital for the economic development in the country and has focused government role to be more important in development it. As a part of government role he has focused in passing favorable laws, removing inappropriate provisions regarding debt market and introducing

new provisions that help flourishing debt market of Nepal. He also adds that new laws relating to investor's interest protection should be formulated in order to develop the debt market of Nepal. Prahari, 2003) in his study *Debt Market Growth in Nepal*, has the following objectives and major findings:

Objectives:

To analyze the structure of securities market in Nepal and to examine its key characteristics. He also studied duration and valuation of Nepalese corporate debt securities.

Findings:

He found that common stock and government securities come first in the mind of investor and corporate debt gets third priority while investing securities. He too has emphasized the government role in making corporate debt market more attractive for investment.

Pandey, (2006) in his study on —*Issues and Prospects of Developing Corporate Debenture\ Bond Market in Nepal*”, has the following objectives and major findings:

Objectives:

To evaluate and identify existing prospects and issues of corporate debenture market and examine its growth potentiality.

Findings:

He has found the main reason for the slow growth of the corporate debt market is due to the high preference of investors towards common stock.

He has found some prospects of corporate debt market growth as commercial bank's interest in issuing debenture in order to meet capital requirement issued by NRB. He has concluded that the development of corporate market is must for the development of overall securities market of

Nepal. He has recommended the government role in developing corporate debt market through various activities like tax rebates, introduction of rules and regulations in order to protect the interest of investors, maintain political stability and establishment of securities and credit rating agencies.

Maharjan, (2008) in his study on —*Corporate Debenture Market In Nepal* has the following objectives and major findings:

Objectives:

To find current situation and problem of Nepalese Debenture market

Findings:

He has found that due to less awareness, debenture market is not developing as it needs to be. Investors prefer ordinary share instead of debenture due to easy marketability.

Overbear 2009.

CHAPTER III

RESEARCH METHODOLOGY

3.1 Introduction

In the earlier chapters, background of Nepalese debenture market has been highlighted and review of literature with possible reviews of relevant books articles, thesis and research finding has also been discussed. This had equipped researcher with the inputs necessary for the study and helped to make choice of research methodology to support the study in realistic terms with sound empirical analysis. Research methodology refers to the various sequential steps to be adopted by a researcher in studying a problem with certain objectives in view. (*Kothari; 1990:10*) In other words, research methodology describes methods and processes applied in the entire part of the study. One of the major objectives of this study is to analyze, examine, highlight and interpret the financial as well as statistical tools to analyze the data in order to reach a conclusion. Therefore, appropriate research methodology is required. This chapter deals with the research design, nature and sources of data, data collection procedure and tools and technique of analysis. The study follows the research methodology as described below.

3.2 Research Design

A research design is the arrangement of conditions for collection and analysis of data that aims to combine relevance to the research purpose with economy in procedure. Research design is the plan, structure and strategy of investigation conceived so as to obtain answers to research questions and to control variances. Research design includes definite procedures and technique which guide to sufficient way for analyzing and evaluating the study. To achieve the objective of this study, descriptive and analytical research design has been used. Some financial and statistical tool has also been applied to examine facts and descriptive techniques have been adopted to evaluate the debenture market of Nepal. Both the primary and secondary data have been used in order to achieve the above objective.

3.3 Sources of Data

The study deals with both the primary as well as secondary data. As for primary data the researcher has used questionnaire and direct interview method wherever appropriate. A set of questionnaire has been developed for various respondents that would provide research data. Further direct interview have been made with respondents by the researcher. Here the respondents are staffs from listed companies, brokers, issue managers, individual investors and other experts. For secondary data quarterly Economic Bulletins Published by NRB, various Economic reports, Economic surveys, debenture prospectus, Annual Report of Securities Board, various publications of NEPSE, economic journals, periodicals, bulletins, magazines and other published and unpublished reports and documents from various sources. All the secondary data are compiled, processed and tabulated in the time series as per the need and objectives. Formal and informal talks with the concerned authorities of the SEBO and NEPSE were also helpful to obtain the additional information of the related problem.

3.4 Population and Sample

As stated earlier debenture market in Nepal hasn't flourished as common stock market. There is very short history with very few organization issuing debentures. Due to this complete population has been taken for study. In case of primary data the number of listed companies, broker, issue manager, individual and other experts being huge in number, sample has been taken. While in case of secondary data the organizations issuing debentures being relatively few in number population has been taken which included 14 debenture issuing companies.

3.5 Research Variables

The researcher has underlined some specific research variable viz. rules and regulation of corporate debentures market, investors' attitude, information dissemination, primary and secondary markets.

3.6 Graph

Graph helps to show the general trend of the relation in respect to the time periods of the analysis. Graph is a very common way of presenting data for two variables having relationship with each other. Graph is used to show the change of a dependent variable in

relation to the independent variable. Graph consists of x – axis where independent variables are tabulated and y – axis where dependent variables are tabulated.

3.7 Method of Analysis

Data analysis consists of organizing, tabulation and performing statistical analysis. Data analysis is done in order to change the unprocessed data into understandable and presentable form. For secondary data the results have been derived by using the data for the period of 1990 to 2009. In case of primary data various statistical and financial tools have been used for classification, tabulation and analysis of the data.

3.8 Statistical Tools Used

Both the primary and secondary data were organized and tabulated with the help of MS excel software. For the analysis of primary data, one of the commonly used from three forms of central tendency, median has been used throughout the thesis. Median is the middle value of an arranged set of numbers. The primary data has been obtained with the help of questionnaire. In the questionnaire, various questions were asked that require scaling. The overall ranking is derived based on the median value of the responses obtained from the respondents.

CHAPTER IV

DATA PRESENTATION AND ANALYSIS

The study is focused on the current status of corporate debenture market of Nepal to identify the problems faced by it and find out the remedies for the growth of it which is the main aim of this thesis. In history of Nepal Corporate Debenture, debenture has been issued only 16 times. Hence, maximum data has been taken for the study and analysis. In case of primary data questionnaire 11 sets of questions were prepared and distributed to different organizations including banks, nepse, trading companies and individual investors as well. A total of 15 responses have been received. Apart from questionnaire, opinions from various experts have also taken in order to find out the true picture of current corporate debenture market of Nepal, analysis has been done with both primary and secondary data.

4.1 Presentation and Analysis of Secondary Data

4.1.1. Features of Nepalese Corporate Debentures

Corporate debentures have various features like Interest rate, Maturity period, Callable provision, Coupon rate etc. These various features of the debentures are tabulated below.

Table 1
Position of Nepalese Corporate Debentures

Debenture Name	Issue Year	Type of Issuing Company	Issue amount (NPR in Millions)	Coupon Rate(in %)	Interest Payable	Maturity Period	Callable/ Non-Callable	Convertible/ Non-Convertible	Issue Manager	Nature of Placement
HBL Bond 2066	2001/02	Bank	360	8.50	Semi-Annual	7 years	Non-Callable	Non-Convertible	NMB Bank Ltd.	PP(260) & IM(100)
NIBL Bond 2067	2003/04	Bank	300	7.50	Semi-Annual	7 years	Non-Callable	Non-Convertible	Ace Finance Ltd.	PP(200) & IM(100)
EBL 2068	2004/05	Bank	300	6	Semi-Annual	7 years	Non-Callable	Non-Convertible	Nagarik Lagani Kosh	PP & IM
BOK Bond 2069	2005/06	Bank	200	6	Semi-Annual	7 years	Non-Callable	Non-Convertible	NMB Bank Ltd.	PP(150) & IM (50)
NIBL Bond 2070	2005/06	Bank	250	6	Semi-Annual	7 years	Non-Callable	Non-Convertible	Ace Finance Ltd.	PP(170) & IM(80)
NIC Bond 2070	2005/06	Bank	200	6	Semi-Annual	7 years	Non-Callable	Non-Convertible	Ace Finance Ltd.	PP(150) & IM (50)
NSBI Bond 2070	2005/06	Bank	200	6	Semi-Annual	7 years	Non-Callable	Non-Convertible	Citizen Investment Trust	PP(150) & IM(50)
NIBL Bond 2071	2006/07	Bank	250	6.50	Semi-Annual	7 years	Non-Callable	Non-Convertible	Ace Finance Ltd.	PP(200) & IM(50)
NEA Bond 2069	2007/08	Public Utility Service	1500	7.75	Semi-Annual	5 years	Non-Callable	Non-Convertible	NMB Bank Ltd.	PP(1350) & IM(150)
HBL Bond 2072	2007/08	Bank	500	8	Semi-Annual	7 years	Non-Callable	Non-Convertible	Ace Development Bank Ltd.	PP(400) & IM(100)
KBL Bond 2070	2007/08	Bank	400	8	Semi-Annual	5 years	Non-Callable	Non-Convertible	NMB Bank Ltd.	PP(320) & IM(80)
NIB Bond 2072	2007/08	Bank	250	8	Semi-Annual	7 years	Non-Callable	Non-Convertible	Ace Development Bank Ltd.	PP(200) & IM(50)
NABIL Bond 2075	2007/08	Bank	300	8.50	Semi-Annual	10 years	Non-Callable	Non-Convertible	NIDC Capital Markets	PP(240) & IM(60)
LB Debenture 2072	2008/09	Bank	350	8.5	Semi-Annual	7 years	Non-Callable	Non-Convertible	NMB Bank Ltd.	PP(300) & IM(50)
SBL 2072	2008/09	Bank	400	8.5	Semi-Annual	7 years	Non-Callable	Non-Convertible	Ace Development Bank Ltd.	PP(320) & IM(80)

Source: Nepal Rastra Bank Annual Report

More or less debentures issued Nepalese Market possess similar features like interest payment semi-annually, call provisions, non-convertibility, and nature of placement. Most of the debentures were issued by banks. Maturity periods were around 7

years till the issue of 2006/07. Pattern had changed in the issuance of period 2066. In 2066, tenure was 7 years for both debentures. Mostly used issue manager is Ace Development Bank Ltd. NMB Bank comes after this in ranking as issue manager. All debentures were non-capable, non-convertible, and placements were done through both public placement and issue manager.

4.1.2 Corporate Debt Securities and common stock in Nepalese Market

Table 2

Position of Debt Securities and common stock

(In Millions)

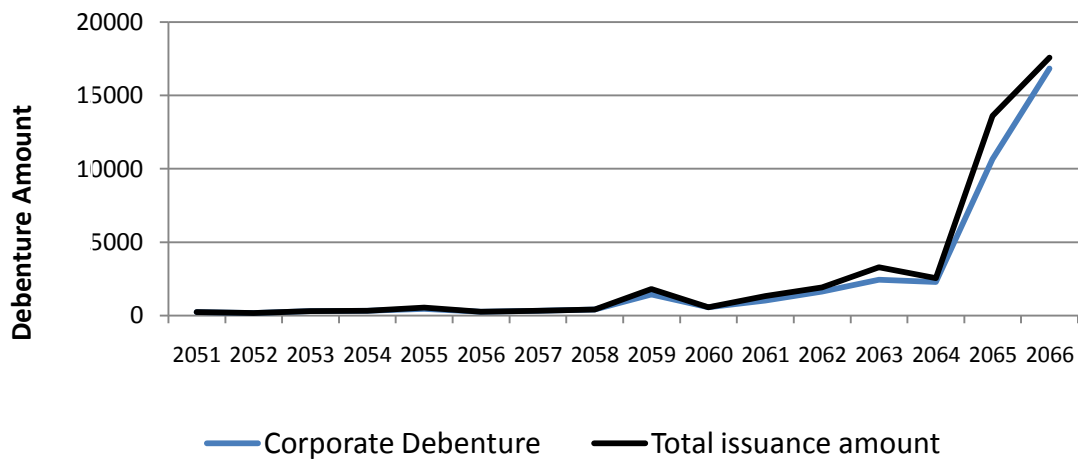
Year	Total no. of Issues common stocks	No. of Debent ure Issues	Total Insurance Amount(N PR)	Cumulative Amount of Total Issues	Corporate Debenture issue amount(NPR)	Cumulative of Corporate Debenture Issue amount	% of Debenture Issue on Total Issue
2051	16	-	244	244	-	-	0.00%
2052	10	-	174	418	-	-	0.00%
2053	12	-	294	712	-	-	0.00%
2054	5	-	332	1,044	-	-	0.00%
2055	12	1	462	1,506	93	93	20.13%
2056	5	-	258	1,764	-	93	0.00%
2057	6	-	327	2,091	-	93	0.00%
2058	9	-	410	2,501	-	93	0.00%
2059	12	1	1,441	3,942	360	453	24.98%
2060	18	-	557	4,499	-	453	0.00%
2061	14	1	1,028	5,527	300	753	29.18%
2062	14	1	1,627	7,154	300	1,053	18.44%
2063	29	4	2,443	9,597	850	1,903	34.79%
2064	33	1	2,296	11,893	250	2,153	10.89%
2065	64	5	10,668	22,561	2,950	5,103	29.61%
2066	64	2	16,829	39,389	750	5,853	4.46%
Total	323	16	39,389		5,853		

Source: Nepal Rastra Bank Annual Report

In this observed period out of total number of security issues of 323, debenture issue was only 16, is only 4.95%. In amount, in total issue of securities of NPR 39,389 millions, NPR 5,853 million was of debenture issue which is 14.86%. In the observed period, debenture issue was done in year 2055 only which is 20.13% of total security issue. There was no debenture issue in till 2058. In 2059, debenture was issued which was 24.98% of total issue. And again there was no debenture issue in 2060. After this period, debenture was issued regularly. In percentage basis, 34.79% being the highest percentage of debenture issue in total security. In amount basis, highest amount being NPR 2,950 million of debentures was issued in 2066. This recent year progress showed the debenture issue was getting momentum.

The comparison between total securities issued and debenture issued during the observed period is shown in the figure below.

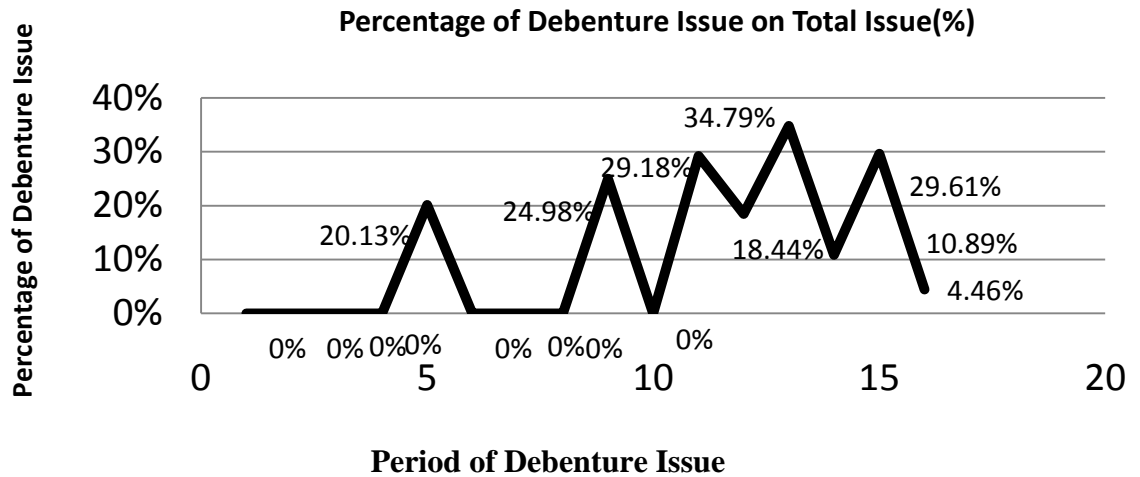
Figure 1
Debenture out of Total Security Issue



Debenture issue period

In the above figure, we can see the trend of debenture issue with all securities issue. Till year 2066, trends of debenture issue and other security securities issue were similar but in year 2066, debenture issue had decreased drastically as compared to year 2066.

Figure 2



In this figure, we can figure out the position of debenture in total issue. Debenture issue had not gone above 35% mark in total issue. Debenture issue in total security issue is in fluctuating trend, decreasing in last observed year 2066 to below 5%.

4.1.3 Position of Corporate Debt in Total Debt Market in Nepal

Total debt comprises of government debt securities and corporate debt. In order to fulfill its fund requirement, both government and private corporate sector borrows fund from public through debt through debt securities. Debt securities issued by government are government debt which includes treasury bills, national saving bonds etc. and debt securities issued by private sector are corporate debt which includes bonds or debentures.

Nepalese government issues treasury bills in order to fulfill its short term fund requirement while National Saving Bonds and Citizen Investment Certificate in order to fulfill its long term fund requirement. These securities being issued by government are very popular in Nepalese debt market. These debt securities have interest rate higher than the prevailing market interest rate and with maturity period of up to 15 years from the date of issuance. These instruments are issued with the intention to cap the unutilized funds of general public and utilize the same in development of the country. Corporate debt on the other hand has very small history and is not much popular to public too. Corporate debt includes debentures issued by private sector in order to fulfill its fund requirement. In Nepal, very few corporate debentures have been issued. The corporate debenture issued have maturity period ranging from 3 to 10 years and with coupon interest higher than prevailing market interest rate. The position of both corporate and government debt in Nepalese debt market is shown in table below.

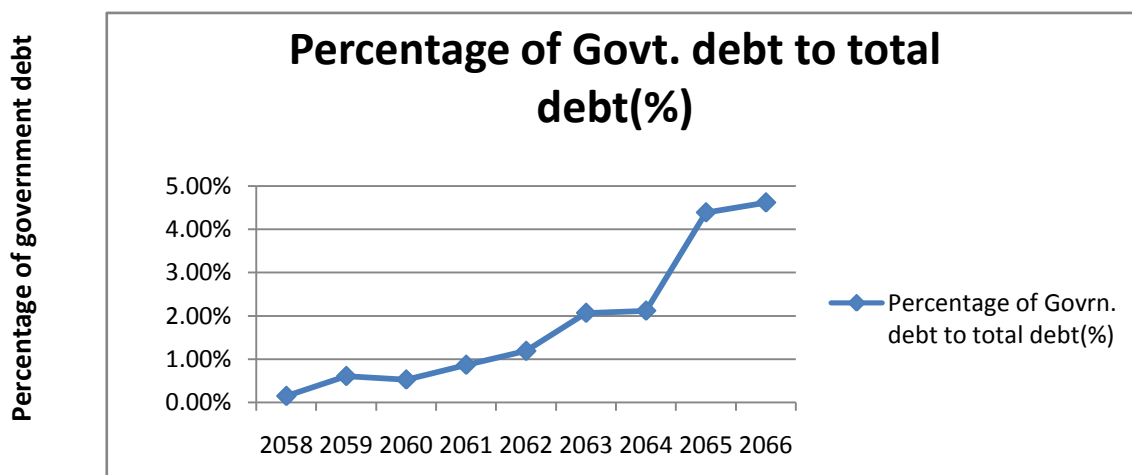
Table 3**Position of Corporate and government debt in total Debt Market****(NPR in millions)**

Year	Government Debt.	Corporate Debt.	Total debt.	Percentage of Govt. debt. to Total debt.	Percentage of Corporate debt to the total debt.
2058	60,044.00	93.00	60,137.00	99.85	0.15
2059	73,627.00	453.00	74,080.00	99.39	0.61
2060	84,645	453.00	85098.00	99.47	0.53
2061	86,134.00	753.00	86,887.00	99.13	0.87
2062	87,564.00	1,053.00	88,617.00	98.81	1.19
2063	89,955.00	1,903.00	91,858.00	97.93	2.07
2064	99,304.00	2153.00	101,457.00	97.88	2.12
2065	111,239.00	5,103.00	116,342.00	95.61	4.39
2066	120,873.00	5853.00	126,726.00	95.00	4.62

Source: Nepal Rastra Bank Annual Report

The table clearly shows that the corporate debt behind the government debt. The total debt market of Nepal is heavily dominated by government debt. One of the reasons is non issue of corporate debt in Nepalese debt market. Another reason being government debts are regarded as less risky than corporate debt. The maximum contribution of corporate debt market is 4.39% in fiscal year 2065 against 95.61% contribution of government debt in same year.

Figure 3



Period Contribution of Government Debt in Total Debt

This figure shows that there is very less contribution of corporate debt in total debt which is below 5%. But good things are increasing trend.

4.1.4 Position of Corporate Debenture in Nepalese Capital Market

In Nepalese capital market, ordinary share is highly preferable security. Till the observed period, total security issue is NPR 21.8 billion in which ordinary share is about NPR 5.08 billion whereas debenture had surged to NPR 1.5 billion and there is increase in debenture issue from Bank as well in year 2007/08. Preference share amounted to NPR 0.63 billion whereas right share amounted to NPR 11.04 billion.

Table 4
Position of corporate Debenture, Ordinary share and Preference share with
Percentage

(NPR in millions)

Year	Debenture	Percentage %	Cumulative of Debenture issue	Ordinary Share & Right Share	Percentage %	Cumulative of (ordinary share.	Preference Shares	Percentage %	Cumulative of preference share issue
2051	-	0	-	228.00	7.08	228.00	17.00	2.67	17.00
2052	-	0	-	174.00	5.41	402.00	-	0	17.00
2053	-	0	-	294.00	9.13	696.00	-	0	17.00
2054	-	0	-	332.00	1.03	1,028.00	-	0	17.00
2055	93.00	1.58	93.00	369.00	1.15	1,397.00	-	0	17.00
2056	-	0	93.00	178.00	5.53	1,575.00	80.00	12.56	97.00
2057	-	0	93.00	327.00	1.06	1,902.00	-	0	97.00
2058	-	0	93.00	411.00	1.28	2,313.00	-	0	97.00
2059	360.00	6.15	453.00	941.00	2.92	3,254.00	140.00	21.98	237.00
2060	-	0	453.00	556.00	1.73	3810.00	-	0	237.00
2061	300.00	5.12	753.00	728.00	2.26	4,538.00	-	0	237.00
2062	300.00	5.12	1,053.00	1,326.00	4.12	5,864.00	-	0	237.00
2063	850.00	14.52	1,903.00	1,593.00	4.95	7,457.00	-	0	237.00
2064	250.00	4.27	2,153.00	1,645.00	5.11	9,102.00	400.00	62.79	637.00
2065	2,950.00	50.40	5,103.00	7,012.00	21.78	16,114.00	-	0	637.00
2066	750.00	12.81	5,853.00	16,078.00	49.95	32,192.00	-	0	637.00
Total	5,853.00			32,192.00			637.00		

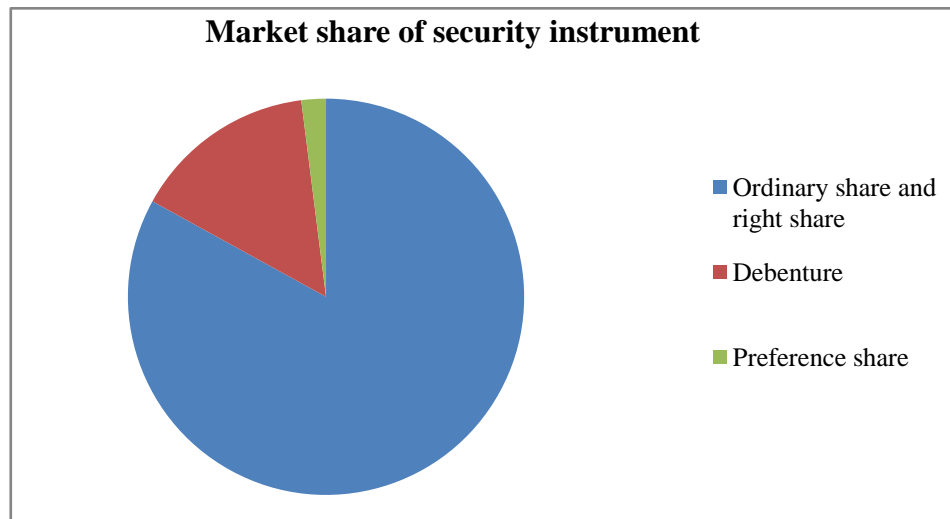
Source: Nepal Rastra Bank Annual Report

While looking at trend of security issue, ordinary share and right share were being issued regularly whereas initially debenture issue was sluggish but from 2061, it was being issued regularly and issued amount had also increased in this time period. Preference share was not being issued regularly. From it could be said that preference share was less preferred whereas ordinary share and right share were highly preferred and in recent years, debenture issue had also increased a look at instrument wise concentration of securities in current capital market.

It is clearly seen that Nepalese security market is highly dominated by ordinary share and right share whereas preference share is issued in very nominal amount which is not also issued in regular basis. In case of debenture, it is very less in comparison to ordinary share and right share but is issued more than preference share.

Following figure depicts instrument wise concentration of security market

Figure 4



In the above figure, it is clearly seen that security market of Nepal is highly dominated by ordinary share and right share which holds 83% share. Debenture holds 15% whereas preference share holds only 2%.

4.1.5. Interest Rate presentation

Interest rate plays crucial role in investment in bonds/debenture. Interest rate attracts investment in debt security. Following table shows interest rate of various government securities, saving, lending and debentures.

Table 5
Structure of Interest Rate

Structure of Interest Rates (Percent per annum)							
Year	2060	2061	2062	2063	2064	2065	2066
A. Government Securities							
T-bills*(28 days)	-	1.82	-	2.40	2.13	5.16	4.94
T-bills*(91 days)	2.98	1.47	3.94	3.25	2.77	5.16	6.80
T-bills*(182 days)	-	-	4.42	3.86	3.51	5.16	5.91
T-bills*(364 days)	4.93	3.81	4.79	4.04	4.00	6.47	6.55
Development Bonds	3.0-8.0	3.0-8.0	3.0	6.75	3.0-6.75	5.0-8.0	5.0-9.5
National Citizen SCs	7.0-13.0	6.5-13.0	6.5-13.0	6.0-8.5	6.0-8.0	6.0-7.75	6.0-8.0
B. Interbank Rate	4.5	0.71	4.71	2.13	3.03	3.61	3.66
C. Commercial banks							
1. Deposit Rates							
Saving Deposits	2.5-6.0	2.0-5.0	1.75-3.5	1.5-3.5	1.5-3.5	1.5-3.75	2.0-7.5
Time Deposits							
1 month	-	2.0-3.5	1.75-3.5	1.5-3.5	1.5-3.5	1.5-3.75	2.0-7.5
3 months	2.0-5.0	2.0-4.0	1.5-4.0	1.5-4.0	1.5-4.0	1.5-6.75	1.75-7.0
6 months	2.5-6.0	2.0-4.5	2.5-4.5	1.75-4.5	1.75-4.5	1.75-6.75	1.75-7.0
1 Year	3.0-7.0	2.75-5.75	2.25-5.0	2.25-5.0	2.25-5.0	2.5-6.0	2.5-9.0
2 Years and above	3.25-7.5	3.0-6.0	2.5-6.05	2.5-6.4	2.5-5.5	2.75-6.75	2.75-9.5
2. Lending Rates							
Industry	8.5-14.0	8.5-1.5	8.25-13.5	8.0-13.5	8.0-13.5	7.0-13.0	8.0-13.5
Agriculture	10.5-14.5	10.5-13.0	10.0-13.0	9.5-13	9.5-13.0	9.5-12	9.5-12.0
Export Bills	4.0-12.5	4.0-12.5	4.0-11.5	4.0-12.0	5.0-11.5	5.0-11.5	6.50-11.0
Commercial loans	7.5-16.0	9-14.5	8.0-14	8.0-14	8.0-14	8.0-13.5	8.0-14.0
Overdrafts	10.0-17.0	10.0-16.0	5-14.5	6.5-14.5	6.0-14.5	6.5-13.5	6.5-13.5
D. Debenture Interest Rate	-	7.50	6.00	6.00	6.50	7.75-8.5	8.50

Source: Nepal Rastra Bank Annual Report

Government issues various types of securities for the expenditure to promulgate its policies. One of them is treasury bills. Looking at the rates of treasury bills during this review period till 2066, it is in increasing rate, highest being 6.80% in 364 days Treasury Bills. Interest rate of Development Bonds had remained around 3% to 9% whereas it had

decreased in 2063 & 2064 to 6.75%. Among government securities, National Saving Bonds had higher interest rate highest being 13%. Since this security had higher interest rate and has low risk, it is attractive among investors.

Coming to Bank Deposit rates, it is in decreasing trend and with decreasing rate of lending as well. But in year 2066, deposit rates had increased with good margin which shows that there was liquidity shortfall in financial institutions for investment. Decrease in lending rate is mainly due to political unrest which has directly affected the industrial life. Lending rate whereas remains almost same in year 2065 and 2066.

In this scenario, when we look at the deposit rates and interest rate of debentures of 2066, deposit rates are higher than interest rate of debenture in 1 year & 2 year or above deposit. Investors can get more return from deposits in bank for less period of investment in comparison to debentures. So, there could be problem in debenture subscription for which issuers need to study on interest rate and tenure as well.

Table 6
Interest Rate of Debenture Currently Floating in Nepal Market

Issue Fiscal Year	Debenture Name	Coupon Rate	Tenture
2056	HBL Bond 2066	8.50%	7 years
2057	NIBL Bond 2067	7.50%	7 years
2058	EBL 2068	6%	7 years
2059	BOK Bond 6069	6%	7 years
2060	NIBL Bond 2070	6%	7 years
2061	NIC Bond 2070	6%	7 years
2062	NSBI Bond 2070	6%	7 years
2063	NIBL Bond 2071	6.50%	7 years
2064	NEA Bond 2069	7.75%	5 years
2065	HBL Bond 2072	8%	7 years
2065	KBL Bond 2070	8%	5 years
2065	NIB Bond 2072	8%	7 years
2065	NABIL Bond 2075	8.50%	10 years
2066	Laxmi Bank Debenture 2072	8.50%	7 years
2066	SBL Bond 2072	8.50%	7 years

Source: Nepal Rastra Bank Annual Report

The interest rate structure of debenture currently available in the market, as shown by the table above, ranges from 6% to 8.5%. The interest in debenture issued by Himalayan Bank Ltd, NABIL Bank Limited, Laxmi Bank Limited & Siddhartha Bank Limited has high interest rate of 8.5% and the lowest being 6% issued by Everest Bank Ltd, Bank of Kathmandu Ltd, NIC Bank Ltd and Nepal SBI Bank Ltd.

Above table 4.5 shows that the interest rate of debenture is in increasing trend but deposit rate in 2066 had also surged to 9% for 1 year and 9.5% for 2 years and above which signals that depositors would be lured to invest in bank deposits against debentures which will be backed by tenure as well. Most of the bonds had tenure of 7 days. Investors will not be risking to invest in debenture since its principal payment time would be longer than the deposits of 1 year & 2 year which are giving good interest.

Coming to lending rates which are higher than the debentures interest rate, industries could be attracted to issue debenture with interest rate par with deposit rate which would surely benefit on decreasing interest cost.

4.1.6 Debenture Trading in Security Market

There is only one secondary market for securities trading in Nepal. Since it started stock exchange activities from 2051, NEPSE has been providing platform for the secondary trading of all securities. There are currently 142 companies listed in the NEPSE for secondary trading of the securities. On an average, ordinary shares of 20 - 30 listed companies are traded daily in NEPSE. But despite the fact that all debentures existing in Nepalese capital market being listed in NEPSE, very few secondary trading of debenture has been witnessed. Following table shows the secondary trading of debenture market in Nepal.

Table 7
Secondary Trading of Corporate Debenture

Debenture	HBL			NIBL 2067		
	Year	Qty.	Rate	Amount	Qty.	Rate
2062	920	1,000	920,000	700	1,000	700,000
2063	1,895	1,000	1,895,000	1,290	1,000	1,290,000
2064	2,530	1,000	2,530,000	2,140	1,000	2,140,000
2065	100	1,000	100,000	-	-	-

The table above clearly resembles that debenture trading in secondary Nepalese market is not much popular. Since debenture first listed in NEPSE in fiscal year 1997/98 secondary trading of debenture was witnessed only in the year 2004. First trading of debenture was 50 units of Himalayan Bank Debenture in 2061 at NPR 1,000.00 each. Apart from Himalayan Bank Bond, only corporate bond traded in Nepalese market was NIBL Bond. In 2061, 920 units of HBL bonds and 700 units of NIBL bonds were traded. In the year 2062, 1895 units of HBL bonds and 1290 units of NIBL bonds were traded. Similarly in the year 2063, 2530 units of HBL bonds and 2140 units of NIBL bonds were traded. In year 2064, only 100 units of HBL bonds were traded for NPR 1 million. In year 2065, debenture was not traded in secondary market.

One of the reason of debenture being unpopular in secondary market is less issuance of debenture in primary market Another reason could be there is no confirmation on capital gain from the debenture investment. Other reason could be, banks providing loans against debt securities as a result of which debenture holder can fulfill their short term need of funds through borrowing against debenture. Thus they do not necessarily have to sell the securities due to short term fund requirement. The less volume of debenture present in the securities market is also viewed as another reason for less trading of debentures in secondary market.

4.1.7 Corporate Debenture Issue in Commercial Banks

Reviewing the past trend of debenture issuance commercial banks have been actively participating in corporate debenture market growth in Nepal. At present all the debenture floating in current Nepalese market is issued by commercial banks. With this information the prospect of debenture issuance by commercial bank in the future is studied in this chapter. In order to prevent the bank from liquidation, Basel Committee was formed. The Basel Committee on the Banking supervision is a committee of banking supervisory authorities that was established by the central bank governors of Group of Ten countries in 2042 (Capital Adequacy Framework 2064 issued by NRB). The Basel Committee has developed the Capital Accord called Basel I to align the capital adequacy requirement to banks which was revised and re-introduced as Basel II in 2063. NRB had implemented the Basel II accord in Nepalese commercial banks from FY 2066. As per this accord Nepalese commercial banks are required to maintain total capital to total risk weighted assets ratio to 10%. Failure to maintain the same would expose the commercial banks to face regulatory actions.

The table below gives the present scenario of capital fund to risk weighted assets of commercial banks in Nepal.

Table 8
Capital Fund to Risk weighted asset ratio of Nepalese commercial Banks

Year								
	2059	2060	2061	2062	2063	2064	2065	2066
Capital Fund/Risk weighted Assets	- 5.49	- 9.88	- 12.04	- 9.07	- 6.33	- -5.3	0.17	1.47

4.2 Presentation Analysis of Data

For the purpose of study of current situation of corporate debenture market in Nepal, a questionnaire survey was conducted. The questionnaire with 15 set of questions relating to corporate debenture market situation was distributed to 20 samples from Invertors, Listed companies, issue managers/brokers and experts. Out of 25, 20 respondents gave their opinion to each question. The questionnaires contained information on most preferable securities for investment, most preferable type of debenture for investment, investment in Nepalese corporate debentures, most preferable issuing corporate sector, major factors for slow growth of debenture market in Nepal. reasons for Nepalese corporate sectors not being interested in collecting funds through debt securities. The opinion given by the respondents to each question are tabulated and analyzed using statistical tools. Mutual Funds, corporate debt securities and fixed deposit in financial institutions are least preferred investment alternative. The finding is justified by current Nepalese capital market where it is dominated by both primary and secondary trading of common stock.

The highest preferred debenture is issuing corporate debt in Nepal. The respondents found debenture issued by Banks as highly secured and most preferred to invest in the respondents gave their opinion towards the favor of Banks. The next preferred sectors were Finance Companies and Manufacturing Industries of respondents giving their opinion in favor of each sector. Apart from the given option of the respondents stated their interest towards debenture issued by Hydro Power companies.

4.3 Major factor for Debenture Market not being popular

The respondents viewed lack of awareness towards debt securities as the primary reason for the non – popularity of debenture market among investors. Limited supply of quality debt securities and lack of debt market were the other important reasons. Lack of capital gain opportunity, uncertainty of interest rates, inflation and capital market as a whole and easy availability of funds from financial institutions were viewed as having least contribution in debenture market being non popular among investors. The question intended to know the respondent's view regarding the primary reason for Nepalese enterprises preferring common stock for fulfilling their fund requirement rather than debt securities. The table above shows that Nepalese enterprises' thinking of common stock being only marketable securities was viewed most prominent reason for their preference towards issuing common stock. The other factors included Nepalese enterprises having already high debt ratio, unable to take tax advantage due to them being in loss and fear of bankruptcy due to default in interest and principal payment.

This means they believe debt securities market being new and is risky to rely on. They also think there is not much scope for debt securities due to small size of market. Lack of knowledge of debt securities among investors and lack of professional investment bankers were evident in Nepalese debt securities market. Inadequate infrastructure, irregular and inadequate supply of corporate debt securities along with low disclosures requirement for raising funds through financial institutions are acting against the development of debt securities market in Nepal. Lack of incentives by government to buyers and sellers of debt securities and dominance of credit oriented transactions are other reasons for least development of debt securities market in Nepal.

4.4 Primary Data Analysis

This chapter reflects the methodology. To meet the objective of the study to evaluate the management view relating the debentures, a set of questionnaire is used, which consists of fifteen relating to debentures aspect of the banks. The questionnaire includes the management view relating to the present expectation, types of dividend and their present debentures policy. The Questions has been asked twenty respondents. The respondents answered following questions as per below.

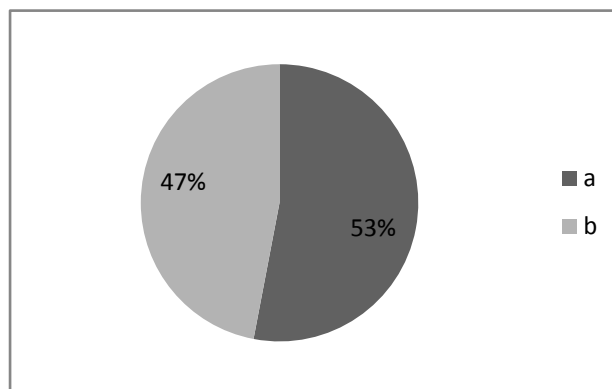
To seek the answer whether the company issued the debenture a question was asked, have your company issued the debenture?

The Answer provided by the respondent has been presented in the following table.

Table: 9

<i>Item</i>	Response	Percentage
a) yes	8	53%
b) No	7	47%
Total	15	100%

Figure 5



From the above table, it is cleared that 53% of respondents replied that they have issued debentures but 47% of respondents replied their companies doesn't issue the debenture.

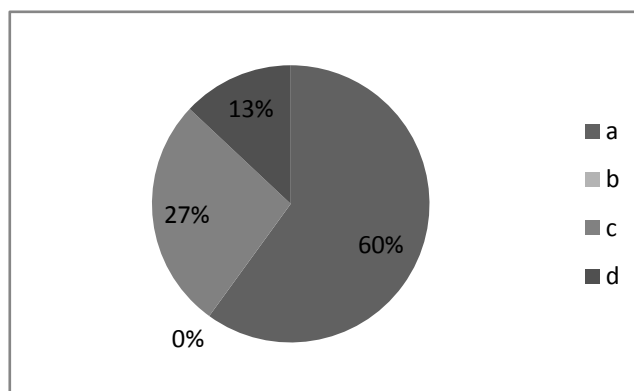
To seek the answer whether the company issued the debenture a question was asked, what is the main purpose for issuing the Debenture?

The answers given by the respondents have been tabulated as follows:

Table: 10

<i>Item</i>	Response	Percentage
a. To raise fund	9	60%
b. Trading on equity	0	0%
c. Expansion based in activities	4	27%
d. Any other, Please specify	2	13%
Total	15	100%

Figure 6



From the above table, it is observed that 60% of the respondents' companies are issued debenture for the rising the fund, 27% of companies wants to expanded basis in activities and 13% of companies wants to any others.

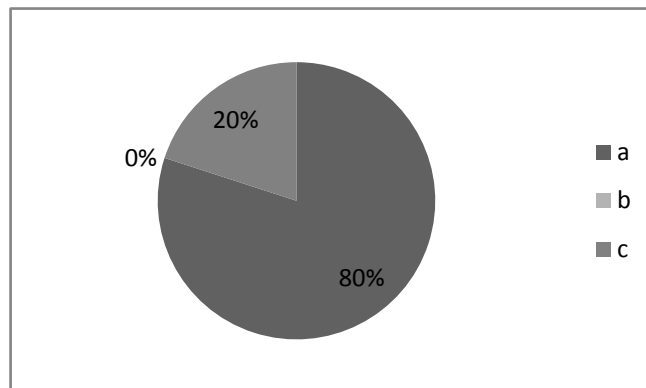
To seek the answer how they maintain their capital structure a question was asked, how you have raised your capital?

The answers provided by the respondents have been presented in the following table.

Table: 11

<i>Item</i>	Response	Percentage
a) By issuing common stock	12	80%
b) By issuing Treasury bill	0	0%
c) By obtaining loan	3	20%
Total	15	100%

Figure 7



From the above table it is cleared that 80% of respondent are agree to issue common stock for the raise fund and capital and 3% respondents are responded growing capital by loan.

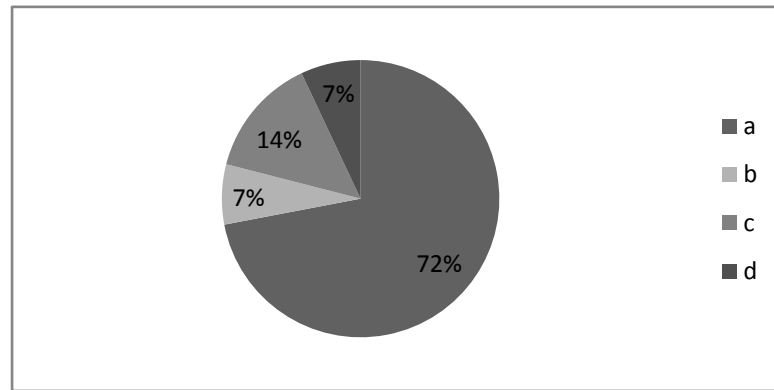
To seek the answer what problems the company has face while issuing debenture a question was asked, what problems you have faced while issuing debentures?

The Answer was provided by the respondent has been presented in the following table.

Table: 12

Item	Response	Percentage
a) Ambiguous legal provision	11	72%
b) Absence of law	1	7%
c) Coupon rate	2	14%
d) Any other please specify	1	7%
Total	15	100%

Figure 8



From the above table, it is cleared that, 72% respondents are supported in Ambiguous Legal Provision, 7% respondents are replied problem in coupon rate, 14% respondents replied problem in absence of law and 7% respondents replied other specific reasons. There are problems of coupon rate and laws.

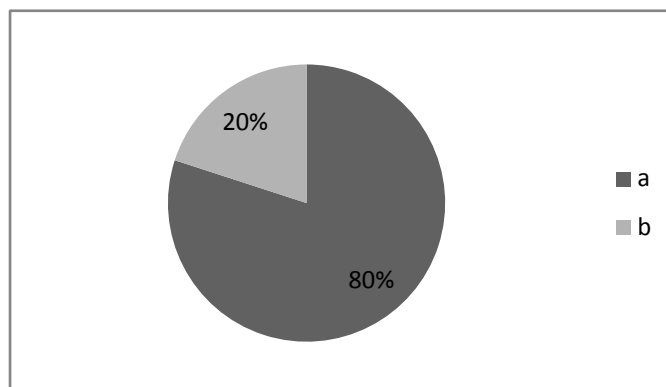
To seek the answer what type of legal provisions are facing by the company a question was asked, are there any legal provisions to issue debenture in Nepal?

The answers provided by the respondents are tabulated as under.

Table: 13

Item	Response	Percentage
a) Yes	12	80%
b) No	3	20%
Total	15	100%

Figure 9



From the above table, it is observed that 80% of respondents agreed on legal provisions but 20% of them don't know about it.

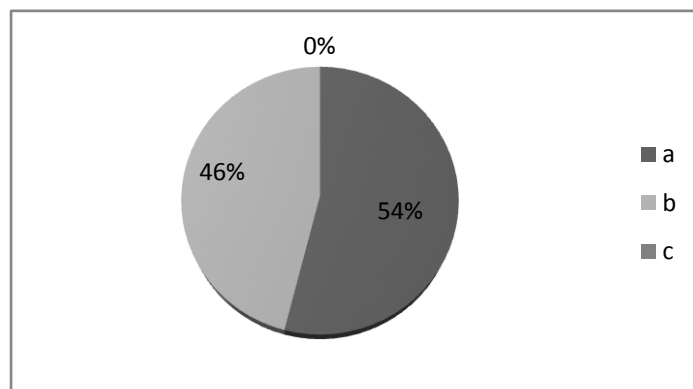
To seek the answer whether the respondents asked about legal provision, a question was asked, who regulate the legal provision about debenture in Nepal?

The answers provided by respondents have been presented in the following table:

Table: 14

Item	Response	Percentage
a) Nepal Rastra Bank	8	54%
b) Ministry of finance	7	46%
c) Any other please specify	0	0%
Total	15	100%

Figure 10



It is observed that, the responses of respondents are above tabulation which shows 54% of respondents agreed in NRB regulate the laws of debenture, 46% in Ministry of finance.

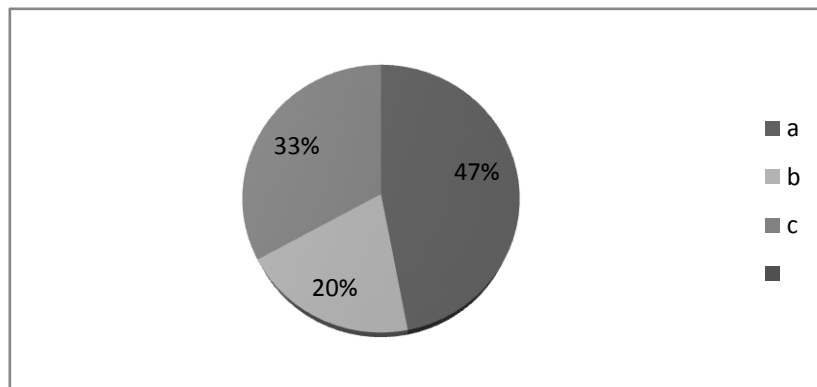
To seek the answer whether the respondents asked about debenture market, a question was asked, how debenture market could be promoted in Nepal?

The answers provided by the respondents have been presented in the following table:

Table: 15

Item	Response	Percentage
a) By offering effective interest rate	7	47%
b) By making aware to the potential investors	3	20%
c) By making the company as possible for timely redeem the debentures	5	33%
d) Any other please specify	0	0%
Total	15	100%

Figure 11



It is cleared that 47% of the respondents agreed in effective interest rate, 20% in making aware to the potential investors and 33% in timely redeem the debentures.

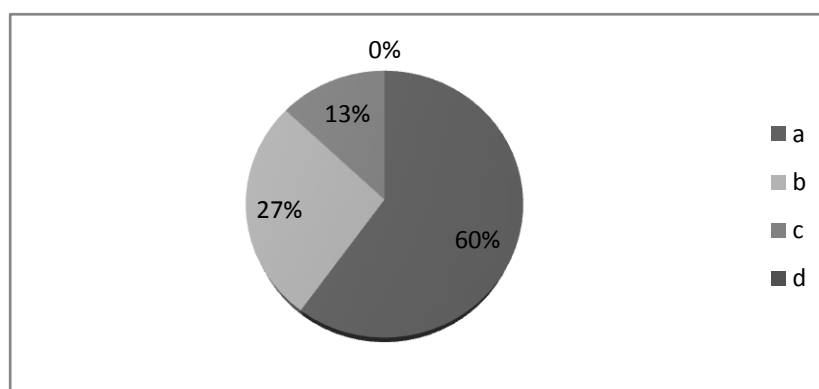
To seek the answer whether the reason for not being popular of debenture market in Nepal, a question was asked, what could be the reason not being popular of debenture market in Nepal?

The answers provided by the respondents have been presented in the following table.

Table: 16

Item	Response	Percentage
a) Lack of awareness	9	60%
b) Investors factor in issuing share	4	27%
c) Nominal saving	2	13%
d) Any other please specify	0	0%
Total	15	100%

Figure 12



From the above table, it is cleared that 60% of respondents gave their reasons lack of awareness, 27% gave their reasons for issuing debenture and 13% of respondents replied that by normal saving.

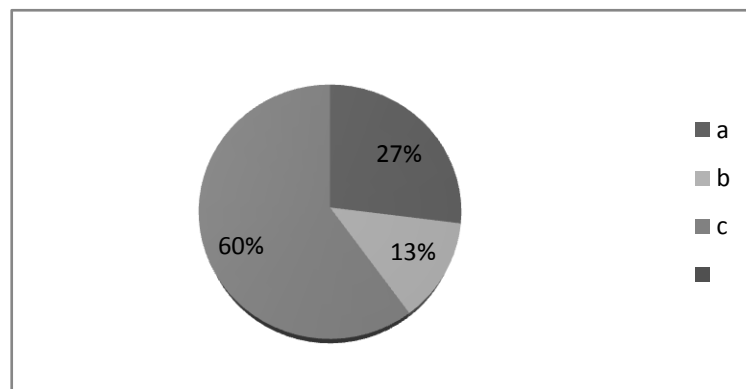
To seek the answer whether the potential investor could be attracted to invest in Debenture, a question was asked, how the potential investor could be attracted to invest in debenture market in Nepal?

The answers provided by the respondents have been presented in the following table.

Table: 17

Item	Response	Percentage
a) Security in investment	4	27%
b) Adopting a flexible market interest rate	2	13%
c) Attractive coupon rate	9	60%
d) Any other please specify	0	0%
Total	15	100%

Figure 13



From the above that it is cleared that the responses of 60% of respondents are attractive coupon rate, 27% are Security in investment and 13% are flexible market interest rate.

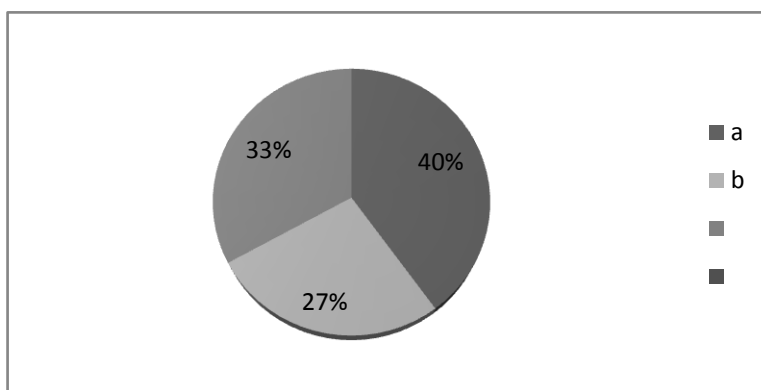
To seek the answers how debenture market could be grown, a question was asked, how the Debenture market could be grown in Nepal?

The answers provided by the respondents have been presented in the following table.

Table: 18

Item	Response	Percentage
a) Payment of interest in time	6	40%
b) Providing quick decision by the court	4	27%
c) Restrict to issue debenture in case if there is default	5	33%
d) Any other please specify	0	0%
Total	15	100%

Figure 14



From the above table, 40% of respondent are replied debenture market grow by Payment of interest in time, 33% are restrict to issue debenture in case if there is default. 27% of respondent are replied debenture market grow by payment of interest in time

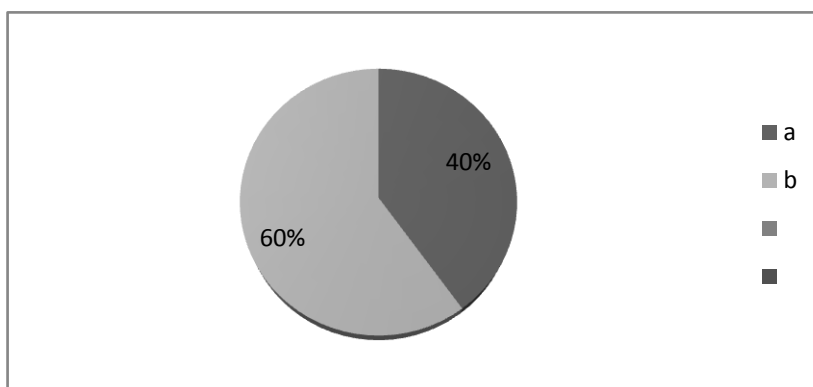
To seek the answer whether what kind of the policy should be adapted to promoted debenture market in Nepal a question was asked, what policy should be adapted to promoted debenture market in Nepal?

The answers provided by the respondents have been presented in the following table.

Table: 19

<i>Item</i>	Response	Percentage
a) Strict rules and regulations	6	40%
a) Stability of government	9	60%
b) Quick decision from the court	0	0%
c) Any othre please specify	0	0%
Total	15	100%

Figure 15



From the above table, it is cleared that the responses of 60% of respondent are agreed in stability of government and the 40% of respondents response to strict rules and regulations.

4.5 Major findings

The major findings from the data analysis have been concluded as follows;

- Nepalese investors prefer commons stocks to invest in rather than debt securities. This is due to lack of awareness among investors regarding debt securities, inadequate and irregular supply of debt securities and lack of proper and systematic debt securities market.
- Due to the poor performance of hotel and manufacturing industries, investors prefer investing in debt securities issued by banks and financial institutions. This has been one of the major concerns regarding growth of debt securities market in Nepal.
- The existing legal provision regarding debenture market is not sufficient and the existing acts like investor interest protection act, trust act, securities exchange acts, provision for listing debenture in secondary market needs to be revised and made strong.

Government should prepare policy to attract investors to invest in debentures. In course of doing so, government may provide some kind of incentive or In course of doing so, government may provide some kind of incentive.

- Political instability is another major reason for slow growth of debenture market in Nepal. Political stability would bring prosperous environment in Nepalese industrial sector which will ultimately help in developing Nepalese debenture market.
- Nepalese debt market is highly dominated by governments which contribute 95.38% of the total debt market in Nepal. While corporate debt contribute only 4.62% of the total debt market in Nepal. In year 2066 there is good margin of increase in bank deposit rates which has gone above debenture interest rate in deposits of 1 year and 2 year or above. So, investors will not be interested in

debenture. So, if a deposit rate goes on increasing whereas interest rate of debenture remains at this present level, there could be problem in subscription of debenture.

- Manufacturing industries may be attracted to issue debenture with interest rate that will attract investors to debentures against deposits in the present scenario of higher lending rates. Very few instances of secondary trading of corporate debentures were found in Nepal. Proper infrastructure is required to support and encourage secondary trading of Nepalese corporate debentures.
- Awareness level among general investors about debenture is found to be low which is showing impact in secondary market of debenture. The increasing trend of debenture issuance is expected to contribute in developing Nepalese corporate debenture market.
- The requirement of capital adequacy ratio by commercial banks as outlined by BASE L II accord is expected to stimulate the banks to issue debenture as they currently do not have adequate capital ratio.

CHAPTER V

SUMMARY, CONCLUSION AND RECOMMENDATIONS

The study has been focused in analyzing current difficulties of the corporate debenture market in Nepal and its future prospectus. Various facts and matters required for the study has discussed and explored in the preceding chapters. Analytical assessment of various aspects of the corporate debenture market has been done by using some important financial tools. Having completed the basic analysis required for the study, the final and most important task of these researchers is to enlist findings and give recommendation for further improvement. The objective of the researcher is not only to identify the problems but also to initiate for suggesting necessary measures and help in further growth and improvement of the corporate debenture market of Nepal.

5.1 Summary

Growth of capital market and growth of economic development are synonymous to each other. Economic development of any country is stimulated by growth of industries and the growth of the industries is possible with the growth of capital market. Capital market includes all institutions or organizations that are involved in financial intermediation between savers (those who have surplus money) and borrowers (those who have deficit of funds). These include banks and non-bank financial institutions, insurance companies, stock markets, brokerage and dealers firms, savings and loans and institutions and credit unions etc. Capital market deals with the trading of capital instruments like debt, preferred stock, common stock etc. which are sources of fund for any firm. A firm can maximize its value with the proper combination of these capital instruments. Hence, each and every capital instrument is of equal importance for each and every industry or firm. Hence, debt being a part of the capital structure of the firm plays vital role in the prosperity or decline of firm. Thus we can conclude that debt securities market is important part of the capital market and development of debt market is essential for the development of capital market. In case of Nepal debt market has very short history and is in developing stage. Nepalese capital market is highly dominated by common stock in comparison to debenture till fiscal year 2064. However in fiscal year 2065, due to single NEA Bond issuance of NPR 1500 million, debenture issue had come to par with common stock. Otherwise, debenture market is very less developed in comparison to Ordinary share which is reflected by non trading of debenture in secondary market in fiscal year

2065. The above data clearly shows the non popularity of the debt securities in the Nepalese capital market. With the enforcement of Public Debt Act 1960, the development of the debt securities market took its first step. The introduction of Securities Exchange Act 1993 further stimulated the development of debt market.

The emergence of corporate debt market in Nepal was witnessed for the first time in FY 2042 when Bottlers Nepal issued 18% debentures worth NPR 5 million. In the history of Nepalese debt market, only 16 instances of corporate debenture were seen till the study period. This shows that Nepalese organizations are still not confident with raising fund through debenture. Out of the 16 issues only three are from manufacturing industries and rest are from commercial banks. Poor performance of other industries has negative impact in debenture issuance by industrial sector. Investor's preference to invest in equity rather than debt securities, due to the expectation of capital gain in common stocks, is affecting debenture issuance. Not only this but poor legislative provision regarding debenture market, political instability, poor information disclosure are also affecting the development of corporate debenture market in Nepal. For the securities is necessary but the secondary trading of debentures is very rare in Nepal. This has adverse affect on the growth of the debenture market. Despite all these, the trend of the debenture issuance over the observation period is rising, which can be viewed as positive step towards the prosperity of debenture market. Further commercial banks issuing debentures are also helping the development of Nepalese corporate debenture market. Further decreasing deposit interest rates in banks and high lending rate has been encouraging investors to invest in debentures and corporate houses to issue the debentures, which has been able to build platform for the debenture market growth.

A field survey was also conducted in course of research on Nepalese debenture market. A total of 100 samples were selected using stratified random and judgmental sampling technique. Samples were drawn from four different categories. The total sample included 30 from listed companies, 15 from experts. A questionnaire with 8 questions were prepared and distributed. Out of the 100 samples, only 65 responded (23 from the listed companies, 4 from issue managers/brokers, 27 from individual investors and 11 from experts). Different statistical tools were used in order to analyze the response of each respondent to each question. From the survey, it was found that shares were the most preferable securities for investment. Lack of awareness, among investors and concept prevailing in Nepalese enterprises that common stock are marketable is negative point for development of corporate debenture market in Nepal. Lack of proper debt securities

market and proper infrastructure along with dominance of credit oriented transactions are also viewed problems of Nepalese debenture market.

From the research, various problems regarding corporate debenture market has been found. Along with the problems various prospects for the development of corporate debentures has also been identified. In Nepal, commercial banks are highest profit making organizations. Their growing interest towards fund collecting from debt securities in order to maintain their capital adequacy ratio can be viewed as the affirmative step towards development of corporate debenture. Further, Nepal has high potential in hydro power and for hydro power plant huge prospect of debenture issuance from these companies which has been initiated by NEA by issuing 1500 million on debenture. Given the fact that Nepalese investors prefer common stock to debentures, issuance of convertible debenture is expected to attract the investors.

5.2 Conclusion

With compared to government debt securities market, Nepalese corporate debt securities market is in infancy stage. During the observation period from FY 2044 to FY 2066 Nepalese corporate debt market has witnessed only sixteen instances of debenture issuance. Out of the eighteen, only three are by manufacturing companies while rest is by commercial banks. Debenture issuance by manufacturing companies for the last time was back in FY 2055 Shree Ram Sugar Mills. The Shree Ram Sugar Mills convertible debentures were heavily undersubscribed and since then no any manufacturing industries, in fact and institution except commercial banks have issued debentures throughout the observation period. The primary reason for the manufacturing industries not issuing debentures is their poor performance.

However, the recent increasing trend of the debenture issuance by commercial banks can be viewed as the positive factor for the development of debenture market in Nepal. The debentures issued by all commercial banks had similar features like semi-annual interest payment, non-callable and non convertible. Due to investor's high preference towards common stock and the common stocks being easily subscribed, Nepalese companies are comfortable using common stock to fulfill their fund requirement. Further, they find bank financing easier and quicker source for fulfilling long and short term debt, though debenture issuance is considered less costly than bank financing.

Thus lack of investor's awareness, companies preference to bank loans and common stock for collecting fund, lack of proper legislature regarding debt securities trading, lack of effective debt market, inadequate supply of debt securities, lack of proper government strategy for the development of corporate debt market can be viewed as the major factors that has been pulling down the growth of debenture market in Nepal.

Along with the negative factors, some positive factors for the development of the debenture market in Nepal have been identified during the research. Commercial banks, currently the most profit generating segment in Nepal, stepping forward in issuing debentures can be viewed as the positive step towards the development of corporate debenture market in Nepal. Lately, NEPSE has replaced its traditional system by modern computerized system, which also has positive impact towards development of corporate debenture market in Nepal. Increasing lending rates are expected to attract the corporate houses in generating fund from debentures. The future prospects for development of debenture market can be explored through the issuance of convertible debentures, asset backed debentures and debentures with less tenure which would be helpful in attraction investors towards debentures and would ultimately contribute in development of corporate debenture market.

To conclude, for the development of the corporate debenture in market in Nepal, the aforementioned problem should be minimized and the prospects are to be explored. Debt market development is must for the development of capital market which is essential for the development of country as a whole. Hence all the stake holders should contribute towards development of corporate debt market.

5.3 Recommendation

The study has outlined various positive and negative factors regarding Nepalese corporate debenture market growth. Capitalization of positive factors and elimination of negative factors is essential for steady growth of debenture market in Nepal. Hence with the motive of Nepalese corporate debenture market growth and based on the research study following recommendation has been pointed out.

- ◆ The study pointed out investor's awareness as one of the major factor for the development of debenture market. Investor's may be both institutional and individual. Various programs should be launched in order to educate both

individual and institutional investors regarding feature of debentures. Proper analysis needs to be done by the investors prior to investing in debenture.

- ◆ The existing infrastructures for the debenture market growth are insufficient. Government should develop strong rules and regulation for protection of investor's interest and overall development of debenture market. Government should provide incentives like tax rebate or lower tax for the buyers and sellers of the debentures so that they are attracted towards it. Country's political situation has huge impact in its capital market. In Nepal, one of the reasons for least development of debenture market is political instability. Hence political reform is must for the development of debenture market in Nepal. Strict rules and regulations regarding information disclosure should be formulated and implemented. The information disclosure rate should be increased by introducing reward and punishment policy.
- ◆ Credit Rating System should be introduced so that the investors could invest in the debentures according to the credit rating of the issuing company. Manufacturing industries and Hotel industries regarded as poor performers in current Nepalese context. Due to this investors are not willing to invest in debentures issued by these organizations. These organizations can still generate fund through debt securities by issuing asset backed debentures.
- ◆ Secondary trading of debentures is must for the development of debenture market. Hence, broker need to make the debentures trading easy and service provided needs to be quick. They should provide information regarding securities to interest persons. Trading market can also be activated by providing enough frameworks and encouraging issue of floating rate bonds.
- ◆ From interest rate analysis it was found that deposit interest rates have increased in fiscal year 2066 which will surely lure investors towards deposit if the debentures are issued with current level of interest. So, issuers need to take account of current deposit interest rate trend to fix the interest rate of debentures. And in this present volatile situation, investors will not be investigating in certain security option for longer time, so debenture issuers need to take account of tenure as well in present context scenario.

- ◆ The traditional system of securities board needs to be changed and should be made scientific and systematic so that the approval process can expedite. Debt securities can create liquid and large debt market substantially. Equity market in Nepal is in better position than debenture market which can maintain sufficient credit base for debt market growth. Hence proper policy needs to be formulated regarding private companies that would help in development of debenture market in Nepal.
- ◆ In order to develop debenture market in Nepal, a transparent and equitable market pricing system needs to be developed. Investors that are attracted towards common stock expecting capital gain, should be made aware that there exist capital gain in debentures too if the market interest rate goes down.
- ◆ Nepalese enterprises are focused in generating capital equity but they need to understand equity as well as debt is required for effective and low cost capital structure. The investors should gain broad knowledge about debenture according to a survey report. Nepalese enterprises should give more preference to debenture for generating funds instead of bank loans as debentures would be less costly due to very low interest rate. Furthermore, there is option of Hybrid debt instruments which attract investors.

The debenture market being one of the parts of the capital market and the capital market growth being necessary for economic growth of the country, all the related parties need to contribute in development of debt or debenture market.

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Schedule of structural Questionnaire

Dear Respondent,

I have been conducting a research on “Debenture Market in Nepal”. The questionnaire has been developed and presented before you as a part of this study. The issues raised in this questionnaire are the key problems identified by researcher related to topic during the course of the study.

I humbly request you to fill it up at the best of your kind co-operation in this regard will be off immense value for me.

I shall be highly obliged for your prompt response as far as possible.

Thank you!

.....

Suraja khatri

(Researcher)

Master of Business Studies

Khwopa College

Dekocho, Bhaktapur

Respondent Profile

Mr./Miss./Mrs. :

Name of Organization:

Address:

Contact No:

Signature:.....

Survey Reports

QN	Items	Responds	Percentage	Total	Remarks
1	a	8	53%		
	b	7	47%	100%	
2	a	9	60%		
	b	0	0%		
	c	4	27%		
	d	2	13%	100%	
3	a	12	80%		
	b	0	0%		
	c	3	20%	100%	
4	a	10	66%		
	b	1	6%		
	c	2	14%		
	d	2	14%	100%	
5	a	12	80%		
	b	3	20%	100%	
6	a	8	54%		
	b	7	46%		
	c	0	0%	100%	
7	a	7	47%		
	b	3	20%		
	c	5	33%		
	d	0	0%	100%	
8	a	9	60%		
	b	4	27%		
	c	2	13%		
	d	0	0%	100%	
9	a	4	27%		
	b	2	13%		
	c	9	60%		
	d	0	0%	100%	
10	a	6	40%		
	b	4	27%		
	c	5	33%		
	d	0	0%	100%	
11	a	6	40%		
	b	9	60%		
	c	0	0%		
	d	0	0%	100%	