

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The development of any country depends upon its economic development. Thus the primary goal of any country including Nepal is rapid economic development to promote the welfare of the people and the nation as well. Nepal being a least developed country is trying to embark upon the path of economic development by economic growth rate and developing all sectors of economics. Even though the process of economic development depends upon various factors, however economists are now convinced that capital formation and its proper utilization plays a paramount role for rapid economic development.

Banks play a vital role in economic development of developing countries like Nepal. It is a resource mobilizing institution, which accepts deposit from various sources, and invests such accumulated resources in the productive field like agriculture, trade, commerce, industry, tourism etc. The banking sector is largely responsible for collecting household saving in terms of different types of deposits and regulating it in the society by lending in different sectors of economy. Successful formulation and effective implementation of investment policy is the prime requisite for the successful performance of banks. Good investment policy creates positive impact on economic development of the country.

For this reason, banks devote a significant portion of their assets portfolios to another major category of earning assets likes investment in securities, these typically include government corporate bonds and notes, other firms of debt

securities and certain limited kinds of stock permitted by law.¹ Government securities are safe, marketable and liquid instruments to invest. Treasury bills, treasury bonds and notes, municipal notes and bond etc. are the government securities, which are practiced worldwide.

1.1.1 Overview of Present Economy

The performance of the Nepalese economy remained less than satisfactory in 2004/05. The actual economic growth remained below the targeted level. Unfavorable weather condition coupled with uneasy security situation affected the economy unfavorably. As a result, GDP growth rate decelerated from the previous year's level. Tourism sector too continued to suffer because of internal as well as external disturbances. The performance of the Nepalese economy in terms of real GDP growth remained below the 10th plan's low case target of 4.3 percent in 2004/2005. The growth rate of agricultural GDP dropped to 3 percent in 2004/05 from 3.9 percent in 2003/04. Likewise, the growth in non-agricultural GDP decelerated from 3.4 percent in 2003/04 to 2.1 percent in 2004/05.²

In 2004/05 average annual consumer inflation registered a rise of 4.5 percent, higher than the last year's level of 4 percent. The increase in price index exceeding the last year's level was mainly attributable to the repeated upward revision in the price of petroleum products, the hike in VAT rate and an unexpected rise in the price of rice.³

Regarding performance of the commercial banks, the assets/liabilities of commercial banks increased by 10.2 percent in 2004/05 compared to a growth of 5.9 percent in 2003/04. As percentage of GDP, such assets/liabilities of commercial banks increased from 62.4 percent in 2003/04 to 63.8 percent in 2004/05. The deposit collection of the commercial banks

¹ Peter S. Rose, (2002), "Commercial Banking Management," International Edition, McGraw-Hill, Irwin, USA p-307

² Economic Report, (2004/5), Nepal Rastra Bank, p-6

³ Ibid, p-14

remained weak in 2004/05 compared to that of 2003/04 due mainly to slow down in the economic growth and economic activities as well as lower rate of interest provided by the commercial banks. Total deposit registered a growth of 7.7 percent in 2004/05 compared to a higher growth of 14.7 percent in 2003/04. Loan and advance of the commercial banks increased by 14.3 percent in 2004/05 compared to a growth of 13.1 percent in 2003/04. Bank's intermediation function improved significantly in 2004/05 as indicated by a rising credit-deposit ratio from 79.3 percent in 2003/04 to 84.8 percent in 2004/05.⁴

1.1.2 History of banking development

History tells us that it was the merchant who first evolved the system of banking by trading in commodities than money. Reviewing the history we can find that present day banker has three ancestor of particular note. These are merchant, lender, and the goldsmith. Lending and borrowing are almost as old as money itself but modern banking showed its seed in medieval Italy.

The history of banking development, we can't forget the Bank of Casa de San Giorgio in Genoa, which was established in 1148; Bank of Venice was established in 1157 and the Bank of Genoa was established in 1148. In 1401, the Bank of Barcelona was established in Barcelona. In fact modern bank started to take rapid speed in forming & functioning from 17th century. During this period Bank of Milan, Bank of Florence and Bank of St. George were established in Genoa. In 1609, the Bank of Amsterdam was established in Holland, like wise in 1610, Bank of Hamburg was established in Germany and the Bank of England was established in England.⁵

The evolution of the organized financial system in Nepal has a more recent history than in other countries of the world. Banking history of Nepal is about

⁴ Ibid, pp-66-69

⁵ D. R. Bhandary, (2003), "Banking and Insurance Principal and Practice", Aayush Publication, Kathmandu, p-5

decade. The concept of banking system was introduced in Nepal with the establishment of Nepal bank Ltd. in 1937 A.D. It was established to help government's policy to develop economic and business activities in the country. After realizing the need of another bank, later in 1956, the central bank named as the Nepal Rastra Bank was set up with an objective of supervising, protecting and directing the functions of commercial banking activities and to carry out central banking activities. After realizing the need of another bank, Rastriya Banijya Bank was set up in 1966 AD to spread banking services to both rural and urban areas. As the country moved towards economic liberalization in 1980 A.D. foreign banks were invited to operate in Nepal. The financial scenario has changed with the introduction of joint venture Banks in 1984. The number of commercial Banks has been increasing. Since then, various financial institutions Like, JVBs, Domestic commercial banks, development banks, finance companies, co-operative banks, Credit Guarantee Corporation, Employee Provident Fund, National Insurance Corporation, Nepal Stock Exchange have come into existence to cater the financial needs of the country thereby assisting financial development of the country.

After restoration of democracy in the country in 1990, government highlighted the agenda of economic liberalization. Liberalization policies were announced and emphasized to invite FDI in banking sector of Nepal. Therefore the development of commercial banks in Nepal is categorized in three phases on the basis of financial institutions policies adopted by the country from time to time. They are

Commercial banks prior to 1980's

Commercial banks of 1980's

Commercial banks of 1990's

There are only two commercial banks prior to 1980's they are Nepal Bank Ltd. and Rastriya Banijya Bank. All the three commercial banks of 1980's were established as JVBs. Similarly six commercial banks of past 1990's were also came into operation as JVBs. Latest six banks were established by the private sector of Nepal. Consequently the names of some banks are also changed. Nepal Arab Bank Ltd. is now known as Nabil Bank Ltd. Similarly

Nepal Grindlays Bank Ltd., Nepal Indosuez Bank Ltd. and Nepal Bank of Ceylon Ltd. are now known as Standard Chartered Bank Nepal Ltd., Nepal Investment Bank Ltd., and Nepal Credit and commerce Bank Ltd. respectively.

Taking an overview of financial institutions providing banking facility in Nepal, there are 24 commercial banks, 28 development banks, 5 rural development banks, 28 saving and credit co-operative societies, 65 finance companies and 47 financial intermediary [FINGOs] licensed by NRB.⁶

A list of the commercial banks with their established date and head office is given in table: 1.1.

Table: 1.1
List of Commercial Banks in Nepal

S.N.	Commercial Banks	Established	Head Office
1.	Nepal Bank Ltd.	1937/11/15	Kathmandu
2.	Rastriya Banijya Bank	1966/01/23	Kathmandu
3.	Agricultural Development Bank Ltd.	1968/01/02	Kathmandu
4.	Nabil Bank	1984/07/16	Kathmandu
5.	Nepal Investment Bank Ltd.	1986/02/27	Kathmandu
6.	Standard Chartered Bank	1987/01/30	Kathmandu
7.	Himalayan Bank Ltd.	1993/01/18	Kathmandu
8.	Nepal Bangladesh Bank	1993/06/18	Kathmandu
9.	Nepal SBI Bank Ltd.	1993/07/07	Kathmandu
10.	Everest Bank Ltd.	1994/10/18	Kathmandu
11.	Bank of Kathmandu Ltd.	1995/03/12	Kathmandu
12.	Nepal Credit and Commercial Bank	1996/10/14	Siddhartha Nagar
13.	Lumbini Bank Ltd.	1998/07/17	Narayanghat
14.	Nepal Industrial and Commercial Bank Ltd.	1998/07/02	Biratnagar
15.	Machhapuchhre Bank Ltd.	2000/10/03	Pokhara
16.	Kumari Bank Ltd.	2001/04/03	Pokhara
17.	Laxmi Bank Ltd.	2002/04/03	Birgunj
18.	Siddhartha Bank Ltd.	2002/12/24	Kathmandu
19.	Global Bank Ltd.	2007/01/02	Birgunj, Parsa
20.	Citizen Bank Ltd.	2007/06/21	Kathmandu

⁶Banking Kabarptra, vol-50, Feb-Mar. 2005

21.	Prime Bank Ltd.	2007/09/24	Kathmandu
22.	Sunrise Bank Ltd.	2007/10/12	Kathmandu
23.	Bank of Asia Nepal Ltd.	2007/10/12	Kathmandu
24.	Development Credit Bank Ltd.	2009/01/12	Kathmandu
25.	Nepal Merchant Bank Ltd.	2009/02/22	Kathmandu
26.	Kist Bank Ltd.	2009	Kathmandu
27.	Janata Bank Limited	2010	Kathmandu
28.	Mega Bank Limited	2010	kathmandu

Source: <http://brf.nrb.org.np>

1.1.3 Introduction of Commercial Banks

Commercial banks are the main institutions, which are meant to collection and utilization of small-scattered savings of the people. The commercial banks utilize the collected resources by financing production, contribution and consumption and even to the need of the government. Commercial banks credit in the desired sectors constitutes the significant part of their activities. The accepting of deposits from individuals and institution and providing loans to the needy person and business are its two important functions. Other functions of the banks are payment of subscriptions, insurance of credit instructions, purchase and sale of securities, remittance of money and assist in foreign trade etc.

In the developing countries there is always shortage of the fund for the development activities. It is not possible to handle and develop all the sectors by government alone at a time. Private sectors also can't undertake large business because the per capita income of the people is very low.

In the context of Nepal commercial banks are the only financial institutions, which can play very important role in the resource mobilization for the economic development of the country. Commercial banks occupies greater role in the economic development by generating the saving towards the desired sector from one place to another, communicating with its branches

and agencies in different parts of the country and the world and advising to the commercial people.

Commercial banks are the only institutions that accept demand deposit; their role is to furnish short-term funds to business, agriculture and government. But these days they have become like departmental stores of finance. Their functions include substantial activity in the granting of intermediate term credit through term loan and long-term credit through leasing and the acquisition of

Commercial banks are a corporation which accepts demand deposits subject to check and make short term loans to business enterprises, regardless of the scope of its other services.⁷

Bank is a financial intermediary accepting deposits and granting loans and offering the widest menu of service of any financial institutions.⁸

Commercial banks are organized in the form of joint stock Company, primarily for the purpose of earning a profit. They can be either of the branches banking type, as we see in most of the countries, with a large network of branches, or of unit banking type, as we see in the United States, where a bank's operations are confined to a single office or a few branches within a strictly limited area. Although the commercial banks attract deposits of all kinds- current, savings and fixed- their resources are chiefly drawn from current deposits, which are repayable on demand. So they attach much importance to the liquidity of their investment and as such they specialize in satisfying the long-term credit needs of business other than the long-term.⁹

1.1.4 Investment on Government Securities

⁷ American Institute of Banking, "Principle of Bank Operation", (1972), pp-345-346.

⁸ Peter S. Rose, (2000), "Commercial Bank Management", International Edition, McGraw-Hill, Irwin, USA

⁹ K. C. Shekher, (1994), "Banking Theory and Practice", 17th edition, Vikash Publishing House Pvt. Ltd., p-6.

Investment is the use of funds to achieve additional income or growth in value. It involves the commitment of resources that have been saved or put away from current consumption, in the hope that some benefits will accrue in the future. Investment involves long-term commitment and waiting for a reward. An investment involves the sacrifice of current rupees for future rupees. The sacrifice takes place in the present and certain while the reward comes later and uncertain.¹⁰

Investment generally involves real asset such as land, building, machinery, automobiles, factories etc. And financial asset is a piece of paper representing an indirect claim to real assets held by someone else. Yet not all funds can be allocated to loans. Banks have learned to devote a significant portion of their assets portfolios to another major category of earning assets. These typically include government bonds and notes, corporate bonds and notes, other forms of the debt securities and certain limited kinds of stock permitted by law.¹¹

Government securities are most liquid, quick marketable and safe instruments to invest by commercial banks. Government securities involve Treasury bills and notes, treasury bonds, municipal and local government bonds etc.

Fiscal policy encompasses the taxation, expenditure and debt management of the government. It is used to pursue national economic goal; full employment, price stability and economic growth. When government expenditure exceeds revenues, this deficit must be financed. In order to do so, the government issues variety of securities. This variety helps the government to trap the different sources of funds that are available in the money and capital market.¹²

¹⁰ F. Sharp William, Gordon J. Alexander, Jeffery V. Baily, "Investment", Pentice Hall of India Pvt. Ltd., New Delhi, p-1.

¹¹ Peter S. Rose, (2000), "Commercial Bank Management", McGraw-Hill Irwin, USA

¹² V. K. Bhalla, "Investment Management Security Analysis and Portfolio Management", S. Chand & Co. Ltd., 8th edition, New Delhi, p-287.

In Nepal the government issued the first time securities treasury bills in the fiscal year 1961/62, and in the fiscal year 1963/64, the government for the first time floated securities [long-term] for mobilizing saving to finance the country's economic development programme and for giving compensation of forest and birta land.¹³

1.1.5 Profiles of the Banks under Study

In this section, general introduction of the banks under study is presented to furnish for the easy reference.

a. Nabil Bank Ltd.¹⁴

Nabil Bank Ltd. is the first joint venture commercial bank in Nepal, which was established in 1984 under company act 1964. Dubai Bank Ltd. [DBL] was the initial foreign joint venture partner with 50% equity investment. The share owned by DBL was transferred to Emirates Bank International Ltd [EBIL], Dubai. Later on EBIL sold its entire stock to National Bank Ltd., Bangladesh [NBLB]. Hence, 50% of equity shares of Nabil Bank Ltd. is held by NBLB and out of another 50% shares, financial institutions has taken 20% and remaining 30% were issued to general public of Nepal.

NBLB is managing the bank in accordance with the technical service agreement signed between Nabil and the foreign partner bank on June 1995. At present 16 branches of the bank are operating in the different parts of the country. Authorized capital and paid up capital of Nabil Bank Limited are Rs. 500 Million and Rs. 491.6544 million respectively.

b. Himalayan Bank Ltd.¹⁵

¹³ Ramesh Raj Ghimire,(2004), "A study on Problems and Prospects of Government Debt in Nepal", A MBS Thesis, TU

¹⁴ www.nabilbank.com

¹⁵ www.hbl.com.np

Himalayan Bank Limited was incorporated in 1992 by the distinguished business personalities of Nepal, in partnership with employees provident fund and Habib Bank Limited, one of the largest commercial bank of Pakistan. But the bank's operation was commenced from January 1993 only. It is the first commercial bank of Nepal with maximum share holding by the Nepalese private sector. The bank offers commercial activity, industrial and merchant banking. The bank at present has 18 branches in major cities of the country.

Promoter shareholders of the bank have taken 51% of the equity share. Similarly Habib Bank Ltd., Pakistan has taken 20%, Employees provident fund has taken 14% and rest 15% are owned by general public shareholders. The authorized capital of the bank is Rs. 1000 million and paid up capital is Rs. 429 million.

c. Everest Bank Ltd.¹⁶

Everest Bank Ltd. was established in 1994 with the objective of extending professionalism in banking services. Its joint venture partner is Punjab National Bank (PNB), India that maintains 3700 branches in India and 200 foreign correspondents around the world. PNB has century old tradition of successful banking and known for its financial strength in India. Professionals from PNB currently manage the bank under Technical Services Agreements signed between the two institutions. Everest Bank Ltd., thus, has the advantage of the banking expertise since the joining of PNB as the partner in the bank. Looking into the shareholders participation, PNB holds 20 Percent of share, Nepalese promoters 50 percent and residual are allocated to general public. The bank is operating in most of the town of Nepal with 13 branches. The authorized capital of the bank is Rs. 980 million and paid up capital is Rs. 755 million.

d. Bank of Kathmandu Ltd.¹⁷

¹⁶ www.ebl.com.np

¹⁷ www.bokltd.com

Bank of Kathmandu Ltd. was established in 1993 in collaboration with SIAAM Commercial Bank PCC, Thailand under company act 1964. The major objective of the bank was to operate commercial banking activities throughout the country with the approval of NRB.

The SIAAM Commercial Bank diluted its holding to the Nepalese citizen in 1998. Hence Nepalese public hold 97.72% of the equity shares of the bank and remaining shares are hold by financial institutions [0.9%] and organized institution [1.38%]. Authorized capital and paid up capital of Bank of Kathmandu Ltd. are Rs. 1000 million and Rs. 463.58 million respectively. The bank is presently operating its 8 branches in different parts in the country.

e. Nepal Industrial and Commercial Bank Ltd.¹⁸

Nepal Industrial and Commercial Bank Ltd was incorporated on 30th May 1997 A.D. with the slogan of 'complete financial solution and commenced its business on 21st July 1998.

It's authorized capital is 1000 million and paid up capital is 500 million. It is the first bank established under the Commercial Bank Act, 2031 pursuant to the liberalized economic policy of Government of Nepal. It is pure Nepalese bank from the investment point of view. Its head office is in Biratnagar, the commercial capital in Nepal. The bank operates with the objectives of providing full range of quality banking services to both the business community and general public.

NIC Bank has been promoted by a group of prominent Nepali entrepreneurs and leading industrial houses. The share composition of the bank is 65 percent by the promoters, 5 percent of RBB and 30 percent of general public. Now it has 33000 shareholders and the bank is listed in NEPSE.

¹⁸ www.nicbank.com

The bank has opened 8 branches including 2 in Kathmandu and one each in Biratnagar, Dharan, Birthamod, Birgunj, Janakpur and Pokhara within 7 years of establishment. The bank was honored on January 5, 2002 by the Finance Minister by conferring on it "commercially important person" in acknowledgement on being amongst the top ten tax payers of the nation.

The bank has launched NIC cash card, which is based on smart choice technology and 26 ATM's counters in the capital. Any branch banking facility is also available in its banking service.

1.2 Statement of the Problem

Financial system of Nepal is still in its preliminary stage of development. Small and fast growing financial sector comprises of commercial banks and other financial institutions like development banks, Finance companies, co-operatives, insurance companies etc. So far, a financial service in the country is uneven. In some regions of country, fast and advance banking service are available while other regions are fully deprived of banking services. At present, there are altogether 24 commercial banks in Nepal. There are six joint venture banks in collaboration with the foreign investment partners and remaining banks are fully owned by Nepalese investors. Most of the commercial banks were established during late eighties and early nineties due to liberalization of financial sector. Number of financial institutions is also growing. Non-bank financial units comprises of 58 finance companies, 25 development banks [including 11 rural micro finance development banks], 21 licensed co-operative societies and 44 non -government organizations.

The country is going through an economic down turn. The atmosphere in the markets is gloomy. The overwhelming view among businessmen is that the market is not expanding. Industries are suffering from an increasing pile of inventories. Construction activities are not taking place. According to Nepal Rastra Bank, government revenue collection has significantly declined.

At present Nepalese commercial banks do not seem to be capable to invest their fund in more profitable sectors where there is risk. They are found to be more interested in investing in risk free and liquid sectors i.e. treasury bills, development bonds, National saving certificates etc.

Under such situation, the present study will try to analyze the investment in government securities by commercial banks and their yields on government securities. Therefore this study will deal with the following issues.

- What is the trend of investment on long-term government securities by commercial bank?
- What is the trend of investment on short-term government securities by commercial bank?
- What is the proportion of investment on government securities on total investment?
- Whether the yield from investment on government securities to the commercial banks is significant or not?

1.3 Objectives of the study.

The general objective of this study is to analyze the commercial banks investment on government securities. The other specific objectives of this study are as follows:

- a. To study the trend of investment on long-term and short- term government securities of the selected commercial banks.
- b. To analyze the yield from government securities to the commercial banks.

- c. To evaluate the proportion of investment made on government securities by the banks.
- d. To make relevant suggestion and practical ideas and materialize recommendation based on finding.

1.4 Significance of the Study

Commercial banks have crucial role in collection of savings and transforming them into meaningful capital investment. The success and prosperity of the banks relies heavily upon the successful investment of collected resources to the productive sector of the economy. Successful formulation and effective implementation of investment policy is the prime requisite for the successful performance of the banks. Good investment policy makes positive impact and economic development of the country.

Government securities are important area for the commercial banks to invest their fund in risk free assets. Commercial banks devote a significant portion of their assets portfolios to government securities. Government securities are safe, marketable and liquid instrument to invest their fund. Therefore, an independent study in this sector is significant to give information about the government security market by analyzing the trend of investment and their yield. This study gives information about short-term government securities i.e. Treasury bills, and long- term government securities i.e. government bonds. This study analyzes the trend of investment on long-term and short-term government securities. Similarly it analyzes the yield from investment on the government securities. This study is not only to fulfill MBS level course of T. U. but also to make useful to the commercial banks. It will be beneficial to concerned government bodies also.

1.5 Limitations of the Study

This study is simply a partial fulfillment of MBS degree, which has to be finished within limited period. Hence, this study is not a comprehensive study and it focuses to analyze certain aspects of commercial banks. The study focuses only on trend of investment on long-term and short-term government securities, position of investment on government securities and yield from investment on government. Hence, this study is not far from several limitations of this study are as following.

1. This study concentrates only on those factors, which are related to government securities.
2. Simple tools, measures and techniques have been used for the analysis of the data.
3. This study is mainly based on secondary data collected from different sources (mainly from annual reports of the bank and personal conversation with Bank staff) and the study periods begin from 1998/99 to 2007/08. Hence this study covers 8 years period.
4. Even the financial statements of all commercial banks published by them are not readily available. By considering this fact, only five banks i.e. Nabil Bank Ltd., Himalayan bank Ltd., Everest Bank Ltd., Bank of Katmandu Ltd., and Nepal Industrial and Commercial Bank Ltd. are taken for the study.

1.6 Organization of the Study

The whole study has been divided into five chapters. First is introduction chapter, which includes general background statement of the problem, objectives of the study, significant of the problem, objectives of the study, significance of the study, limitations of the study and organization of the study.

Second chapter deals with review of available literatures in the field of the study being conducted. This includes review of the theories of the concerned topic, review of books and review of various empirical studies.

Third chapter explains the research methodology employed to conduct the study and tools and techniques used in analysis of the data as well. This chapter includes research design, source of data, population and samples, methods of data analysis and various financial and statistical tools.

Fourth chapter is devoted to the presentation, analysis and interpretation of the study through definite course of research methodology. This chapter also contain major finding of the study.

Fifth and the last chapter is conclusive and suggestive chapter. It includes summary of the study, conclusion of the main finding and recommendation for further improvement.

Beside these bibliography and appendices are also presented at the end of the thesis. Similarly acknowledgment, table of contents, list of tables, list of diagrams, abbreviations are included in the front of the thesis report.

CHAPTER TWO

REVIEW OF LITERATURE

2.1 Introduction

This chapter is divided in two parts. The first part deal with conceptual and theoretical review of investment, investment alternatives, government budget and deficit financing, government securities market and give general information regarding various long-term and short-term instruments for investment on government securities. In second part review of related studies are presented.

2.2 Conceptual Review

In this section conceptual and theoretical review of investment, investment alternatives, government budget and deficit financing, government securities market and gives general information of government securities like treasury bill, treasury notes and bonds, municipal obligations etc. are presented.

2.2.1 Concept of Investment

The simplest meaning of the investment is to employ available funds to generate more money in future. An investment involves the sacrifice of current rupees for future rupees. The sacrifice takes place in the present and certain; the reward comes later and is uncertain. Investment involves real assets or financial assets. Real assets are tangible, material things such as buildings, automobiles, machineries, factories and textbooks. Real assets are generally less liquid than financial assets. Financial assets are pieces of paper representing an indirect claim to real assets held by someone else. Investment is the employment of funds with the aim of achieving additional

income or growth in value. It involves the commitment of resources that have been saved or put away from current consumption in the hope that same benefits will accrue in future. Investment involves long-term commitment and waiting reward.

According to Sharpe, Alexander and Bailey "Investment in its broadest sense, means the sacrifice of certain present value for (possible uncertain) future values."¹⁹

Frank and Reilly has defined investment in such way, "An investment may be defined as the current commitment of funds for a period of time to derive a future flow of funds, that will compensate the investing unit for the time funds are committed, for the expected rate of inflation and also for the uncertainty involved in the future flow of the fund."²⁰

In the words of Gitman and Joehnk, "Investment is any vehicle into which funds can be placed with the expectation that will preserve or increase in value and generated positive returns."²¹

According to Jack Clark Francis, "Investment, in its broadest sense, means the sacrifice of current dollars for future dollars."²²

From the definition given above, it is clear that an investment means to trade a known rupee amount today for some expected future stream of payments or benefits.

A commercial bank must always mobilize its fund and other deposits to profitable, secured and marketable sector so that it earns a handsome amount of profit as well as it should be secured and can be converted into cash as per the requirement.

¹⁹ Sharp, William F., Gordon J. Alexendar and Jiffery V. Baily, (2000), "Investmens" Fifth Edition, Prentice Hall of India Pvt. Ltd., New Delhi, India

²⁰ Frank and Reilly, (1972) "Investment" The Dryden Press, CBS Publishing Japan Ltd.

²¹ Gitman, L. J. and Joehnk, (1990), "Fundamental of Investing," 4th Edition, New York, USA.

²² Francis, Jack Clark, (2003), "Investments Analysis and Management, Eleventh England Edition, McGraw Hill Inc., New York, USA, p-1

The investment process describes how an investor should go about making decisions with regard to what marketable securities to invest in, how extensive the investment should be, and when the investment should be made. A five-step procedure for making these decisions forms the basis of investment process;²³

1. Set investment policy
2. Perform security analysis
3. Construct a portfolio
4. Revise the portfolio
5. Evaluate the performance of the portfolio

2.2.2 Investment Alternatives:

There are various alternatives for investors.

1. Equity Securities
 - a. Common stock
 - b. Preferred stock

2. Short Term Debit Securities
 - a. Negotiable certificates of deposit
 - b. Commercial paper
 - c. Banker's acceptances
 - d. Treasury bills

3. Intermediate and Long term Debt Securities
 - a. Government securities
 - i. Treasury notes
 - ii. Treasury bonds
 - iii. Saving bonds
 - b. Agency Securities

²³ Ibid, p-10

- c. Municipal Securities
 - i. Revenue bonds
 - ii. General obligation bonds
- d. Corporate bonds

4. Derivative Securities

- a. Options
- b. Commodity futures
- c. Financial futures
- d. Options on futures
- e. Rights
- f. Warrants

5. Hybrid Securities

- a. Convertible Preferred Stock
- b. Convertible Bond

6. Real Assets

- a. Precious metal
- b. Real estate
- c. Collectibles

7. International Investments

- a. Multinational Corporations
- b. Foreign stocks traded on a locked exchange
- c. American depository Receipts (ADR)

8. Other Investment Alternative

- a. Pension fund
- b. Mutual fund
- c. Closed End Companies

2.2.3 Government Budget and Deficit finance

The government has two ways to finance current spending. It can collect funds through taxes, and it can print money to pay for its purchases. Thus, the basic idea behind the government budget constraint is that to pay for increased spending, the government must either (1) raise tax revenue (2) borrow funds by externally or internally, or (3) print money.²⁴ Internal borrowing is made by issuing government securities with different maturities.

Two School of thought exist on the question that it does make any differences to the economy that government choose to finance its spending by borrowing instead of raising taxes. The traditional Keynesian view is that deficit financing is more expansionary than tax financing, because taxpayers don't recognize that government debt is simply deferred tax Liabilities and that taxes will someday be raised to pay for the accumulated debt. Another view, called the Ricardian view, is that borrowing and tax financing are equivalent.²⁵

When government expenditure exceeds revenue, deficit must be financed. So, government has to issue government bond to fulfill long-term need of the government and Treasury bill for short term needs.

2.2.4 Government security market

When governments spend more than they currently rise in taxes, they must borrow. Historically, the main cause of government borrowing has been wars. Many financial innovations have been response to an urgent need to finance a war.

Market for government securities are important not only for their size. Government securities play a special role in the economy. The interest rate on government securities is the risk-free rate against which all other interest

²⁴ Baye, Michael R. and Jansen, Dennis W., (1996) "Money, Banking, and Financial Market: An Economic Approach," AITBS Publishers, India, p-561

²⁵ Ibid, p567

rates are measured. In many countries the central bank regulates the quantity of money by buying and selling government securities.²⁶

Followings are generally accepted instruments of the government securities.

1. Treasury bills.
2. Short-term Treasury notes and bonds.
3. Short-term municipal obligations.
4. Treasury notes and bonds.
5. Saving bonds.

Treasury bills, short-term treasury notes and short-term municipal obligation are money market instrument. Money market is the mechanism through which holders of temporary cash surpluses meet holder of temporary cash deficits. It is designed on the one hand, to meet the short-term cash requirements of corporations, financial institutions and governments, providing a mechanism for granting loans as short as overnight and as long as a year to maturity.²⁷

Similarly treasury notes and bonds, municipal bonds and saving bonds are capital market instruments. The capital market is the market for long-term finance. In it, investors hand over money today in exchange for promises of money far in the future. The long delay in repayment magnifies the two basic problems of lending. First, it increases risk the longer the time to repayment the greater the opportunity for the borrower to misbehave. Second, it reduces liquidity the longer the time to repayment itself as a source of liquidity.²⁸

2.2.5 Government Securities for Short-term Investment

Securities can be classified into three categories according to their maturity.

1. Short-term securities

²⁶ Ibid, p-494

²⁷ Peter S. Rose, (2003), "Money and Capital Market," Eighth Edition, McGraw Hill, Irwin, USA, pp-271-272

²⁸ Op cit, p-560

Short-term securities are those securities with an original maturity of one year or less.

2. Mid-term securities

Mid-term securities are securities with an original maturity of one to ten years.

3. Long-term securities

The securities with over ten years of original maturity are long-term securities.

But somewhere, the securities are classified into two classes according to their maturity. They are short terms securities with the maturity of one year or less and long-term securities with over one year in original maturity.

Following are the short-term investment instruments available to commercial banks worldwide.

2.2.5.1 Treasury bills

One of the most popular among all short-term investment is the Treasury bill. Treasury bills are direct obligations of the government. By law they must have an original maturity of one year or less.

Treasury bill is one of the popular money market instruments issued on a discount yield basis. They bear no interest, the yield being the difference between the purchase price and the redemption value.²⁹

There are different types of Treasury bills. Regular-series bills are issued routinely every week or month in competitive auctions. Bills issued in regular series have original maturities of three months (13 weeks), six months (26 weeks) and one year (52 weeks). On the other hand irregular-series bills are issued only when the Treasury has special cash need. These instruments include strip bills and cash management bills. A package offering of bills

²⁹ Manohar K. Shreatha and Dipak B. Bhandary, (2004), "Financial Markets and Institutions", Asmita Books and Publishers & Distibuters, Kathmandu, p-119

requiring investors to bid for an entire series of different bill maturities is known as strip bill. Investors who bid successfully must accept bills at their bid price each week for several weeks running. Cash management bills, on the other hand, consist simply of reopened issues of bills that were sold in prior weeks. The reopening of a bill issue normally occurs when there is an unusual or unexpected need for cash.³⁰

Government auctions Treasury bills in the money market to meet the short-term credit needs. Such auction is made very often each week and it includes the sale of Treasury notes and bonds as well. In our own country, we very often read Treasury bill auction in newspaper either for 91 days or less at a discount. In accordance with National Debt Act 2017 and national debt by law based on National Debt Act, Nepal Rastra Bank can assist government in mobilizing resources by issuing 91, 180 or 364 days Treasury bills. The amount of Treasury bill auctioned varies from a minimum of Rs. 200 million to the maximum of Rs. 800 million at a time. It is one of the short term funding alternatives for the government to meet government budget deficit. It makes best use of the excess liquidity available in the economy and thereby encourages the smooth and stabilized growth of the monetary and overall financial system in the economy.³¹

In our country, Treasury bill commands a major share of the market in the absence of the market for other short-term securities. Investors in Treasury bills are mainly commercial banks. As per Nepal Rastra Bank's bulletin commercial banks are found to invest Rs. 36,154.30 million out of total T-bill investment of Rs. 49,429.60 million during the 4th quarter of 2003/04.³² Other investors are mainly finance companies and other non-banking financial institutions. However individual investors find the yield on Treasury bills not attractive although as a matter of safety and for marketability purpose some big investors do invest in Treasury bills.

³⁰ Peter S. Rose, (2003), "Money and Capital Market," Eighth Edition, McGraw Hill, Irwin, USA, p-371

³¹ Op cit, p-92

³² Banking and financial statistics, vol.43, NRB.

Key Advantages and Disadvantages of Treasury bills

Following are key advantages of Treasury bills purchase by banks.

1. Safety and high liquidity
2. Ready marketability
3. Good collateral for borrowing
4. May be pledged as securities.

Following are key disadvantages of Treasury bills purchase by banks.

1. Low yields relative to other financial instruments.
2. Taxable income.

2.2.5.2 Short-term Treasury Notes and Bonds

At the time they are issued, Treasury notes and Treasury bonds have long maturities: 1 to 10 years for notes and over 10 years for bonds. However, when these securities come within one year of maturity, they are considered money market instruments. While Treasury notes and bonds are more sensitive to interest rate risk and less marketable than Treasury bills, their expected returns are usually higher than for bills with greater potential for capital gains. Treasury notes and bonds are coupon instruments, which means they promise investors a fixed rate of return, through the expected return may fall below and climb above the promised coupon rate due to fluctuation in the security's market price.³³

However, short-term Treasury notes and bonds are popular short-term investment securities; it is not found the practice of the securities in Nepal.

Key advantage and disadvantage of short-term Treasury notes and bonds

Following are Key advantage of short-term Treasury notes and bonds.

³³ Peter S. Rose, "Commercial Bank Management", International Edition, McGraw Hill, Irwin, USA, p-311

1. Safety.
2. Good collateral for borrowing.
3. Good resale market.
4. Offer yields usually higher than bill yields.

Following are Key disadvantage of short-term Treasury notes and bonds.

1. More price risk than Treasury bills.
2. Taxable gains and incomes.

2.2.5.3 Short-term Municipal Obligation

State and local governments including countries, cities and special districts, issued a wide variety of short-term debt instrument to cover temporary cash shortages. Two of the most common are tax-anticipation notes (TANs), issued in lieu of expected future tax revenues, and revenue-anticipation notes (RANs), issued to cover expenses of special projects, such as the construction of a toll bridge, highway, or airport, in lieu of expected future revenues from those projects.³⁴

However, in developed countries, short-term municipal obligations are important means to raise money for local government bodies, the practice of this security has not entered in our country Nepal.

Following are advantages and disadvantages to the investing banks to invest on short-term municipal obligations.

Advantage

1. Tax-exempt interest income.

Disadvantage

1. Lack of secondary market.
2. Taxable capital gain.

³⁴ Ibid, p-313

2.2.6 Government Security for Long-term Investment

Securities with more than one year maturities are traded in capital market. Those securities are classified as long-term securities according to its maturity. Most popular long-term securities are Treasury notes and bonds, municipal notes and bonds and saving bonds. Development bonds, National Saving Certificates and Special bonds are the main long-term government securities prevailing in Nepal.

2.2.6.1 Treasury Notes and Bonds

Among the safest and most liquid long-term investments that banks can make are Treasury notes and bonds. Treasury notes are direct obligation of the government with an original maturity of one to ten years. Similarly, Treasury bonds are also direct obligation of government over 10 years of original maturities. Treasury notes and bonds are more sensitive to interest rate risk and less marketable than Treasury bills; their expected returns (yields) are usually higher than for bills with greater potential for capital gain. Treasury notes and bonds are a coupon instrument, which means they promise investors a fixed rate of return.

Followings are the main advantages and disadvantages of Treasury notes and bonds purchased by bank.

Advantages

1. Safety.
2. Good resale market.
3. Good collateral for borrowing.
4. May be pledged as security.

Disadvantages

1. Low yields relative to term private securities.
2. Taxable capital gain and income.

On February 12, 1964, the government of Nepal first time floated development bond of Rs. 13.10 million carrying on interest rate of 6 percent per year with a maturity period of five years. At the same period, the government issued compensation bond for land acquisition with the interest rate of 3 percent per annum with the maturity period of 10 years amounting Rs. 407 thousands and composition bonds for land acquisition with one percent interest rate per annum with the maturity period of 20 years amounting Rs. 5.56 million. The other component of the borrowing was from Nepal Rastra Bank as guaranteed loans and special bonds. The government also started to borrow since 1984 by issuing national saving certificate, which amounted Rs. 500 million that year. Similarly in 1991, the government started to borrow by issuing CB Pass and other bonds, which amounted to Rs. 8478.10 million in that year.³⁵ Now there are development bonds, National Saving Certificates and special bonds as the long-term securities issued by the government of Nepal.

2.2.6.2 Municipal Bond

State and local government bodies like district development committees and municipalities also issue bonds to meet their financial needs. The securities issued by these local government bodies are known as municipal bonds. Municipals basically include all fixed income financial instruments issued by a governmental unit other than federal government. So far no local government bodies in Nepal have issued such securities. In developed countries, municipal bonds are important means to raise money for local government bodies. It is also popular among high tax bracket investors because of tax freedom on municipal bonds. There are two major types of municipal bonds: general obligation and revenue. General obligation municipal bonds are

³⁵ Ramesh Raj Ghimire, (2004), "A Study on Problems and Prospects of Government Debt in Nepal", An unpublished MBS Thesis, TU

backed by taxing power of the municipality; It means the tax revenue of the municipality principal payment. Revenue bonds are issued to finance capital expenditures for publicly owned utilities such as water, electricity or gas. Therefore, revenue bonds are backed by revenue from designated project. International donors encourage developing local government with sufficient funds to support various development programs.³⁶

Followings are key advantages and disadvantages of municipal bond to invest by the banks.

Advantages

1. Tax exempt interest income
2. High credit quality
3. Liquidity and marketability of selected securities.

Disadvantages

1. Volatile market
2. Some issues have limited resale possibilities
3. Taxable capital gains.

2.3 Review of Related Studies

In this section thesis relating to commercial bank's investment on government securities are reviewed. General objectives and findings of related studies are presented as follows.

Mr. Gokul Shrestha, in his thesis paper entitled, "**A Study on Analysis of Investment Portfolio of Joint Venture Banks in Nepal**"³⁷, has made an

³⁶ Manohar K. Shreatha and Dipak B. Bhandary, (2004), "Financial Markets and Institutions", Asmita Books and Publishers & Distibuters, Kathmandu,

³⁷ Gokul Shrestha, (2005), "A Study on Analysis of Investment Portfolio of Joint Venture Banks in Nepal", an unpublished MBS thesis, TU

effort to evaluate the investment portfolio of joint venture banks by analyzing the risk and return and trend of investment and by evaluating the financial performance in term of investment strategies. He had made following conclusions regarding investment on government securities.

1. There is little risk on investment on government securities. It is proved by the analysis that low risk on investment on government securities. Proper investment on various securities such as treasury bills, national saving certificates, development bonds etc. and fixed income percentage rate that help to reduce the variability of return.
2. Loan and advance to total deposit ratio of all JVBs is higher than government securities to total deposit ratio. JVBs are mobilized their total deposits more effectively on loan and advances, then invest on government securities and very nominal part in share and debenture.
3. The JVBs give second priority to government securities, in an average 21.44% of total investment is invested in government securities.
4. Investment on various assets like government securities, loan and advance and share and debenture are also increasing per year. Investment of joint ventures banks on government securities is increasing more rapidly than others.
5. Joint venture banks are able to raise the amount of investment on government securities with rise in the volume of total deposit.

Mr. Niraj Kumar Pahadi, in his thesis paper entitled “**Analysis of Deposit and Investment Portfolio of Nepalese Commercial Banks**”³⁸ has made and effort to measure the performance of individual banks by using utilization the risk and return. He had made the conclusion that one of the avenue of

³⁸ Niraj Kumar Pahadi, (2004), “Analysis of Deposit and Investment Portfolio of Nepalese Commercial Banks”, An unpublished MBS thesis, TU

banking sector; treasury is not gaining momentum growth. With the slowdown in the overall economic activities along with lack of demand for developing funds from government, resulting in high liquidity in the banking sector, 91-days and 364-days treasury bill rates have been hovering in the level of 1% and 2.5% respectively. Other government securities condition is the same. That's why; the commercial banks are sinking the investment in the government securities significantly. The present scenario shows that banks invest in treasury operation less than 10 percent of the total investment portfolio.

Mr. Parsuram Prasad Paudel, in his thesis entitled “ **A Comparative Study on Investment Behavior Adopted by Nabil Bank Limited and Himalayan Bank Limited**³⁹” has made an effort to present investment behavior of the banks comparatively and to examine SWOT analysis of both banks relating to their investment. He had concluded following relating to investment on government securities.

1. The investment aspects of both banks are satisfactory. Government securities should not be ignored for investing which deserves certainty in payment, maturity risk etc.
2. Nabil has not invested in government bond.
3. Comparatively, Nabil is in first position for investing in government securities than HBL. Average investment in government securities by Nabil is also higher.
4. Comparatively, Nabil seems lower to invest than HBL. But its investment seems to be high yielding as compared to HBL. Thus investment policy seems to be aggressive as compared to HBL.

³⁹ Parsuram Prasad Paudel, (2005), “ A Comparative Study on Investment Behavior Adopted by Nabil and Limited and Himalayan Bank Limited” An unpublished MBS thesis, TU

5. HBL is interested to invest on government bond, which has positive growth rate too.

Ms. Punya Sworee Suwal, in her thesis entitled “**A Study on Portfolio Analysis of Joint Venture Banks**⁴⁰” has made an effort to evaluate the investment and advance portfolio of the joint venture banks. In her thesis, she had concluded that JVBs seem to be unable to grasp the opportunities by making suitable combination of investment portfolio. From the resource utilization point of view, JVBs mostly mobilized their resources in loan and advance. Secondly they mobilized their funds on government securities. The trend analysis of JVBs shows that total investment, total deposit, investment on government securities, investment on loan and advances and investment on share and debenture are in increasing trend. In comparison increasing ratio of government securities is higher than loan and advances and share and debenture. It reveals that the investment on government securities is increasing more rapidly than loan and advances and share and debenture.

⁴⁰ Punya Sworee Suwal, (2005) “A Study on Portfolio Analysis of Joint Venture Banks”. An unpublished MBS thesis, TU

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

Research is to find out to gain knowledge about a phenomenon. Combining researching repeatedly is called research, which includes study to find out new facts, knowledge, principles and theories in scientific way. Likewise; research needs various methodologies, tools, techniques etc.

Methodology is the research method used to test the hypothesis. Research methodology is a systematic way to solve the research problems. It describes the methods and process applied in the entire aspects of the study. It refers to the various sequential steps to be adopted by a researcher in studying a problem with certain objectives in view.⁴¹

Thus the overall approach to the research is presented in this chapter. This chapter contains the research design, population and sample size, sample selection procedure, data collection procedure, data processing, use of tools and techniques etc.

3.2 Research Design

Research Design is the plan, structure and strategy of investigation conceived so as to obtain answers to research questions and to control variance.⁴² This research design is a plan to obtain the answer of the research question through analysis of data. It is the specification of methods and procedures for acquiring the information needed. In this study, historical and comparative research design is adopted along with trend analysis.

⁴¹ C.R. Kothari (1994), **Research Methodology: Methods and Techniques**, New Delhi: Vikash Publication, P. 19.

⁴² F.N. Kerlinger (2002), **Foundation of Behavioural Research**, New Delhi: Surjeet Publication, p. 300.

3.3 Variables

A variable is a symbol to which numerals or values are assigned.⁴³ So the variables can take on values. This research intends to identify the factors that affect the investment on government securities by commercial bank. Thus, investment on government securities is known as dependent variable, which is affected by many other variables. The entire factor that affects the investment on government securities like investment portfolio management, security problem, investment opportunity and other rules, regulations and directives of the institution regarding investment etc. are the independent variables.

3.4 Population and Sample

The population refers to the organizing of the same nature on its services and product in general. This study intends to identify the factors relating to the investment on government securities by Nepalese commercial banks. So the population of the study is all commercial bank prevailing in Nepal i.e. 21 commercial banks of Nepal. In this study 5 sample banks are taken into consideration among those 21 commercial banks on the basis of quota as well as convenience sampling from 2 different types of bank according to their venturing capital.

The number of Non Joint Venture Banks is grater than joint venture banks (JVBS), but due to the performance and to meet the objectives of the study 2 Non joint ventures and 3 JVBS are taken as sample, namely; BOK and NIC from first group and HBL, EBL and NABIL from the later. The sample covers 17.86% of the total population.

3.5 Sources and Nature of Data

⁴³ Ibid. p.300.

The study is based on secondary data. The secondary data are used to analyze the historical trend. Similarly they are used to analyze different ratios regarding investment on government securities. The data regarding interest rates are used to analyze the yield trend.

The major source of secondary data are magazines, web-site of Nepal Rastra Bank, official publications, annual reports of the commercial banks, publication of Security Board of Nepal, unpublished studies and reports, researchers' journals, bulletins of different authorities, Other related newspapers, publications and web-sites.

3.6 Data Collection Techniques

The study is mainly based on secondary data. To collect necessary data, published materials are viewed in various spots. Books of by different authors, unpublished thesis reports, journals, magazines, Internet web sites, AGM reports of commercial banks, bulletins published by NRB are major sources of the data. To collect these secondary data, the researchers visited, TU central library, SEBO/N library and NRB library. Different web sites were searched to collect necessary information for the study.

3.7 Data Analysis Tools

The data collected from various sources leads to the logical conclusion, only if the appropriate tools and techniques are adapted to analysis such data. The collected data has no meaning if such data are not analyzed. To analyze the data in this research some statistical and financial tools are used, which are explained here separately.

3.7.1 Statistical Tool

Statistical tools are the measures or the instruments to analyze the collected data from different sources. In statistics, there are numerous statistical tools to analyze data of various natures. In this study, the researcher has used the following statistical tools to analyze the data.

3.7.1.1 Average (Mean)

An average is a single value related from a group of values to represent them in some way, a value, which is supposed to stand for whole group of which it is part, as typical of all the values in the group.⁴⁴ There are various types of averages. Arithmetic mean (A.M. simple and weighted), median, mode, geometric mean, harmonic mean, are the major types of averages. The most popular and widely used measure representing the entire data by one value is the A.M. The value of the A.M. is obtained by adding together all the items and by dividing this total by the number of items or observations.

Mathematically,⁴⁵

Arithmetic Mean (A.M.) is given by, $\bar{X} = \frac{\sum X}{n}$

Where,

\bar{X} = Arithmetic Mean

X = Sum of all the values of the variable X.

n = Number of observations

3.7.1.2 Standard Deviation

The standard Deviation () measures the absolute dispersion. The greater the standard deviation, greater will be the magnitude of the deviation of the values from their mean. A small standard deviation means a high degree of

⁴⁴ S.P. Gupta (1990), **Statistical Methods**, New Delhi: Sultan Chand & Sons Publications, p.E-7-2.

⁴⁵ S.C. Gupta (1992), **Fundamentals of Statistics**, Bombay: Himalayan Publishing House, p.238.

uniformity of the observations as well as homogeneity of a series and vice versa.

Mathematically,⁴⁶

$$\text{Standard Deviation ()} = \sqrt{\frac{1}{n} \sum (X - \bar{X})^2}$$

3.7.1.3 Coefficient of Variation

The standard deviation is absolute measures of dispersion: where as the coefficient of variation (CV) is a relative measure. To compare the variability between two or more series, CV is more appropriate statistical tool.

Mathematically,⁴⁷

$$\text{Coefficient of Variation (CV)} = \frac{\dagger}{\bar{X}} \times 100$$

3.7.1.4 Trend Analysis:

Trend analysis is a significant tool of horizontal financial analysis. It is a dynamic method to indicate the changes in terms of financial statement. Trend analysis helps to identify the controllable items of given period and future forecast can be made for ongoing concern. It is one of the useful tool in making a comparative study of the financial statement of the number of years. It makes easy to identify the changes in an item or in a group of items over a period of time and to draw the conclusion regarding the changes there on.

Under this topic, trend of different ratios are forecasted for next five years. The projections are based on the following assumptions.

- The main assumption is that other things will remain unchanged.
- The banks will remain in the present position.
- The economy will remain in the present stage.

⁴⁶ Ibid. p. 380.

⁴⁷ Ibid.

- NRB will not change its guidelines to commercial banks.
- The forecast will be true only when the limitation of least square method is carried out.

Least square method:

This is one of the most commonly used methods to describe the trend. This is the mathematical method.

The straight line trend between the dependent variable 'y' and independent variable 'x' (i.e. time) is representing by equation $Y_c = a + bx$

Where,

Y_c = estimated value of 'y' for any given value of independent variable X.

a = y – intercept of value of 'y' when x = 0 [i.e. $a = \frac{\sum Y}{n}$]

b= slope of the trend line or amount of change in 'y' per unit change in x

$$[\text{i.e. } b = \frac{\sum XY}{\sum X^2}]$$

3.7.2 Financial Tools

Financial tools are also the measures or the instruments to analyze the collected data from different sources. In this study, the researcher has used the following financial tools to analyze the data.

3.7.2.1 Financial Ratio Analysis

Financial Ratio Analysis is a tool, through which economic and financial position of organization can be fully X-rayed. It is the indicated quotient of two mathematical expressions, and as the relationship between two or more things. Therefore, to find out the position of investment in government securities of sampled commercial banks, the following ratios are examined.

i) Investment on Government Securities to Total Investment Ratio

This ratio is designed to measure part of the bank's investment on risk less assets on total investment. This ratio is obtained by dividing total investment on government securities by total investment.

Investment on Government Securities to Total Investment Ratio

$$= \frac{\text{Investment on Government Securities}}{\text{Total Investment}} \times 100$$

ii) Investment on Treasury Bills to Total Investment Ratio

This ratio is designed to measure what is the portion of investment on treasury bills on total investment. This ratio is obtained by dividing investment on Treasury bill by total investment.

Investment on Treasury Bills to Total Investment Ratio

$$= \frac{\text{Investment on Treasury Bills}}{\text{Total Investment}} \times 100$$

iii) Investment on Government Bond to Total Investment Ratio

Investment on government bond to total investment ratio shows the percentage of investment on government bond on total investment. This ratio is measured by dividing the investment on government bond by total investment.

Investment on Government Bond to Total Investment Ratio

$$= \frac{\text{Investment on Government Bond}}{\text{Total Investment}} \times 100$$

iv) Total Investment to Total Deposit Ratio

This ratio shows the percentage of total investment on total deposit. The ratio is obtained by dividing total investment by total deposit. The formula of the ratio is presented as follows.

Total Investment to Total Deposit Ratio

$$= \frac{\text{Total Investment}}{\text{Total Deposit}} \times 100$$

v) Investment on Government Securities to Total Deposit Ratio

This ratio is measured to know the investment on risk free assets on total depository liabilities. The ratio is obtained by dividing total investment on government securities by total deposit.

Investment on Government Securities to Total Deposit Ratio

$$= \frac{\text{Investment on Government Securities}}{\text{Total Deposit Ratio}} \times 100$$

vi) Investment on Treasury Bills to Total Deposit Ratio

This ratio shows the percentage of investment on short-term risk free assets i.e. treasury bills on total depository liabilities. The ratio is measured by dividing investment on treasury bills by total deposit. The ratio can be presented using following formula.

Investment on Treasury Bills to Total Deposit Ratio

$$= \frac{\text{Investment on Treasury Bills}}{\text{Total Deposit Ratio}} \times 100$$

vii) Investment on Government Bond to Total Deposit Ratio

Investment on government bond to total deposit ratio is measured to determine the percentage of investment on long-term risk free government security to total deposit liability. This ratio is obtained by dividing investment on government bond by total deposit. Following formula is used to measure the ratio.

Investment on Government Bond to Total Deposit Ratio

$$= \frac{\text{Investment on Government Bond}}{\text{Total Deposit Ratio}} \times 100$$

viii) Investment on Treasury Bills to Total Investment on Government Securities Ratio

This ratio is measured to find out the portion of investment on short-term government securities to total risk free investment. The ratio is obtained by dividing investment on treasury bills by total investment on government bond. To measure the ratio following formula is used.

Investment on Treasury Bills to Total Investment on Government Securities

$$= \frac{\text{Investment on Treasury Bills}}{\text{Total Investment on Government Securities}} \times 100$$

ix) Investment on Government Bond to Total Investment on Government Securities Ratio

This ratio is designed to measure the percentage of investment on long-term government securities on total government investment. The ratio is obtained by dividing investment on government bond by total investment on government securities.

Investment on Government Bond to Total Investment on Government Securities Ratio

$$= \frac{\text{Investment on Government Bond}}{\text{Total Investment on Government Securities Ratio}} \times 100$$

x) Investment on Treasury bills to Short-term Investment Ratio

The ratio is designed to measure the percentage of investment on short-term risk less security i.e. treasury bills to total short-term investment. The ratio is obtained by dividing the investment on treasury bills by short-term investment.

Investment on Treasury Bills to Short-term Investment Ratio

$$= \frac{\text{Investment on Treasury Bills}}{\text{Short-term Investment}} \times 100$$

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.1 Introduction

This chapter deals with the presentation, analysis and interpretation of statistical data to carry out the research work. Here the study presents the collected data for various purpose of analysis. The data are analyzed by using various financial and statistical tools. The analyzed data and results are presented clearly by using tables and graphs. Each of the results is interpreted in each topics and subtopics.

4.2 Financial Ratio Analysis

Financial Ratio Analysis is a tool, through which economic and financial position of organization can be fully to X-rayed. It is the indicated quotient of two mathematical expressions, and as the relationship between two or more things. Therefore, to find out the position of investment in government securities of sample commercial banks, the following ratios are examined.

4.2.1 Investment on Government Securities to Total Investment Ratio

This ratio is designed to measure part of the bank's investment on risk free assets on total investment. This ratio is obtained by dividing total investment - on government securities by total investment.

Investment on Government Securities to Total Investment Ratio

$$= \frac{I}{n} \times 100$$

Comparative analysis of investment on government securities to total investment ratio is shown in the following table.

Table: 4.1

Investment on Government Securities to Total Investment Ratio

Ratio in %

Year	Banks				
	Nabil	HBL	EBL	BOK	NIC
2000	98.63	99.57	99.03	94.59	99.74
2001	35.47	49.60	91.27	71.65	90.19
2002	50.26	28.27	90.90	80.10	90.26
2003	59.50	39.30	96.70	83.18	93.23
2004	62.93	36.93	97.27	95.74	70.15
2005	56.54	46.78	98.65	82.61	75.93
2006	37.23	47.24	84.46	78.70	69.75
2007	53.68	54.59	94.37	77.85	66.85
Mean	56.78	50.285	94.08	83.05	82.01
S.D.	19.05	20.10	5.55	7.51	12.97
C.V.	0.335	0.40	0.06	0.09	0.16

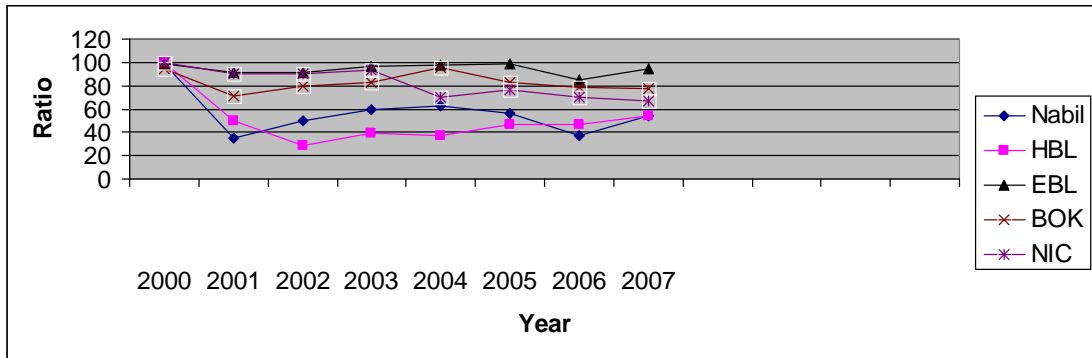
Source: Appendix I

From the table: 4.1, it is showed that the ratio of investment on government securities to total investment of HBL is fluctuating in decreasing and increasing trend. The value is more fluctuated from its average ratio. The highest ratio is 99.57% in the year 2000 and the lowest is 28.27% in year 2002. Compared to other bank EBL has the highest average ratio of 94.06%. The value is consistent to average ratio too. It has the highest ratio of 99.03% in the year 2000. The Nabil has invested average 64.89% in government securities. The highest ratio is 98.63% in year 2000 and the lowest is 35.47% in year 2001. The ratios are scattered from the average ratio. The ratio of EBL is fluctuating in increasing trend. It has the highest ratio of 99.57% in year 2000 and the lowest ratio is 84.46% in the year 2006. The ratio of BOK has

more consistency among the banks. It has invested between 99.24% in 2000 and 66.25% in 2007. With the help of figure: 4.1, it is seen more clearly.

Figure: 4.1

Investment on Government Securities to Total Investment Ratio



4.2.2 Investment on Treasury Bills to Total Investment Ratio

This ratio is designed to measure the portion of investment on short-term government securities i.e. treasury bills on total investment. This ratio is obtained by dividing investment on Treasury bill by total investment.

Investment on Treasury Bills to Total Investment Ratio

$$= \frac{\text{Investment on Treasury Bills}}{\text{Total Investment}} \times 100$$

In the table: 4.2, comparative analysis of investment on treasury bills to total investment ratio is presented

Table: 4.2

Investment on Treasury Bills to Total Investment Ratio*Ratio in %*

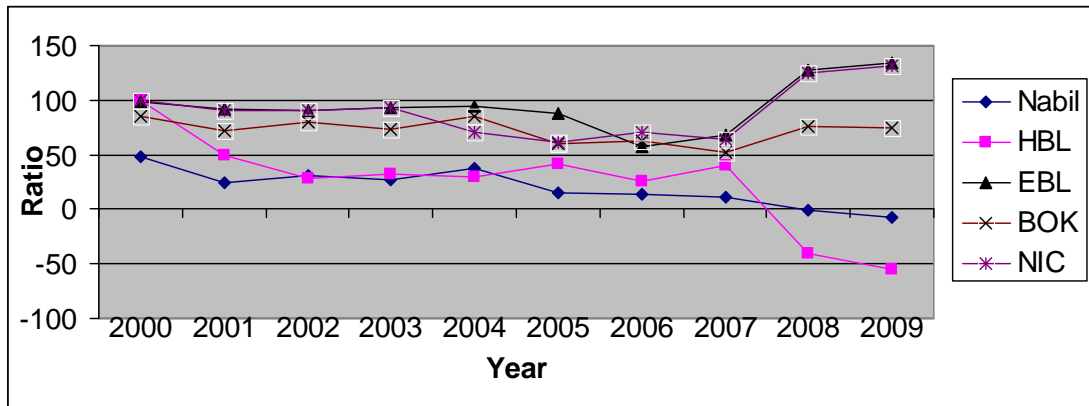
Year	Banks				
	Nabil	HBL	EBL	BOK	NIC
2000	48.50	99.57	99.03	84.70	99.74
2001	24.11	48.90	91.27	71.65	90.19
2002	30.70	28.27	90.01	80.10	90.26
2003	26.42	32.77	92.95	72.88	93.23
2004	37.58	29.94	94.34	85.17	70.16
2005	15.57	41.22	88.01	60.01	61.54
2006	14.22	25.55	56.94	62.46	71.13
2007	11.71	40.56	67.67	52.07	63.54
Mean	26.10	43.34	85.02	71.13	79.97
S.D.	22.97	22.64	12.07	8.79	16.91
C.V.	0.88	0.52	0.14	0.12	0.21

Source: Appendix II

In the table: 4.2, it is presented the fact of investment on treasury bill to total investment ratio. The ratio of EBL seems the highest among the banks under study. The average ratio of EBL is 85.02% and the value is consistent to average ratio. The ratio of HBL is scattered from the average ratio and fluctuated in decreasing trend. It has 99.57% investment in treasury bill to total investment in 2000, which is the highest ratio. The lowest ratio of the bank is 28.27% in year 2002. Nabil has invested average 26.10% in treasury bill, which is the least ratio among the banks under study. The highest ratio is 48.50% in the year 2000 and the lowest ratio is 11.71% in 2007. NIC and BOK have average ratio of 79.97% and 71.13% respectively. The ratios are deviated from average ratio by 12.07%. The highest ratio and the lowest ratio of BOK are 85.17% in 2004 and 52.07% in year 2005 respectively. The ratios are more homogeneous among the banks under study. With the help of the following figure, it is seen more clearly.

Figure: 4.2

Investment on Treasury Bills to Total Investment Ratio



4.2.3 Investment on Government Bond to Total Investment Ratio

Investment on government bond to total investment ratio shows the percentage of investment on government bond on total investment. This ratio is measured by dividing the investment on government bond by total investment.

Investment on Government Bond to Total Investment Ratio

$$= \frac{I}{n} \times 100$$

Comparative analysis of investment on government bond to total investment ratio of the sample banks, Nabil, HBL, EBL, BOK and NIC is presented in the following table: 4.3.

Table: 4.3

Investment on Government Bond to Total Investment Ratio

Ratio in %

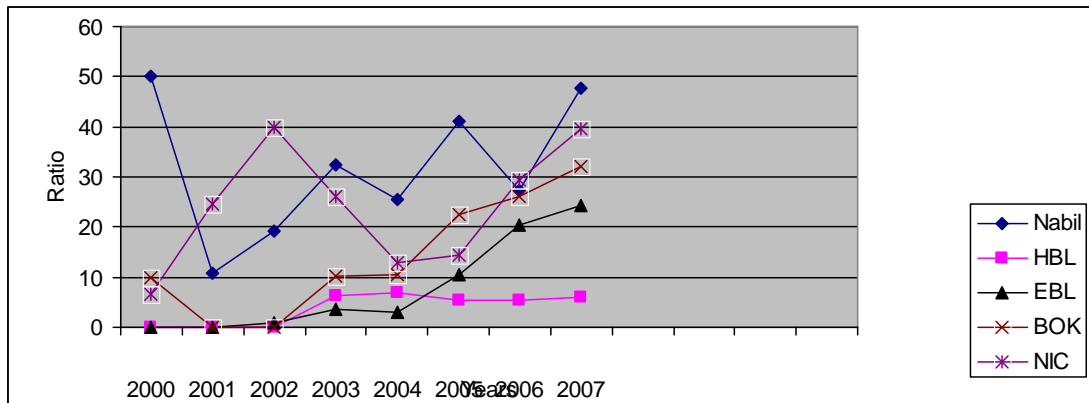
Years	Banks				
	Nabil	HBL	EBL	BOK	NIC
2000	50.14	0	0	9.89	6.61
2001	10.91	0	0	0	24.69
2002	19.12	0	0.89	0	39.87
2003	32.51	6.41	3.75	10.30	26.09
2004	25.35	6.86	2.93	10.56	12.86
2005	40.97	5.45	10.64	22.59	14.39
2006	27.16	5.50	20.38	26.03	29.29
2007	47.77	6.0	24.34	32.17	39.60
Mean	31.74	3.78	7.86	13.94	24.17
S.D.	12.04	2.87	8.09	8.71	14.52
C.V.	0.37	0.76	1.00	0.62	0.60

Source: Appendix III

From the table: 4.3, it is revealed that HBL and EBL have invested fewer amounts in government bond. The ratios of investment on government bond to total investment of HBL and EBL are nil in first 3 and 2 years of the study period respectively. It means banks didn't invested in government bond in the years. BOK has also not invested in the year 2001 and 2002. BOK has invested in average 8.71% in government bond. In average, Nabil has invested 31.74% in government bond. The deviation from the average ratio of the bank is 12.04%. Average ratio of NIC is 24.17%. The highest ratio is 39.87% in year 2002. Nabil has invested on government bond in each of the year of the study period. It has invested 31.74% in average in government bond. With the help of the figure: 4.3, it is seen clearly.

Figure: 4.3

Investment on Government Bond to Total Investment Ratio



4.2.4 Total Investment to Total Deposit Ratio

This ratio shows the percentage of total investment on total deposit. The ratio is obtained by dividing total investment by total deposit. The formula of the ratio is presented as follows.

Total Investment to Total Deposit Ratio

$$= \frac{\text{Total Investment}}{\text{Total Deposit}} \times 100$$

In the table: 4.4, comparative analysis of total investment to total deposit ratio of the sample banks, Nabil, HBL, EBL, BOK and NIC is presented.

Table: 4.4

Total Investment to Total Deposit Ratio*Ratio in %*

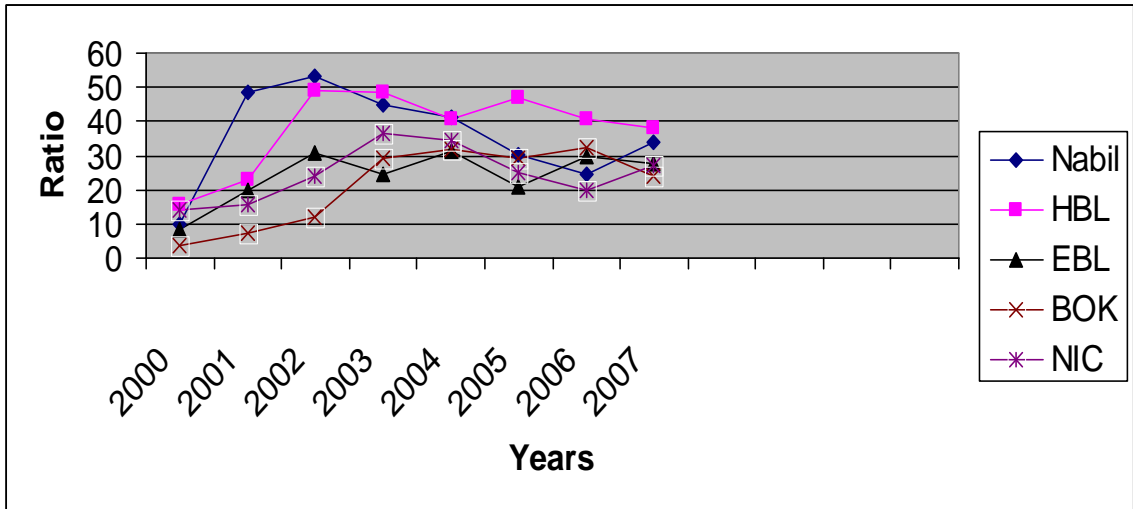
Year	Banks				
	Nabil	HBL	EBL	BOK	NIC
2000	9.79	15.74	8.51	3.81	14.19
2001	48.64	23.18	19.71	7.33	15.86
2002	53.35	49.24	31.00	11.81	23.81
2003	44.88	48.44	24.71	29.44	36.68
2004	41.40	40.82	31.44	32.00	34.21
2005	30.24	47.12	21.08	29.06	25.2
2006	24.61	40.55	29.89	32.22	20.05
2007	33.74	38.26	27.56	24.17	27.27
Mean	35.83	37.91	24.23	21.23	24.65
S.D.	17.13	17.88	8.07	13.77	8.44
C.V.	0.48	0.47	0.33	0.65	0.34

Source: Appendix IV

In table: 4.4, total investment to total deposit ratio is presented. The percentage of total investment in total deposit of HBL is, in average, 37.91%, which is the highest ratio among the banks under study. BOK has made investment of 21.23%, which is the lowest ratio among the banks. The ratio of the EBL is more consistent but the ratio of Nabil is scattered from the respective average value. Average ratios of Nabil, EBL and NIC are 35.83%, 24.23% and 24.65% respectively. Fluctuation trend of most of the banks is increasing. The highest total investment to total deposit ratio of Nabil and HBL are 53.35% and 49.24% respectively in year 2002. The lowest ratios of the banks are 9.79% in year 2000 and 15.74% in 2000 respectively. EBL has invested 31.44% in 2004, which is the highest ratio of the bank and the lowest ratio is 8.51% in 2000. The highest and lowest ratios of BOK are 32% in year 2004 and 3.81% in 2000 respectively. NIC has invested maximum 36.68% in year 2003 and minimum 14.19% in year 2000. These facts are clearly presented in the following figure.

Figure: 4.4

Total Investment to Total Deposit Ratio



4.2.5 Investment on Government Securities to Total Deposit Ratio

This ratio is measured to know the portion investment on risk free assets on total depositary liabilities. The ratio is obtained by dividing total investment on government securities by total deposit.

Investment on Government Securities to Total Deposit Ratio

$$= \frac{\text{Investment on Government Securities}}{\text{Total Deposit Ratio}} \times 100$$

In the following table: 4.5, comparative analysis of investment on government securities to total deposit ratio of the sample banks, Nabil, HBL, EBL, BOK and NIC is presented.

Table: 4.5

Investment on Government Securities to Total Deposit Ratio*Ratio in %*

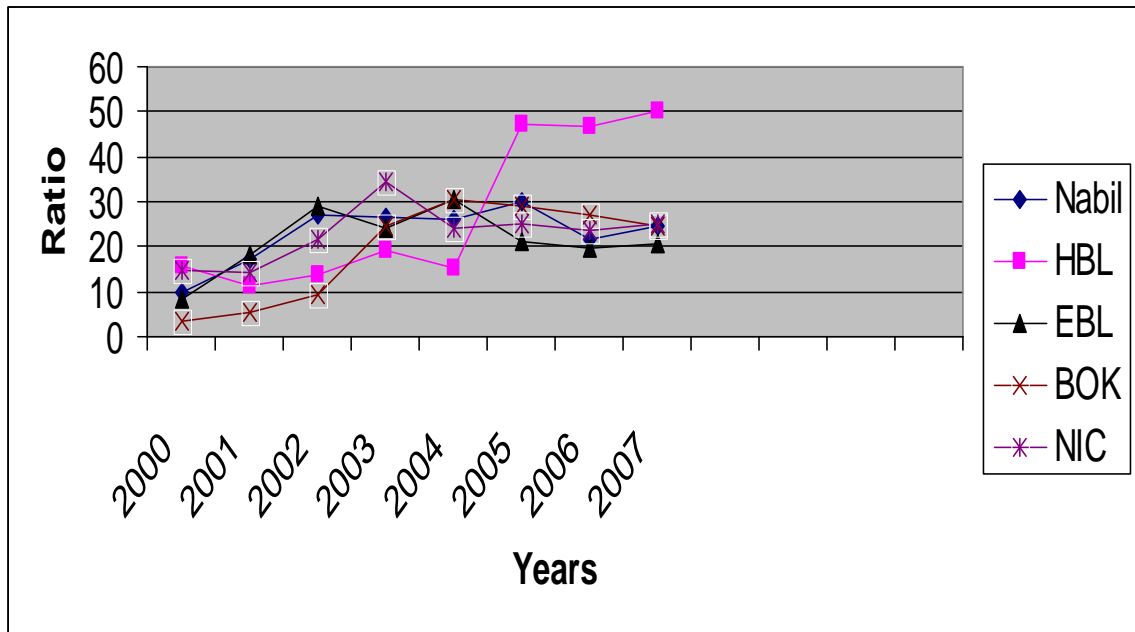
Year	Banks				
	Nabil	HBL	EBL	BOK	NIC
2000	9.65	15.67	8.42	3.60	14.88
2001	17.25	11.50	17.99	5.26	14.30
2002	26.81	13.92	29.18	9.46	21.50
2003	26.71	19.04	23.89	24.49	34.20
2004	26.05	15.08	30.59	30.64	24.00
2005	30.24	47.12	21.08	29.06	25.2
2006	21.83	46.82	19.59	27.27	23.52
2007	28.43	50.39	20.77	24.67	24.89
Mean	22.87	27.44	21.43	19.31	22.81
S.D.	6.19	14.68	6.51	11.72	6.01
C.V.	0.27	0.53	0.30	0.60	0.26

Source: Appendix V

From the above table: 4.5, it is revealed that investment on government securities to total deposit ratio of HBL is the highest among the banks. Average ratio of the bank is 27.44%. The bank has invested maximum 50.39% in the year 2007 and minimum 11.50% in 2001. EBL has in average 21.43%, and it has more homogeneity in the ratio then other banks. The highest ratio of BOK is 30.64% in the year 2004 and the lowest ratio is 3.60% in 2000. Average ratios of Nabil and NIC are 22.87% and 22.81% respectively. The highest ratios of the banks are 30.24% and 34.20% in the year 2005 and 2003 respectively. BOK has average ratio of 19.31%. The BOK has invested between 30.64% in 2004 and 3.6% in 2003. The ratio of BOK is more scattered from its average ratio. These Facts are presented in figure: 4.5 more clearly.

Figure: 4.5

Investment on Government Securities to Total Deposit Ratio



4.2.6 Investment on Treasury Bills to Total Deposit Ratio

This ratio shows the percentage of investment on short-term risk free assets i.e. treasury bills on total depository liabilities. The ratio is measured by dividing investment on treasury bills by total deposit. The ratio can be presented using following formula.

Investment on Treasury Bills to Total Deposit Ratio

$$= \frac{\text{Investment on Treasury Bills}}{\text{Total Deposit Ratio}} \times 100$$

Comparative analysis of investment on treasury bill to total deposit ratio of the sample banks, Nabil, HBL, EBL, BOK and NIC is presented in the table: 4.5.

Table: 4.6

Investment on Treasury Bills to Total Deposit Ratio*Ratio in %*

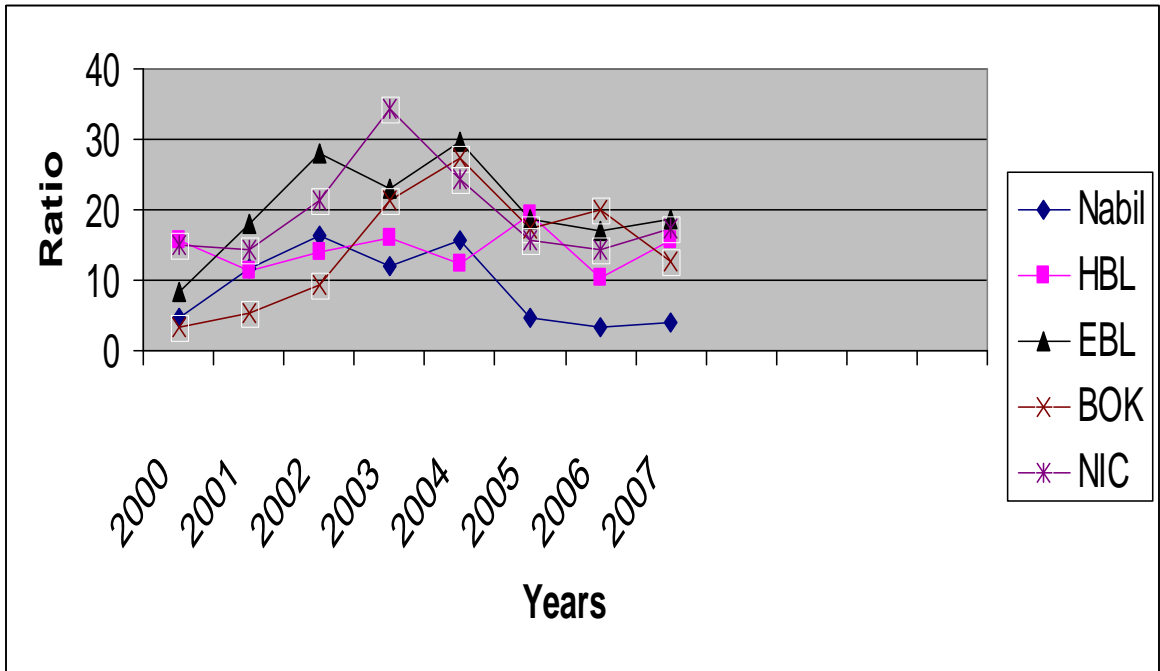
Year	Banks				
	Nabil	HBL	EBL	BOK	NIC
2000	4.75	15.67	8.42	3.22	14.88
2001	11.73	11.50	17.99	5.26	14.30
2002	16.38	13.92	27.90	9.46	21.50
2003	11.86	15.88	22.96	21.45	34.20
2004	15.56	12.22	29.66	27.26	24.27
2005	4.7	19.42	18.56	17.44	15.51
2006	3.49	10.36	17.01	20.12	14.26
2007	3.95	15.52	18.65	12.59	17.33
Mean	9.05	14.31	20.14	14.6	19.53
S.D.	5.03	2.71	6.99	8.17	7.67
C.V.	0.55	0.19	0.35	0.56	0.39

Source: Appendix VI

In table: 4.6, investment in treasury bills to total deposit ratio is presented. EBL has the highest average ratio of 20.14%. The bank has invested between 29.66% in the year 2004 and 8.42% in the year 2000. BOK has invested 14.6% in treasury bills. The lowest and highest ratios of BOK are 34.20% in the year 2003 and 14.3% in 2001. The average ratio of HBL is 14.31%. The bank has invested minimum 10.36% in 2006 and maximum 19.42% in 2005. Nabil has invested between 3.49% and 16.38%. The average ratio of the bank is 9.05% and is has more homogeneous investment. Similarly NIC has invested, in average, 19.53% of total deposit in treasury bills. The highest ratio of the bank is 34.20% in the year 2003 and the lowest ratio is 14.26% in 2006. The ratio of the bank is dispersed by 7.67% from the average ratio. Following figure presents the ratios in graphic form more clearly.

Figure: 4.6

Investment on Treasury Bills to Total Deposit Ratio



4.2.7 Investment on Government Bond to Total Deposit Ratio

Investment on government bond to total deposit ratio is used to determine the percentage of investment on long-term risk free government security to total deposit liability. This ratio is obtained by dividing investment on government bond by total deposit. Following formula is used to measure the ratio.

Investment on Government Bond to Total Deposit Ratio

$$= \frac{\text{Investment on Government Bond}}{\text{Total Deposit Ratio}} \times 100$$

In the following table: 4.7, comparative analysis of investment on government bond to total deposit ratio of the sample banks, Nabil, HBL, EBL, BOK and NIC is presented.

Table: 4.7

Investment on Government Bond to Total Deposit Ratio*Ratio in %*

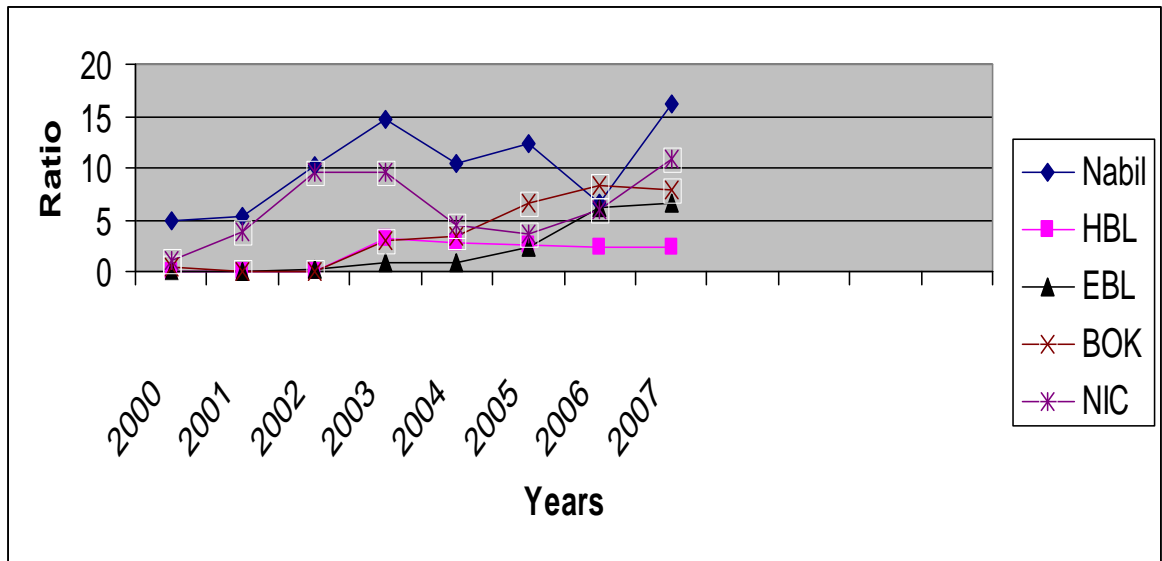
Year	Banks				
	Nabil	HBL	EBL	BOK	NIC
2000	4.91	0	0	0.37	0.98
2001	5.31	0	0	0	3.91
2002	10.2	0	0.27	0	9.5
2003	14.59	3.10	0.92	3.03	9.57
2004	10.49	2.80	0.92	3.38	4.4
2005	12.39	2.57	2.24	6.57	3.63
2006	6.68	2.3	6.1	8.38	5.87
2007	16.12	2.3	6.7	7.78	10.80
Mean	10.08	1.63	2.14	3.68	6.08
S.D.	3.41	1.26	2.01	2.89	2.78
C.V.	0.34	0.77	0.93	0.78	0.46

Source: Appendix VII

Investment in government bond to total deposit ratio is presented in table: 4.7. Nabil has the highest average ratio of 10.08%. The highest ratio of Nabil is 16.12% in the year 2007 and the lowest ratio is 4.91 in the year 2000. The ratios are dispersed by 3.41% from the average ratio. HBL has not invested in government bond in the first 3 years of study period. Similarly, EBL has not invested in first 2 years. BOK has average 3.68% investment in government bond. The bank has not invested in 2001 and 2002. NIC has average ratio of 6.08% investment in government bond. The highest ratio of the bank is 10.80% in 2007. With the help of the figure: 4.7, these facts can be seen more clearly.

Figure: 4.7

Investment on Government Bond to Total Deposit Ratio



4.2.8 Investment on Treasury Bills to Total Investment on Government Securities Ratio

This ratio measures the portion of investment on short-term government securities to total risk free investment. The ratio is obtained by dividing investment on treasury bills by total investment on government bond. To measure the ratio following formula is used.

Investment on Treasury Bills to Total Investment on Government Securities Ratio

$$= \frac{\text{Investment on Treasury Bills}}{\text{Total Investment on Government Securities}} \times 100$$

Comparative analysis of investment on treasury bill to total investment on government securities ratio of the sample banks, Nabil, HBL, EBL, BOK and NIC is presented in the table: 4.8.

Table: 4.8

Investment on Treasury Bills to Total Investment on Government Securities Ratio

Ratios in %

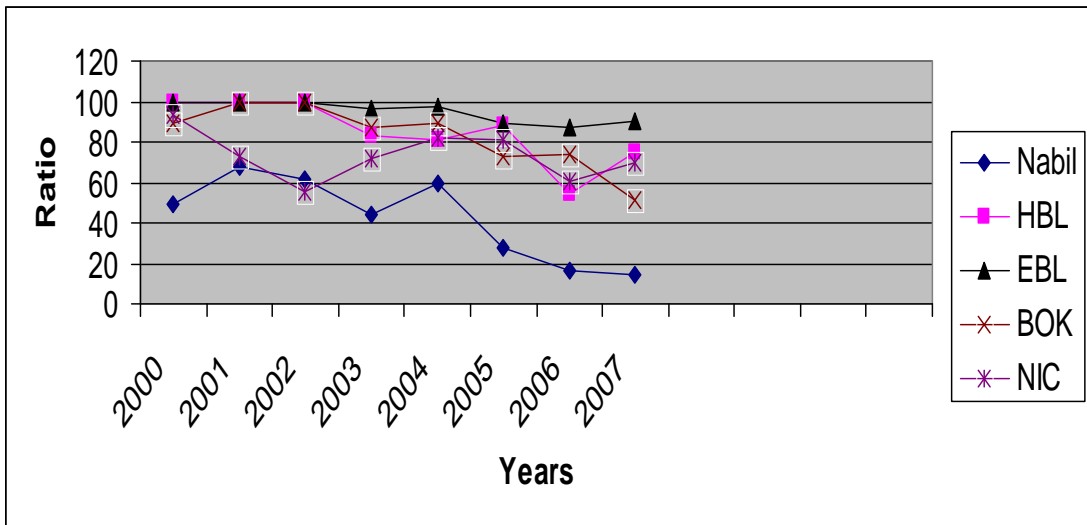
Year	Banks				
	Nabil	HBL	EBL	BOK	NIC
2000	49.17	100	100	89.54	93.37
2001	67.97	100	100	100	72.63
2002	61.09	100	99.03	100	55.83
2003	44.40	83.39	96.12	87.62	72.01
2004	59.72	81.06	96.99	88.97	81.67
2005	27.53	88.12	89.21	72.65	81.04
2006	16.02	54.07	86.87	73.79	60.64
2007	13.89	74.67	89.8	51.02	69.63
Mean	42.47	85.16	94.75	82.95	73.35
S.D.	16.51	15.25	4.82	14.08	11.31
C.V.	0.38	0.18	0.05	0.17	0.15

Source: Appendix VIII

Table: 4.8 is presented to show the ratio of investment in treasury bills to total investment on government securities. The average ratio of EBL is 94.75%, which is the highest ratio among the banks under study. The minimum ratio of HBL is 54.07% in year 2004. Nabil has invested in average 42.47% in treasury bills on total investment on government securities. The highest and lowest ratio of the bank is 67.97% in the year 2001 and 13.89% in the year 2007 respectively. The ratios are dispersed by 16.51% from the average ratio. BOK has the average ratio of 82.95%. The ratios are scattered by 14.08% from the average ratio. Similarly NIC has average ratio of 73.35%. In the year 1999, it has 100% ratio and the lowest ratio of the bank is 55.83% in the year 2002. The ratios are dispersed by 11.31% from the average ratio. With the help of the following figure, it can be seen very clearly.

Figure: 4.8

Investment on Treasury Bill to Total Investment on Government Securities Ratio



4.2.9 Investment on Government Bond to Total Investment on Government Securities Ratio

This ratio is used to measure the percentage of investment on long-term government securities on total government investment. The ratio is obtained by dividing investment on government bond by total investment on government securities.

Investment on Government Bond to Total Investment on Government Securities Ratio

$$= \frac{\text{Investment on Government Bond}}{\text{Total Investment on Government Securities Ratio}} \times 100$$

Comparative analysis of investment on government bond to total investment on government securities ratio of the sample banks, Nabil, HBL, EBL, BOK and NIC is presented in the table: 4.9.

Table: 4.9

Investment on Government Bond to Total Investment on Government Securities Ratio

Ratio in %

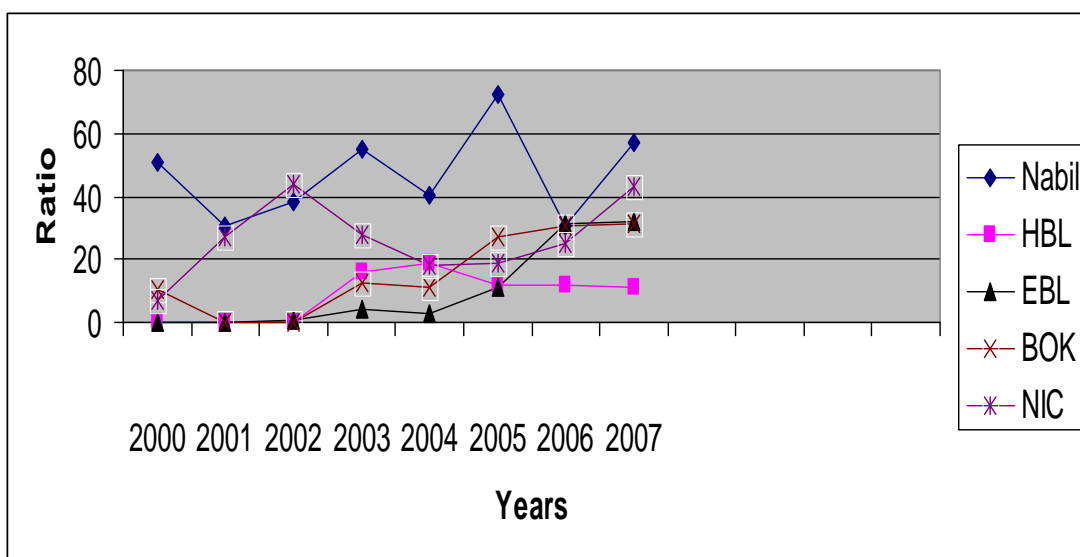
Year	Banks				
	Nabil	HBL	EBL	BOK	NIC
2000	50.83	0	0	10.46	6.63
2001	30.75	0	0	0	27.37
2002	38.05	0	0.97	0	44.17
2003	54.63	16.30	3.88	12.38	27.99
2004	40.28	18.58	3.01	11.03	18.33
2005	72.47	11.66	10.79	27.35	18.96
2006	30.62	11.63	31.1	30.75	24.96
2007	56.70	11.03	32.3	31.52	43.40
Mean	46.79	8.65	10.25	15.43	26.47
S.D.	14.00	7.09	10.31	10.45	10.62
C.V.	0.30	0.82	1.00	0.67	0.40

Source: Appendix IX

Table: 4.9 is presented to show the percentage of investment in government bond on total investment on government securities. HBL and EBL have not invested in government bond in the first 3 and 2 years of the study period respectively. So the ratios are 0 in these years. Nabil has invested 46.79% in average on government bond. The highest ratio is 72.47% in 2005 and the lowest ratio is 30.62% in 2006. BOK has not invested in government bond in the years 2001 and 2002. The highest ratio is 31.52% in the year 2007. The average ratio of the bank is 15.43%. The highest ratio of NIC is 44.17% in year 2002. Average ratio of the bank is 26.47%. These facts are presented graphically in figure: 4.9 to make clearer.

Figure: 4.9

Investment on Government Bond to Total Investment on Government Securities Ratio



4.2.10 Investment on Treasury Bills to Short-term Investment Ratio

The ratio measures the percentage of investment on short-term risk less security i.e. treasury bills to total short-term investment. The ratio is obtained by dividing the investment on treasury bills by short-term investment.

Investment on Treasury Bills to Short-term Investment Ratio

$$= \frac{\text{Investment on Treasury Bills}}{\text{Short-term Investment}} \times 100$$

Comparative analysis of investment on treasury bills to short-term investment ratio of the sampled banks is presented in the table: 4.10

Table: 4.10

Investment on Treasury Bills to Short-term Investment Ratio*Ratio in %*

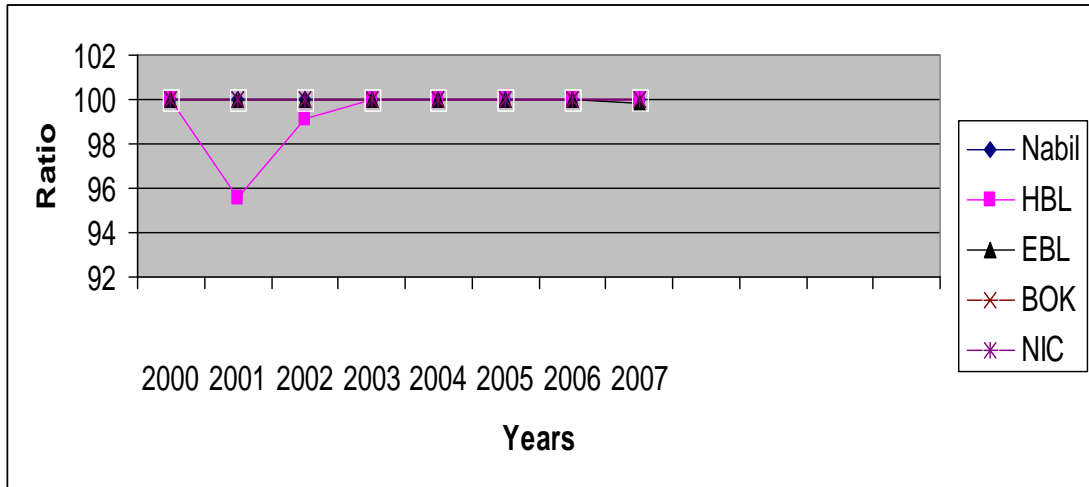
Year	Banks				
	Nabil	HBL	EBL	BOK	NIC
2000	100	100	100	100	100
2001	100	95.59	100	100	100
2002	100	99.17	100	100	100
2003	100	100	100	100	100
2004	100	100	100	100	100
2005	100	100	100	100	100
2006	99.99	100	100	99.97	100
2007	100	99.99	99.79	100	100
Mean	99.99	99.34	99.97	99.99	100
S.D.	0.5	1.14	0.9	0.9	0.00
C.V.	0.005	0.01	0.009	0.009	

Source: Appendix X

Table: 10 is presented to show the percentage of investment in treasury bills on total investment on short term investment. It is seen that every bank has invested in treasury bills only among the short-term securities. Nabil Has invested 99.99 in the year 2006, HBL 95.59 in the year 2001, 99.97 in the year 2002 and 99.99 in the year 2007, EBL has 99.79 in the year 2007 and in the year 2006 BOK has invested 99.97. Except these every bank has invested 100% of short-term securities in treasury bills. The facts are presented in figure: 4.10 to make clearer.

Figure: 4.10

Investment on Treasury Bill to Short-term Investment Ratio



4.3 Least Square Linear Trend Analyses

Trend analysis has been a very useful and commonly applied statistical tool to forecast the future events in quantitative terms. On the basis of tendencies in the dependent variables in the past periods, the future trend is predicted. This analysis takes the historical data as the basis for forecasting. This method of forecasting the future trend is based on the assumptions that the past tendencies of the variable are repeated in the future, i.e. the past events affect the future events significantly.

The future trend is forecasted by using the following formula:

$$Y_c = a + bx$$

Where,

Y_c = the dependent variable

a = the origin i.e. arithmetic mean.

b = the slope coefficient i.e. rate of change

x = the independent variable i.e. year

4.3.1 Trend Analysis of Investment on Government Securities to Total Investment Ratio

Under this topic, an effort has been made to calculate the trend value of investment on government securities to total investment ratio of Nabil, HBL, EBL, BOK and NIC comparatively under seven years study period and project the trend for next two years.

The table: 4.11 presents the trend values of investment on government securities to total investment ratio.

Table: 4.11

Trend of Investment on Government Securities to Total Investment Ratio

Years	Banks				
	Nabil	HBL	EBL	BOK	NIC
2000	80.44	77.94	77.58	89.37	97.09
2001	73.56	67.49	83.37	87.99	92.68
2002	66.68	57.04	89.16	86.61	88.27
2003	59.8	46.59	94.95	85.23	83.86
2004	52.92	36.14	100.74	83.85	79.45
2005	46.04	25.69	106.53	82.47	75.04
2006	39.16	15.24	112.32	81.09	70.63
2007	32.28	4.79	118.11	79.71	66.22
2008	25.4	-5.67	123.9	78.33	61.81
2009	18.52	-16.12	129.69	76.95	57.4
Mean (a)	56.36	41.37	97.85	84.54	81.66
Rate of Change (b)	-6.88	-10.45	5.79	-1.38	-4.41
Trend Equation	56.36-6.88x	41.37-10.45x	97.85+5.79x	84.54-1.38x	81.66-4.41x

From the table: 4.11, it is found that the investment on government securities to total investment ratio of Nabil, HBL, EBL and NIC are in decreasing trend

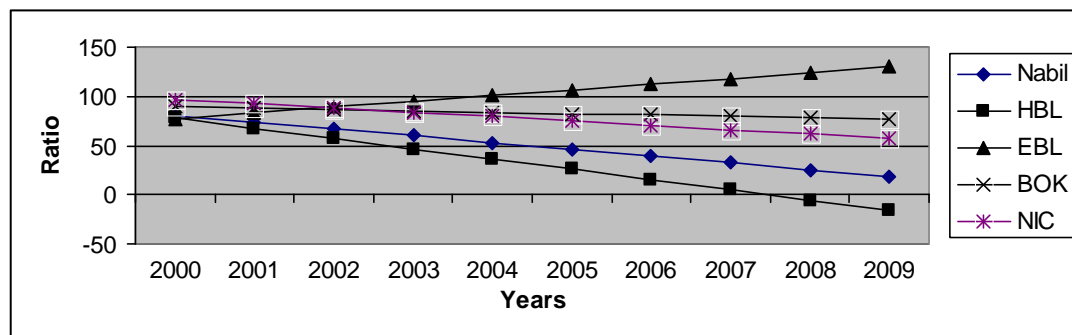
while the ratio of EBL are in increasing trend. The rate of change of HBL is high and negative also (i.e. $b=-10.45$). The ratio of change of BOK is the lowest among the sample banks (i.e. $b=1.38$). The trend EBL is increasing by the ratio of 5.79%. The trend line of HBL is heading negatively from the year 2008 and onward.

If other things remain same, the investment on government securities to total investment ratio of Nabil, HBL, EBL, BOK and NIC will be 18.52%, -16.12%, 129.69%, 76.95% and 57.4% respectively in the year 2009.

Trend line of investment on government securities to total investment ratio of sampled banks is presented in the figure: 4.11.

Figure: 4.11

Trend of Investment on Government Securities to Total Investment Ratio



4.3.2 Trend Analysis of Investment on Treasury Bill to Total Investment Ratio

Under this topic, an attempt has been made to calculate the trend value of investment on treasury bill to total investment ratio of Nabil, HBL, EBL, BOK and NIC comparatively under seven years study period and project the trend for next two years.

The following table presents the trend values of investment on treasury bills to total investment ratio.

Table: 4.12

Trend of Investment on Treasury Bills to Total Investment Ratio

Years	Banks				
	Nabil	HBL	EBL	BOK	NIC
2000	48.24	77.12	77.12	80.49	98.12
2001	41.9	65.57	81.7	78.43	92.17
2002	35.56	54.02	86.28	76.37	86.22
2003	29.22	42.47	90.86	74.31	80.27
2004	22.88	30.92	95.44	72.25	74.32
2005	16.54	19.37	100.02	70.19	68.37
2006	10.2	7.82	104.6	68.13	62.42
2007	3.86	-3.74	109.18	66.07	56.47
2008	-2.48	-15.29	113.76	64.01	50.52
2009	-8.82	-26.84	118.34	61.95	44.57
Mean (a)	26.05	36.69	93.15	73.28	77.30
Rate of Change (b)	-6.34	-11.55	4.58	-2.06	-5.95
Trend Equation	26.05- 6.34x	36.69- 11.55x	93.15 +4.58x	73.28- 2.06x	77.30- 5.95x

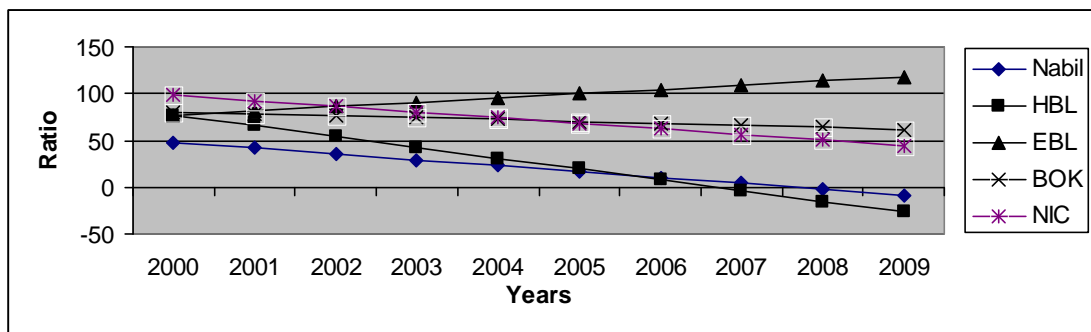
Table: 4.12 reveals the trend of investment on treasury bill to total investment ratio of the sampled banks. In this table, it has been found that the investment on treasury bill to total investment ratio of Nabil, HBL, BOK and NIC are in decreasing trend. The ratio of HBL is rapidly sloping down by the rate of – 11.55%. The ratio of BOK is sloping down slowly by the rate of –2.06%. The investment on treasury bills to total investment to total investment ratio of Nabil and NIC is fluctuating in decreasing trend by the rate of 6.34% and 5.95% respectively. The trend lines of Nabil and HBL are heading negatively from the year 2008 and 2007 respectively. The ratios of EBL are in increasing trend by the rate of 4.58%.

If other things remain same, the investment on treasury bills to total ratio of Nabil, HBL, EBL, BOK and NIC will be -8.82%, -26.84%, 118.34%, 61.95% and 44.57% respectively in the year 2009.

Trend line of investment on treasury bills to total investment ratio of sampled banks is presented below.

Figure: 4.12

Trend of Investment on Treasury Bills to Total Investment Ratio



4.3.3 Trend Analysis of Investment on Government Bond to Total Investment Ratio

Under this topic, an effort has been made to calculate the trend value of investment on government bond to total investment ratio of Nabil, HBL, EBL, BOK and NIC comparatively under seven years study period and project the trend for next two years.

The table: 4.13 shows the trend values of investment on government bond to total investment ratio.

Table: 4.13

Trend of Investment on Government Bond to Total Investment Ratio

Years	Banks				
	Nabil	HBL	EBL	BOK	NIC
2000	32.05	0.71	0.47	8.89	13.71
2001	31.49	1.8	1.68	9.56	15.75
2002	30.93	2.89	2.89	10.23	17.79
2003	30.37	3.98	4.1	10.9	19.83
2004	29.81	5.07	5.31	11.57	21.87
2005	29.25	6.16	6.52	12.24	23.91
2006	28.69	7.25	7.73	12.91	25.95
2007	28.13	8.34	8.94	13.58	27.99
2008	27.57	9.43	10.15	14.25	30.03
2009	27.01	10.52	11.36	14.92	32.07
Mean (a)	30.09	4.53	4.71	11.24	20.85
Rate of Change (b)	-0.56	1.09	1.21	0.67	2.04
Trend Equation	30.09-0.56x	4.53+1.09x	4.71+1.21x	11.24+0.67x	20.85+2.04x

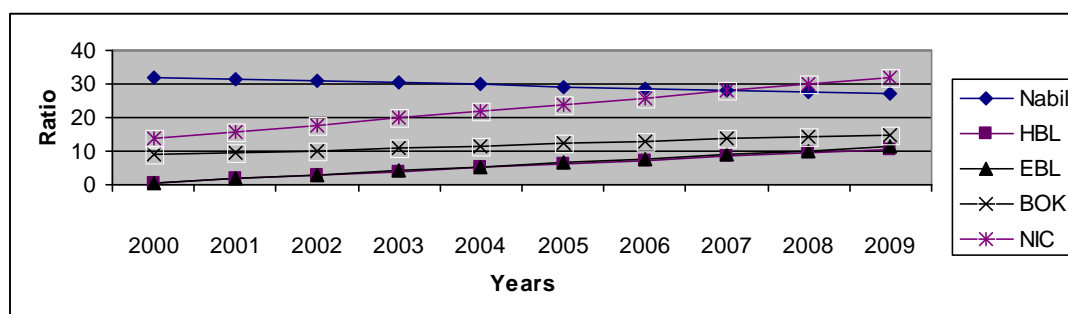
In table: 4.13, the trend value of investment on government bond to total investment ratios of the banks under study is presented. From this table, it is found that the ratios of HBL, EBL BOK and NIC are fluctuating in increasing trend while the ratios of Nabil are in decreasing trend. The rate of change of the ratio of NIC is the highest among the sampled banks. The ratio of EBL is sloping upward slowly by the rate of 0.67%.

If other things remain same, the investment on bond to total investment ratio of Nabil, HBL, EBL, BOK and NIC will be 27.01%, 10.52%, 11.36%, 14.92% and 32.07% respectively in the year 2009.

Trend line of investment on government bond to total investment ratio of sampled banks is presented in the figure: 4.13.

Figure: 4.13

Trend of Investment on Government Bond to Total Investment Ratio



4.3.4 Trend Analysis of Total Investment to Total Deposit Ratio

Under this topic, an attempt has been made to calculate the trend value of total investment to total deposit ratio of Nabil, HBL, EBL, BOK and NIC comparatively under seven years study period and project the trend for next two years.

The table: 4.14 presents the trend values of total investment to total deposit ratio.

Table: 4.14

Trend of Total Investment to Total Deposit Ratio

Years	Banks				
	Nabil	HBL	EBL	BOK	NIC
2000	25.05	20.49	18.51	8.93	16.45
2001	29.54	26.99	20.37	13.39	19.89
2002	34.03	33.49	22.23	17.85	23.33
2003	38.52	39.99	24.09	22.31	26.77
2004	43.01	46.49	25.95	26.77	30.21
2005	47.5	52.99	27.81	31.23	33.65
2006	51.99	59.49	29.67	35.69	37.09
2007	56.48	65.99	31.53	40.15	40.53
2008	60.97	72.49	33.39	44.61	43.97
2009	65.46	78.99	35.25	49.07	47.41
Mean (a)	40.77	43.24	25.02	24.54	28.49
Rate of Change (b)	4.49	6.5	1.86	4.46	3.44
Trend Equation	40.77+4.49x	43.24+6.50x	25.02+1.86x	24.54+4.46x	28.49+3.44x

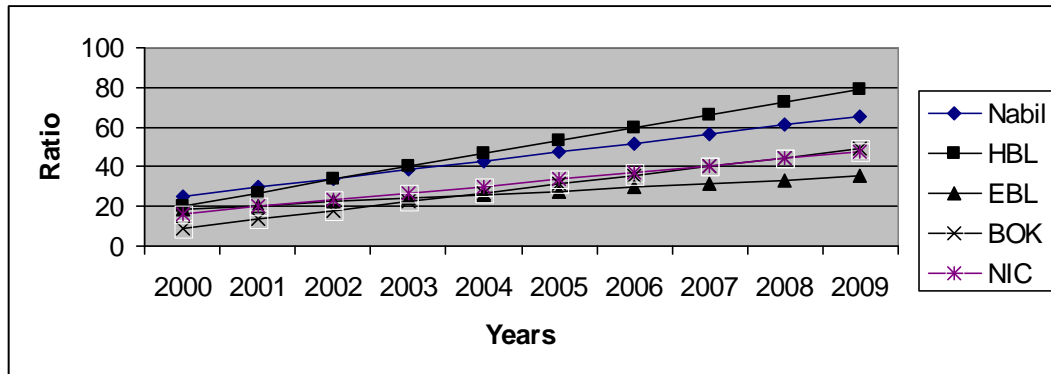
From the table: 4.14, it is found that total investment to deposit ratio of sampled banks are in increasing trend of fluctuation. Among the banks, the ratio of HBL is increasing by the highest rate of change (i.e. $b=6.5\%$). The rate of change of EBL is the lowest (i.e. $b=1.86\%$). The rate of change of the ratio of Nabil, BOK and NIC are 4.49%, 4.46% and 3.44% respectively.

If other things remain same, the total investment to total deposit ratio of Nabil, HBL, EBL, BOK and NIC will be 65.46%, 78.99%, 35.25%, 49.07% and 47.41% respectively in the year 2009.

Trend line of total investment to total deposit ratio of sampled banks is presented in the figure: 4.14.

Figure: 4.14

Trend of Total Investment to Total Deposit Ratio



4.3.5 Trend Analysis of Investment on Government Securities to Total Deposit Ratio

Under this topic, an effort has been made to calculate the trend value of investment on government securities to total deposit ratio of Nabil, HBL, EBL, BOK and NIC comparatively under seven years study period and project the trend for next two years.

The table: 4.15 describes the trend values of investment on government securities to total deposit ratio.

Table: 4.15

Trend of Investment on Government Securities to Total Deposit Ratio

Years	Banks				
	Nabil	HBL	EBL	BOK	NIC
2000	15.78	11.98	14.49	7.83	15.74
2001	18.79	15.63	17.37	12.07	18.39
2002	21.8	19.28	20.25	16.31	21.04
2003	24.81	22.93	23.13	20.55	23.69
2004	27.82	26.58	26.01	24.79	26.34
2005	30.83	30.23	28.89	29.03	28.99
2006	33.84	33.88	31.77	33.27	31.64
2007	36.85	37.53	34.65	37.51	34.29
2008	39.86	41.18	37.53	41.75	36.94
2009	42.87	44.83	40.41	45.99	39.59
Mean (a)	26.32	24.76	24.57	22.67	25.02
Rate of Change (b)	3.01	3.65	2.88	4.24	2.65
Trend Equation	26.32+3.01x	24.76+3.65zx	24.57+2.88x	22.67+4.24x	25.02+2.65x

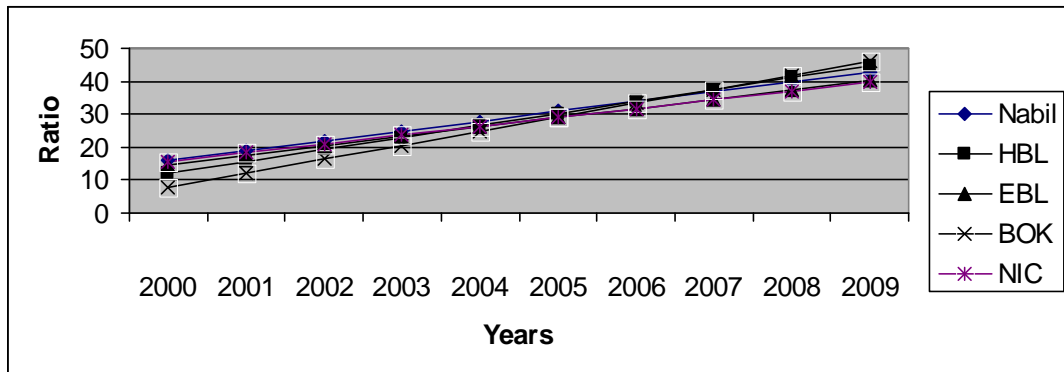
From the table: 4.15, it has been found the fact that the investment on government securities to total deposit ratio of all the sampled banks are in increasing trend. This fact implies that the banks are utilizing their deposits by investing on government securities. Comparatively the rate of change of BOK (i.e. $b=4.24\%$) is the highest among all the banks under study, it means BOK is efficient to invest in government securities significantly.

If other things remain same, the investment on government securities to total deposit ratio of Nabil, HBL, EBL, BOK and NIC will be 42.87%, 44.83%, 40.41%, 45.99% and 39.59% respectively in the year 2009.

Trend line of investment on government securities to total deposit ratio of sampled banks is presented in the figure: 4.15.

Figure: 4.15

Trend of Investment on Government Securities to Total Deposit Ratio



4.3.6 Trend Analysis of Investment on Treasury Bills to Total Deposit Ratio

Under this topic, an effort has been made to calculate the trend value of investment on treasury bills to total deposit ratio of Nabil, HBL, EBL, BOK and NIC comparatively under seven years study period and project the trend for next two years.

The table: 4.16 describes the trend values of investment on treasury bills to total deposit ratio.

Table: 4.16

Trend of Investment on Treasury Bills to Total Deposit Ratio

Years	Banks				
	Nabil	HBL	EBL	BOK	NIC
2000	9.44	11.67	14.27	7.08	16.43
2001	9.92	12.72	16.83	10.16	18.06
2002	10.4	13.77	19.39	13.24	19.69
2003	10.88	14.82	21.95	16.32	21.32
2004	11.36	15.87	24.51	19.4	22.95
2005	11.84	16.92	27.07	22.48	24.58
2006	12.32	17.97	29.63	25.56	26.21
2007	12.8	19.02	32.19	28.64	27.84
2008	13.28	20.07	34.75	31.72	29.47
2009	13.76	21.12	37.31	34.8	31.1
Mean (a)	11.12	15.35	23.23	17.86	22.14
Rate of Change (b)	0.48	1.05	2.56	3.08	1.63
Trend Equation	11.12+0.48x	15.35+1.05x	23.23+2.56x	17.86+3.08x	22.14+1.63x

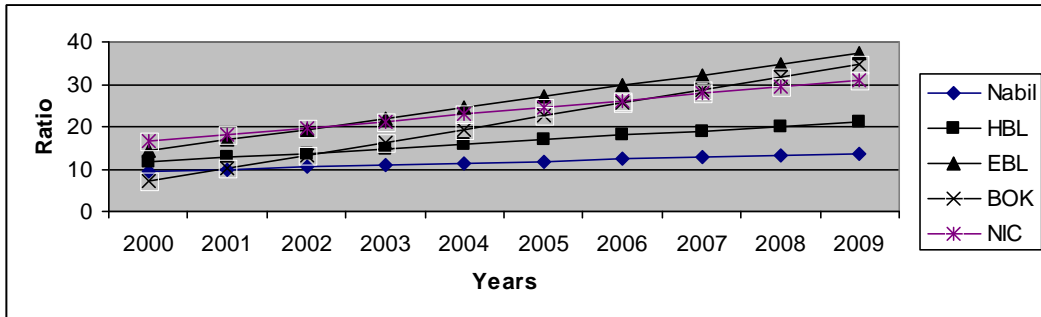
The table: 4.16 reveals that the investment on treasury bill to total deposit ratio of all sample banks is in increasing trend. Among the banks, the ratio of BOK is the highest rate of change (i.e. $b=3.08\%$). The ratio of HBL is increasing by the lowest rate of change (i.e. $b=0.48\%$) among the banks. This increasing trend implies that the banks are investing their deposit in risk free short-term investment securities significantly.

If other things remain same, the investment on treasury bills to total deposit ratio of Nabil, HBL, EBL, BOK and NIC will be 13.76%, 21.12%, 37.31%, 34.8% and 31.1% respectively in the year 2009.

Trend line of investment on treasury bills to total deposit ratio of sampled banks is presented in the figure: 4.16.

Figure: 4.16

Trend of Investment on Treasury Bills to Total Deposit Ratio



4.3.7 Trend Analysis of Investment on Government Bond to Total Deposit Ratio

Under this topic, an effort has been made to calculate the trend value of investment on government bond to total deposit ratio of Nabil, HBL, EBL, BOK and NIC comparatively under seven years study period and project the trend for next five years.

The table: 4.17 describes the trend values of investment on government bond to total deposit ratio.

Table: 4.17

Trend of Investment on Government bond to Total Deposit Ratio

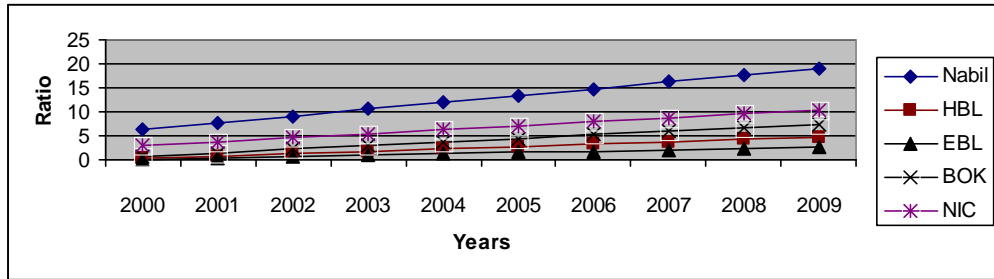
Years	Banks				
	Nabil	HBL	EBL	BOK	NIC
2000	6.27	0.33	0.12	0.74	2.89
2001	7.69	0.82	0.4	1.48	3.73
2002	9.11	1.31	0.68	2.22	4.57
2003	10.53	1.8	0.96	2.96	5.41
2004	11.95	2.29	1.24	3.7	6.25
2005	13.37	2.78	1.52	4.44	7.09
2006	14.79	3.27	1.8	5.18	7.93
2007	16.21	3.76	2.08	5.92	8.77
2008	17.63	4.25	2.36	6.66	9.61
2009	19.05	4.74	2.64	7.4	10.45
Mean (a)	11.24	2.05	1.10	3.33	5.83
Rate of Change (b)	1.42	0.49	0.28	0.74	0.84
Trend Equation	11.24+1.42x	2.05+0.49x	1.10+0.28x	3.33+0.74x	5.83+0.84x

From the table: 4.17, it is found that investment on government bond to total deposit ratio is fluctuating in increasing trend for all the banks under study. The rate of change of the ratio of Nabil is the highest rate (i.e. $b=1.42\%$) among the banks. The lowest rate of change is 0.28% of EBL, which means the slowly increasing trend. The ratio of NIC is increasing by the rate of 0.84% . These facts imply that the banks are utilizing their deposits on government bond significantly.

Trend line of investment on government bond to total deposit ratio of sampled banks is presented in the figure: 4.17.

Figure: 4.17

Trend of Investment on government bond to Total Deposit Ratio



4.3.8 Trend Analysis of Investment on Treasury Bill to Total Investment on Government Securities

Under this topic, an effort has been made to calculate the trend value of investment on treasury bill to total investment on government securities ratio of Nabil, HBL, EBL, BOK and NIC comparatively under seven years study period and project the trend for next five years.

The table: 4.18 describes the trend values of investment on treasury bill to total investment on government securities ratio.

Table: 4.18

Trend of Investment on Treasury Bill to Investment on Government Securities Ratio

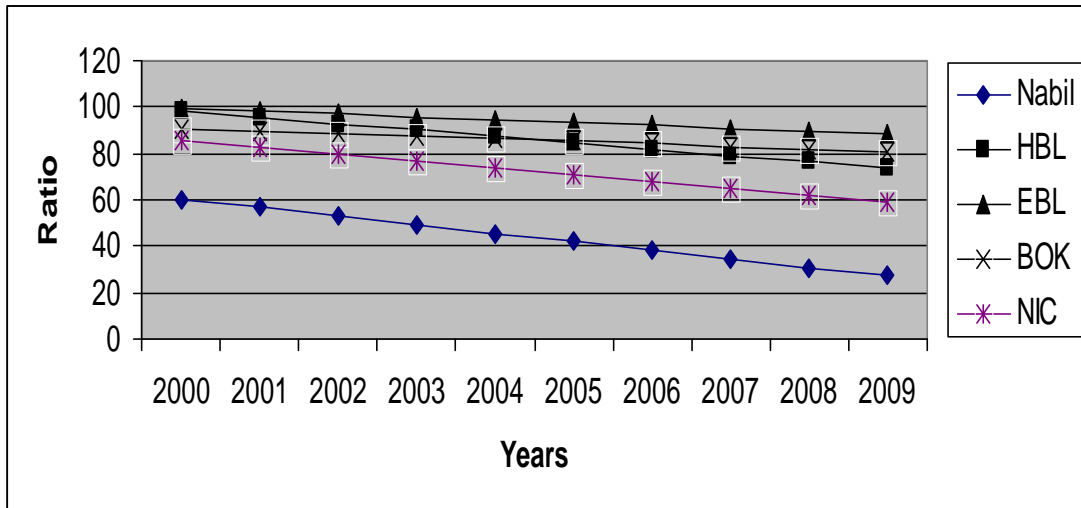
Years	Banks				
	Nabil	HBL	EBL	BOK	NIC
2000	60.32	98.14	99.52	90.57	85.29
2001	56.64	95.43	98.29	89.5	82.4
2002	52.96	92.72	97.06	88.43	79.51
2003	49.28	90.01	95.83	87.36	76.62
2004	45.6	87.3	94.6	86.29	73.73
2005	41.92	84.59	93.37	85.22	70.84
2006	38.24	81.88	92.14	84.15	67.95
2007	34.56	79.17	90.91	83.08	65.06
2008	30.88	76.46	89.68	82.01	62.17
2009	27.2	73.75	88.45	80.94	59.28
Mean (a)	47.44	88.06	95.02	86.83	75.18
Rate of Change (b)	-3.68	-2.71	-1.23	-1.07	-2.89
Trend Equation	47.44-3.68x	88.06-2.71x	95.02-1.23x	86.83-1.07x	75.18-2.89x

Table: 4.18 is presented to show the trend value of investment on treasury bill to total investment on government securities ratio. From this table, it is revealed that the ratios of all the sampled banks are fluctuating in decreasing trend. The ratio of Nabil is decreasing highly by the rate of 3.68%. The ratio of NIC is decreasing by 2.89%. The lowest rate of change among the banks is – 1.07% of the BOK.

Trend line of investment on treasury bills to total investment on government securities ratio of sampled banks is presented in figure: 4.18.

Figure: 4.18

Trend of Investment on Treasury Bills to Total Investment on Government Securities Ratio



4.3.9 Trend Analysis of Investment on Government Bond to Total Investment on Government Securities

Under this topic, an attempt has been made to calculate the trend value of investment on government bond to total investment on government securities ratio of Nabil, HBL, EBL, BOK and NIC comparatively under seven years study period and project the trend for next five years.

The table: 4.19 describes the trend values of investment on government bond to total investment on government securities ratio.

Table: 4.19

Trend of Investment on Government Bond to Investment on Government Securities Ratio

Years	Banks				
	Nabil	HBL	EBL	BOK	NIC
2000	39.34	1.83	0.49	9.44	14.71
2001	42.99	4.49	1.72	10.51	17.6
2002	46.64	7.15	2.95	11.58	20.49
2003	50.29	9.81	4.18	12.65	23.38
2004	53.94	12.47	5.41	13.72	26.27
2005	57.59	15.13	6.64	14.79	29.16
2006	61.24	17.79	7.87	15.86	32.05
2007	64.89	20.45	9.1	16.93	34.94
2008	68.54	23.11	10.33	18	37.83
2009	72.19	25.77	11.56	19.07	40.72
Mean (a)	52.12	11.14	4.80	13.19	24.83
Rate of Change (b)	3.65	2.66	1.23	1.07	2.89
Trend Equation	52.12+3.65x	11.14+2.66x	4.80+1.23x	13.19+1.07x	24.83+2.89x

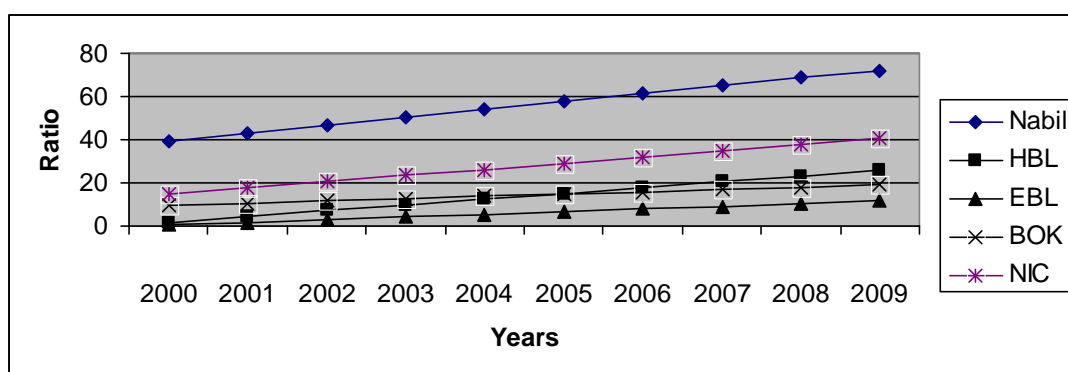
From the table 4.19 shows that the investment on government bond to total investment on government securities ratio of Nabil, HBL, EBL BOK and NIC is in increasing trend. The ratio of Nabil is in the highest fluctuation among (i.e. b=3.65%). The rate of change of HBL, EBL, BOK and NIC are 2.66%, 1.23%, 1.07% and 2.89% respectively.

If other things remain same, the investment on government bond to total investment on government securities ratio of Nabil, HBL, EBL, BOK and NIC will be 72.19%, 25.77%, 11.56%, 19.07% and 40.72% respectively in the year 2009.

Trend line of investment on government bond to total investment on government securities ratio of sampled banks is presented in figure: 4.19.

Figure: 4.19

Trend of Investment on Government Bond to Total Investment on Government Securities Ratio



4.4 Analysis of Yield Rate of Government Securities

Under this topic, an effort is made to analyze the tendency of the interest rates of the various government securities prevailing in Nepal. Trend analysis of interest rate of 91-days treasury bills, 364-days treasury bills, national saving certificates and development bonds according to historical data of seven-years period is presented below.

4.4.1 Trend Analysis of Interest Rate of 364-days Treasury Bills

In this topic, an attempt has been made to analyze the interest rate of 364-days treasury bills. Actual interest rate of 364-days treasury bills, and its trend value is presented in following table. Trend value of the interest rate for coming two years period is also forecasted in the table: 4.20.

Table: 4.20

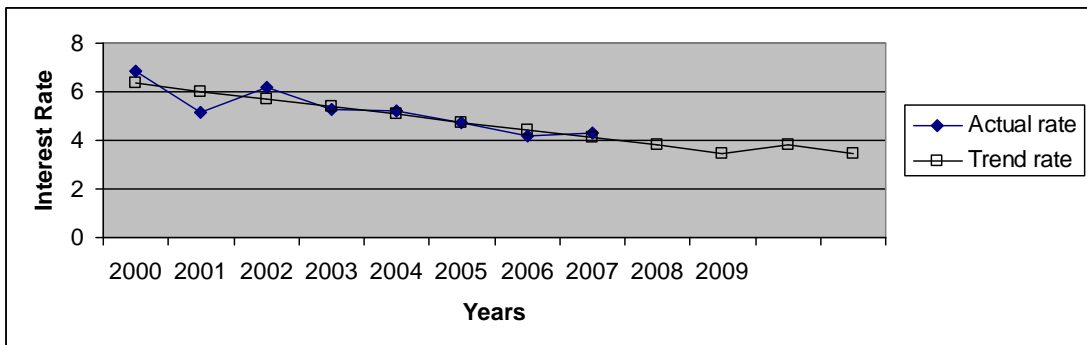
Trend of Interest Rate of 364-days Treasury Bills

Years	Actual rate	Trend rate
2000	6.86	5.71
2001	5.13	5.39
2002	6.16	5.07
2003	5.26	4.75
2004	5.2	4.43
2005	4.71	4.11
2006	4.2	3.79
2007	4.32	3.47
2008		3.15
2009		2.83
Mean (a)		5.23
Standard Deviation		0.78
Rate of Change (b)		-0.32
Trend Equation		5.23-0.32x

From the table: 4.20, it is revealed that the interest rate of 364-days treasury bills is in average 5.23%. The interest rates are dispersed from the average rate by 0.78%. The highest interest rate was 6.86% in the year 1998 and the lowest rate was 4.2% in year 2004. The trend value of the interest rate shows the decreasing trend of fluctuation. The rate of decrease of the interest rate is -0.32. If other thing remains the same, the interest rate of the 364-days treasury bills will be 2.83% in the year 2009. These facts are presented in the figure: 4.20 to make clear.

Figure: 4.20

Trend of Interest Rate of 364-days Treasury Bills



4.4.2 Trend Analysis of Interest Rate of 91-days Treasury Bills

In this topic, an effort has been made to analyze the interest rate of 91-days treasury bills. Actual interest rate of 91-days treasury bills, and its trend value is presented in following table. Trend value of the interest rate for coming five years period is also forecasted in the table: 4.21.

From the table: 4.21, it is depicted that the mean interest rate of 91-days treasury bills is 3.64%. The standard deviation of 0.88% shows that the rates are scattered at the rate of 0.88% from the average rate. The highest rate is seen to be 4.96% in the year 2001 and the lowest rate is 2.33% in the year 1999. From the trend analysis of the interest rate, it is seen that the interest rate of 91-days treasury bills is fluctuating in decreasing rate. But the rate of fluctuation is nominal i.e. 0.09%. If the other things remaining the same the interest rate of 91-day treasury bill will be 2.97% in the year 2009.

Table: 4.21

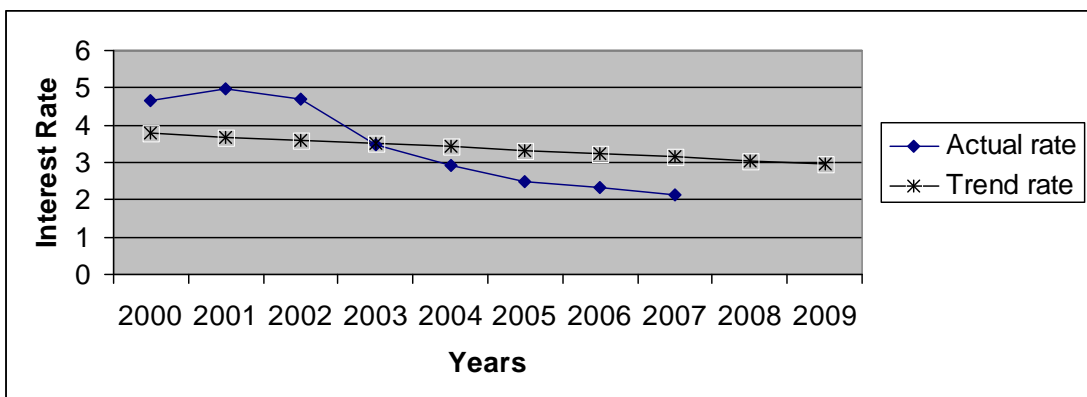
Trend of Interest Rate of 91-days Treasury Bills

Years	Actual rate	Trend rate
2000	4.66	3.78
2001	4.96	3.69
2002	4.71	3.60
2003	3.48	3.51
2004	2.93	3.42
2005	2.5	3.33
2006	2.32	3.24
2007	2.12	3.15
2008		3.06
2009		2.97
Mean (a)		3.42
Standard Deviation		0.88
Rate of Change (b)		-0.09
Trend Equation		3.42-0.09x

These facts are shown in the figure: 4.21 to make clearer.

Figure: 4.21

Trend of Interest Rate of 91-days Treasury Bills



4.4.3 Trend Analysis of Interest Rate of National Saving Certificate

In this topic, an effort has been made to analyze the interest rate of National Saving Certificate. Actual interest rate of National Saving Certificate of the study period and trend value is presented in following table. Trend value of the interest rate for coming five years period is also forecasted in the table: 4.22.

Table: 4.22

Trend of Interest Rate of National Saving Certificate

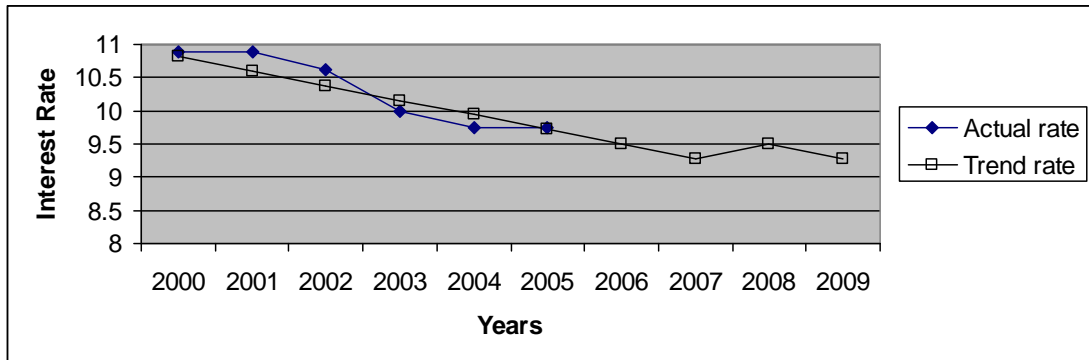
Years	Actual rate	Trend rate
2000	10.88	10.82
2001	10.88	10.6
2002	10.63	10.38
2003	10	10.16
2004	9.75	9.94
2005	9.75	9.72
2006		9.5
2007		9.28
2008		9.06
2009		8.84
Mean (a)		
Standard Deviation		0.46
Rate of Change (b)		-0.22
Trend Equation		10.49-0.22x

From the table: 4.22, it is depicted that the interest rate of the national saving certificate is in average 10.49%. The interest rates are dispersed from their mean by 0.46%. The highest rate of interest is 11.13% in 1998 and the lowest is 9.75% in the year 2004 and 2005. By the analysis of trend, it is seemed that

the interest rate of national saving certificate is in decreasing trend. The rate of change is 0.22% negative. If other things remaining the same the rate of interest of the national saving certificate will be 8.84% in the year 2009. These facts are shown in the figure: 4.22 to make clear.

Figure: 4.22

Trend of Interest Rate of National Saving Certificate



4.4.4 Trend Analysis of Interest Rate of Development Bond

In this topic, an attempt has been made to analyze the interest rate of development bond. Actual interest rate of development bond during the study period and trend value is presented in following table. Trend value of the interest rate for coming five years period is also forecasted in the table: 4.23.

From the table: 4.23, it is revealed that the interest rate of development bond is in average 6.31% during the study period. The interest rates are scattered from the average value by the rate of 0.81%. The highest rate of interest of the government bond is 7.5% in the first two years of the study period and the lowest rate of interest is 5.5% in the last 4 years of the study period. From the trend analysis of the interest rate of the development bond, it is depicted that the trend of interest rate of the development bond is in decreasing trend. The rate of decreasing is 0.35% (i.e. $b=-0.35$). If the other things remaining the same, the interest rate of development bonds will be 3.69% in the year 2009.

Table: 4.23

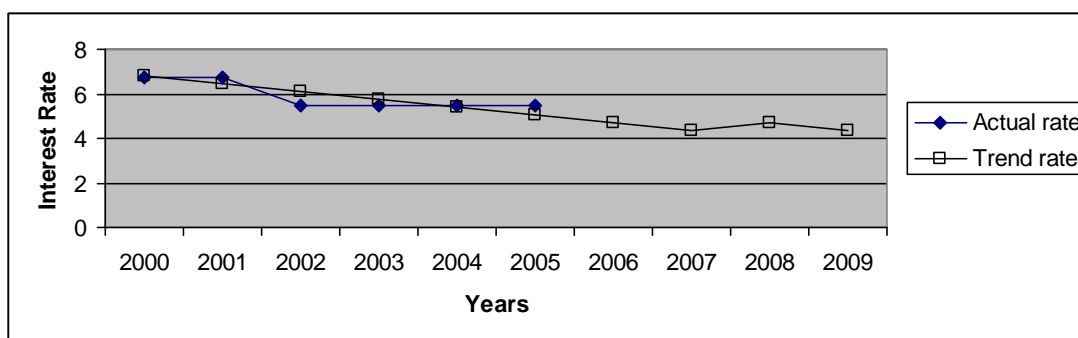
Trend of Interest Rate of Development Bond

	Actual rate	Trend rate
2000	6.75	6.84
2001	6.75	6.49
2002	5.5	6.14
2003	5.5	5.79
2004	5.5	5.44
2005	5.5	5.09
2006	5.5	4.74
2007	5.5	4.39
2008		4.04
2009		3.69
Mean (a)		
Standard Deviation		0.81
Rate of Change (b)		-0.35
Trend Equation		6.31-0.35x

To make clearer, the facts are shown in the figure: 4.23.

Figure: 4.23

Trend of Interest Rate of Development Bond



4.5 Major Findings of the Study

From the analysis of the data, following major findings have been drawn out.

From the analysis of investment on government securities to total investment ratio, it is seen that commercial banks are interested to invest in government securities. It is found that HBL has made 50.28% investment on government securities, which is the lowest among the banks under study. EBL has invested 94.08% in government securities.

From the analysis of investment on treasury bills to total investment ratio, it is found that commercial banks are interested to invest in short-term government securities rather than long-term securities. The banks are found to invest minimum 26.10% to maximum 85.02% of total investment in treasury bills.

From the analysis of investment on government bond to total investment ratio, it is found that the commercial banks are less interested to invest in long-term government security rather than treasury bills. Nabil and NIC have invested 31.74% and 24.17% respectively but HBL and EBL have invested very nominal amount on government bond.

From the analysis of total investment to total deposit ratio, it is revealed that commercial banks have invested 24.44% of total deposit in securities.

Commercial banks have invested around 18.36% of total deposit in government securities. NIC has invested the highest 21.04% and BOK has invested the lowest 14.19% in government securities.

From the analysis of investment on treasury bill to total deposit ratio, it is found that the commercial banks have invested 14.58% of total deposit in short term government securities.

From the analysis of total investment on government bond to total deposit ratio of the sample bank, it is found that the banks have invested only 3.28% of total deposit in government bond. EBL has invested only 0.54% of total deposit in government bond.

From the analysis of investment on treasury bills to total investment on government securities, the commercial banks have invested in an average of 83% of total investment on government securities in treasury bills. EBL and HBL have invested 97.67% and 94.07% in treasury bills respectively.

From the analysis of investment on government bond to total investment on government securities ratio, it is revealed that HBL and EBL have not invested on government bond in the first 5 and 4 years respectively. Then after they started to invest on the bond. Nabil has invested 54.80% of government securities in the development bond.

From the analysis of investment on treasury bills to short-term investment ratio it is found that each of the banks under study has invested only on treasury bills among the different types of short-term investment instruments. EBL has invested 95.59% and 99.17% of total short-term securities in treasury bills in the year 2001 and 2002 respectively. Except for these two years for EBL, every bank has invested 100% of short-term securities on treasury bills.

None of the banks under study are found to invest on National Saving Certificate.

From the comparative analysis of trend of investment on government securities to total investment it is found that the ratio of Nabil, HBL, BOK and NIC are in decreasing trend while the ratio of EBL is in increasing trend.

It is found that the investment on treasury bills to total investment ratio of Nabil, HBL, BOK and NIC are in decreasing trend. The ratio of HBL is sloping down rapidly. The ratio of BOK is sloping down slowly at the rate of -2.06% .

The investment on treasury bills to total investment ratio of EBL is fluctuating in increasing trend.

The investment on government bond to total investment ratios of HBL, EBL, BOK and NIC is fluctuating in increasing trend while the ratios of Nabil are in decreasing trend.

From the trend analysis of total investment to total deposit ratio, it is found that total investment to deposit ratio of Nabil, HBL, EBL, BOK and NIC is in increasing trend with fluctuation.

It has been found the fact that the investment on government securities to total deposit ratio of all the sample banks are in increasing trend.

The investment on treasury bills to total deposit ratio of all the sample banks are in increasing trend.

From the trend analysis of the investment on government bond to total deposit ratio, it is found that investment on government bond to total deposit ratio is in increasing trend for all the banks under study.

From the analysis of the trend value of investment on treasury bill to total investment on government securities ratio, it is revealed that the ratio of all the sampled banks are fluctuating in decreasing trend.

It has been revealed that the investment on government bond to total investment on government securities ratio of Nabil, HBL, EBL, BOK and NIC is in increasing trend.

From the analysis of the interest rate, it is depicted that the mean interest rate of 91-days treasury bills is 3.64%. From the trend analysis of the interest rate, it is found that the interest rate of 91-datys treasury bills is fluctuating in decreasing rate. But the rate of fluctuation is nominal i.e. 0.09%.

It is revealed that the interest rate of 364-days treasury bills is, in average, 5.23%. The trend value of the interest rate shows the decreasing trend of fluctuation.

It is depicted that the interest rate of the national saving certificate is in an average of 10.49%. By the analysis of trend, it is seemed that the interest rate of national saving certificate is in decreasing trend.

It is revealed that the interest rate of development bond is in an average of 6.31% during the study period. From the trend analysis of the interest rate of the development bond, it is depicted that the trend of interest rate of the development bond is in decreasing trend.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

In this chapter, summary and conclusions of the research as well as recommendations are presented separately. After summarizing and concluding the research, recommendations are suggested to Nepalese commercial banks regarding the various matters concerning the investment on government securities. The researcher has tried to give suggestions and recommendations to the concerned groups; commercial banks, Nepal Rastra Bank, government and further researcher based on this research.

5.2 Summary

Basically, the entire research work has focused on the comparative study on commercial bank's investment on government securities. For the study, five commercial banks i.e. Nabil, HBL, EBL, BOK and NIC are taken as sample and analyzed their investment on government securities. Eight years secondary data, i.e. from 1998 to 2005, are taken for the study. The general objective of this study is to analyze the practice of the commercial bank's investment on government securities. To meet the general objective, the other specific objectives are formulated as follows.

- a. To study the trend of investment on long-term and short-term government securities of the selected commercial banks.
- b. To analyze the yield from government securities to the commercial banks.
- c. To evaluate the proportion of investment made on government securities by the banks.

To meet the research objectives this study is divided into five chapters. First is introduction chapter, which includes general background statement of the problem, objectives of the study, significance of the problem, objectives of the study, significance of the study, limitations of the study and organization of the study.

Second chapter deals with review of available literatures in the field of the study being conducted. This includes review of the theories of the concerned topic, review of books and review of various empirical studies.

Third chapter explains the research methodology employed to conduct the study and tools and techniques used in analysis of the data as well. This chapter includes research design, source of data, population and samples, methods of data analysis and various financial and statistical tools.

Fourth chapter is devoted to the presentation, analysis and interpretation of the study through definite course of research methodology. In this chapter, all the data are compiled, processed and tabulated as per necessity and different tables, figures and diagrams are presented to make the study easier.

Fifth and the last chapter is conclusive and suggestive chapter. It includes summary of the study, conclusion of the main finding and recommendation for further improvement.

This study suffers from different limitations; it considers five banks as samples out of total commercial banks in Nepal. Time and resources are the constraints of the study. Therefore the study may not be generalized in all case and accuracy depends upon the data collected and provided by the organization.

5.3 Conclusions

From the analysis of the data, following conclusions have been drawn out.

Commercial banks are interested to invest in government securities. The banks are more interested to invest in short-term government securities rather than long-term securities.

But the banks are less interested to invest in long-term government securities. Nabil and NIC have invested 31.21% and 17.79% respectively but HBL and EBL have invested very nominal amount on government bond.

The Commercial banks have invested around 18.36% of total deposit in government securities. The banks are able to increase the investment on government securities, as there is increase in deposit. It is found that the commercial banks have invested 14.58% of total deposit in short-term government securities.

The banks have invested only 3.28% of total deposit in government bond. It implies that commercial banks want to maintain liquidity by investing in short-term, risk free assets rather than long-term securities.

It is depicted that treasury bills cover most of the investment in government securities. The commercial banks have invested in an average of 83% of total investment on government securities in treasury bills.

It is found that each of the banks under study has invested only on treasury bills among the different types of short-term investment instruments. Most of the banks have invested 100% of short-term securities on treasury bills.

None of the banks under study are found to invest on National Saving Certificate.

It is found that total investment to deposit ratio of the banks is in increasing trend. It implies that the banks are able to raise the total investment as per increase in total deposit.

It is found that the investment on government securities to total deposit ratio of all the sample banks are in increasing trend. This fact implies that the banks are utilizing their deposits by investing on government securities.

The investment on treasury bills to total deposit ratio of all the sample banks are in increasing trend. This fact implies that the banks are investing their deposit in risk free short-term investment securities significantly.

It is found that investment on government bond to total deposit ratio is in increasing trend for all the banks under study. It means the bank's interest of investment on government bond is increasing.

Trend value of investment on treasury bill to total investment on government securities ratio of all the sampled banks are fluctuating in decreasing trend.

It has been revealed that the investment on government bond to total investment on government securities ratio of all the banks under study is in increasing trend.

The interest rate of all government securities i.e. 364-days treasury bills, 91-days treasury bills, national saving certificates, and development bond are in decreasing trend. The mean interest rates of the securities are 5.23%, 3.64%, 10.49% and 6.31% respectively during the study period

5.4 Recommendation

Suggestion is the output of the study. It helps to take corrective action in their activities in future. On the basis of analysis and the findings of the study,

following suggestions and recommendations are made to overcome weaknesses and inefficiency of the concerned body.

HBL and Nabil have high level of fluctuation on investment on government securities i.e. treasury bills and government bond. The banks are suggested to avoid this type of fluctuation.

HBL and NBL should decrease the total investment on government securities to total deposit ratio, so that they can increase the loan and advance to make higher yield than government securities.

The trend of investment on treasury bills to total investment ratio of HBL is decreasing in high rate of change. So the bank should decrease the rate of change.

NIC has investing in treasury bills and government bond with the lowest fluctuation among the banks under study, so the bank is suggested to maintain this type of homogeneity in investment on government security.

All banks under study are not found to invest on national saving certificate, so they are suggested not to ignore this risk free investment alternative.

NRB is suggested to make directives for commercial banks to manage a good investment portfolio so that they can reduce the risk by investing on each type of investment instruments.

In developing countries, municipal bonds are important means to raise money for local government bodies for local development. Nepal government has not made legal provision to issue municipal bonds. So the government should make the law to open the door to issue the bonds by local government units.



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Appendix I

Total investment in Government Security to Total Investment Ratio

Rs. in million

Banks	Particular	Years				
		2000	2001	2002	2003	2004
Nabil	Total Govt. Inv.	1233.823	2732.959	4120.924	3588.772	3672.9
	Total Investment	1,250.943	7,704.309	8,199.515	6,031.176	5,836.9
	Ratio (%)	98.6314	35.47312	50.25814	59.50369	62.9
HBL	Total Govt. Inv.	2206.921	2025.252	2588.562	3998.87	3431.9
	Total Investment	2,216.416	4,083.160	9,157.107	10,175.435	9,292.9
	Ratio (%)	99.57159	49.60011	28.26834	39.299253	36.93
EBL	Total Govt. Inv.	257.612	822.996	1538.897	1599.35	2466.9
	Total Investment	260.113	901.722	1,693.037	1,653.977	2,535.9
	Ratio (%)	99.03856	91.26939	90.89566	96.69723	97.26
BOK	Total Govt. Inv.	143.434	300.805	542.65	1510.705	2371.9
	Total Investment	151.630	419.816	677.459	1,816.149	2,477.9
	Ratio (%)	94.59482	71.6517	80.10078	83.181783	95.73
NIC	Total Govt. Inv.	301.476	511.441	680.423	1075.187	1235.9
	Total Investment	302.277	567.067	753.812	1,153.262	1,760.9
	Ratio (%)	99.73505	90.19061	90.26427	93.230055	70.15

Appendix II

Investment in Treasury Bills to Total Investment Ratio

Rs. in million

Banks	Particular	Years							
		2000	2001	2002	2003	2004	2005	2006	2007
Nabil	Treasury bill	606.650	1,857.689	2,517.371	1,593.339	2,193.315	664.627	878.582	104
	Total Investment	1,250.943	7,704.309	8,199.515	6,031.176	5,836.068	4269.658	6180.568	895
	Ratio (%)	48.49536	24.11233	30.70147	26.418385	37.58206	15.566282	14.21523	11.7
HBL	Treasury bill	2206.921	2025.252	2588.562	3,334.767	2,781.700	4819.7	2,781.700	481
	Total Investment	2,216.416	4,083.160	9,157.107	10,175.435	9,292.103	11692.341	10889.0315	11882
	Ratio (%)	99.57159	49.60011	28.26834	32.772717	29.93617	41.221001	25.5458	40.5
EBL	Treasury bill	257.612	822.996	1,523.898	1,537.301	2,392.104	1873.709	2,392.104	337
	Total Investment	260.113	901.722	1,693.037	1,653.977	2,535.658	2128.932	4201.321	498
	Ratio (%)	99.03856	91.26939	90.00973	92.9457	94.33859	88.011688	56.936	67.
BOK	Treasury bill	128.435	300.806	542.650	1,323.656	2,110.150	1559.541	2,110.150	155
	Total Investment	151.630	419.816	677.459	1,816.149	2,477.410	2598.605	3378.128	299
	Ratio (%)	84.70288	71.65184	80.10079	72.882554	85.17566	60.014546	62.46507	52.0
NIC	Treasury bill	281.477	371.441	379.854	774.277	1,008.891	967.928	1125.891	146
	Total Investment	302.277	567.067	753.812	1,153.262	1,760.724	1572.902	1582.8871	2311
	Ratio (%)	93.11889	65.5022	50.3911	67.137953	57.29978	61.537718	71.1289	63.5

Appendix III
Investment in Government Bond to Total Investment Ratio
 Rs. in million

Banks	Particular	Years				
		2000	2001	2002	2003	2004
Nabil	Inv. In Govt. Bond	627.173	840.271	1,567.977	1,960.434	1,479.312
	Total Investment	1,250.943	7,704.309	8,199.515	6,031.176	5,836.068
	Ratio (%)	50.136	10.90651	19.1228	32.505001	25.34774
HBL	Inv. In Govt. Bond	0	0	0	651.768	637.693
	Total Investment	2,216.416	4,083.160	9,157.107	10,175.435	9,292.103
	Ratio (%)	0	0	0	6.4053085	6.862742
EBL	Inv. In Govt. Bond	0	0	15.000	62.050	74.325
	Total Investment	260.113	901.722	1,693.037	1,653.977	2,535.658
	Ratio (%)	0	0	0.885982	3.7515635	2.931192
BOK	Inv. In Govt. Bond	15.000	0	0	187.050	261.625
	Total Investment	151.630	419.816	677.459	1,816.149	2,477.410
	Ratio (%)	9.89251	0	0	10.299266	10.56043
NIC	Inv. In Govt. Bond	20.000	140.000	300.569	300.911	226.386
	Total Investment	302.277	567.067	753.812	1,153.262	1,760.724
	Ratio (%)	6.61645	24.68845	39.8732	26.092116	12.85753

Appendix IV
Total Investment to Total Deposit Ratio

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Particular	Year							
	2000	2001	2002	2003	2004	2005	2006	2007
Total Investment	1,250.943	7,704.309	8,199.515	6,031.176	5,836.068	4269.658	6180.568	8956.3
Total Deposit	12780.1	15838.9	15370.6	13437.7	14098	14119.032	25114.021	265
Ratio (%)	9.788213	48.64169	53.34544	44.882499	41.39643	30.240444	24.61	33.7350
Total Investment	2,216.416	4,083.160	9,157.107	10,175.435	9,292.103	11692.341	10889.0315	11882.98
Total Deposit	14082.5	17613.6	18595.2	21002.8	22760.9	24814.011	26843.031	31056.8
Ratio (%)	15.7388	23.18186	49.24446	48.447993	40.82485	47.119915	40.5655	38.262
Total Investment	260.113	901.722	1,693.037	1,653.977	2,535.658	2128.932	4201.321	4985.1
Total Deposit	3057.4	4574.5	5461.1	6694.9	8064	10097.601	14056.56	18089.5
Ratio (%)	8.507648	19.71192	31.00175	24.70503	31.44417	21.083543	29.888	27.557
Total Investment	151.630	419.816	677.459	1,816.149	2,477.410	2598.605	3378.128	2995.1
Total Deposit	3983	5724.1	5735.9	6169.6	7741.6	8942.748	10485	1238
Ratio (%)	3.806926	7.334176	11.81086	29.43706	32.00126	29.058238	32.21867	24.174
Total Investment	302.277	567.067	753.812	1,153.262	1,760.724	1572.902	1582.8871	2311.46
Total Deposit	2025.5	3575.8	3165.3	3143.9	5146.4	6241.378	7895.3	8475
Ratio (%)	14.92357	15.85846	23.81487	36.682535	34.21272	25.201198	20.047	27.272

Appendix V
Total Investment on Government Securities to Total Deposit Ratio
 Rs. in million

Banks	Particular	Year				
		2000	2001	2002	2003	2004
Nabil	Total Govt. Inv.	1233.823	2732.959	4120.924	3588.772	3672.626
	Total Deposit	12780.1	15838.9	15370.6	13437.7	14098
	Ratio (%)	9.654252	17.25473	26.81043	26.706743	26.05069
HBL	Total Govt. Inv.	2206.921	2025.252	2588.562	3998.87	3431.728
	Total Deposit	14082.5	17613.6	18595.2	21002.8	22760.9
	Ratio (%)	15.67137	11.49823	13.92059	19.039699	15.07729
EBL	Total Govt. Inv.	257.612	822.996	1538.897	1599.35	2466.428
	Total Deposit	3057.4	4574.5	5461.1	6694.9	8064
	Ratio (%)	8.425852	17.99095	28.17925	23.88908	30.58566
BOK	Total Govt. Inv.	143.434	300.805	542.65	1510.705	2371.775
	Total Deposit	3983	5724.1	5735.9	6169.6	7741.6
	Ratio (%)	3.601155	5.255062	9.46059	24.486271	30.63675
NIC	Total Govt. Inv.	301.476	511.441	680.423	1075.187	1235.276
	Total Deposit	2025.5	3575.8	3165.3	3143.9	5146.4
	Ratio (%)	14.88403	14.30284	21.49632	34.199148	24.00272

Appendix VI
Investment on Treasury bill to Total Deposit Ratio

Rs. in million

Appendix VII
Investment on Government Bond to Total Deposit Ratio

Banks	Particular	Year							
		2000	2001	2002	2003	2004	2005	2006	2007
Nabil	Treasury bill	606.650	1,857.689	2,517.371	1,593.339	2,193.315	664.628	878.582	1000.000
	Total Deposit	12780.1	15838.9	15370.6	13437.7	14098	14119.032	25114.021	25114.021
	Ratio (%)	4.746829	11.72865	16.37783	11.857231	15.55763	4.7073199	3.4983	3.980000
HBL	Treasury bill	2206.921	2025.252	2588.562	3,334.767	2,781.700	4819.7	2,781.700	4819.7
	Total Deposit	14082.5	17613.6	18595.2	21002.8	22760.9	24814.011	26843.031	31000.000
	Ratio (%)	15.67137	11.49823	13.92059	15.877724	12.2214	19.423301	10.3628	15.515000
EBL	Treasury bill	257.612	822.996	1,523.898	1,537.301	2,392.104	1873.709	2,392.104	3300.000
	Total Deposit	3057.4	4574.5	5461.1	6694.9	8064	10097.601	14056.56	18000.000
	Ratio (%)	8.425852	17.99095	27.90459	22.962263	29.66398	18.555982	17.0177	18.333333
BOK	Treasury bill	128.435	300.806	542.650	1,323.656	2,110.150	1559.514	2,110.150	1500.000
	Total Deposit	3983	5724.1	5735.9	6169.6	7741.6	8942.748	10485	10000.000
	Ratio (%)	3.224576	5.255072	9.460592	21.454481	27.25729	17.438868	20.1254	12.000000
NIC	Treasury bill	281.477	371.441	379.854	774.277	1,008.891	967.928	1125.891	1400.000
	Total Deposit	2025.5	3575.8	3165.3	3143.9	5146.4	6241.378	7895.3	8000.000
	Ratio (%)	13.89666	10.38764	12.00057	24.627903	19.60382	15.508242	14.26026	17.500000

Rs. in million

Banks	Particular	Year						
		2000	2001	2002	2003	2004	2005	2006
Nabil	Inv. In Govt. Bond	627.173	840.271	1,567.977	1,960.434	1,479.312		
	Total Deposit	12780.1	15838.9	15370.6	13437.7	14098		
	Ratio (%)	4.907419	5.305109	10.20114	14.589057	10.49306	1.000000	1.000000
HBL	Inv. In Govt. Bond	0	0	0	651.768	637.693		
	Total Deposit	14082.5	17613.6	18595.2	21002.8	22760.9		
	Ratio (%)	0	0	0	3.1032434	2.801704	2.666667	2.666667
EBL	Inv. In Govt. Bond	0	0	15.000	62.050	74.325		
	Total Deposit	3057.4	4574.5	5461.1	6694.9	8064		
	Ratio (%)	0	0	0.27467	0.9268249	0.921689	0.921689	2.666667

BOK	Inv. In Govt. Bond	15.000	0	0	187.050	261.625	
	Total Deposit	3983	5724.1	5735.9	6169.6	7741.6	
	Ratio (%)	0.376601	0	0	3.0318011	3.379469	6
NIC	Inv. In Govt. Bond	20.000	140.000	300.569	300.911	226.386	
	Total Deposit	2025.5	3575.8	3165.3	3143.9	5146.4	
	Ratio (%)	0.987411	3.915208	9.495751	9.5712496	4.398911	3

Appendix VIII
Investment on Treasury bills to Total Investment in Government Securities Ratio

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Banks	Particular	Year							
		2000	2001	2002	2003	2004	2005	2006	2007
Nabil	Treasury bill	606.650	1,857.689	2,517.371	1,593.339	2,193.315	664.628	878.582	104
	Total Govt. Inv.	1233.823	2732.959	4120.924	3588.772	3672.626	2413.939	5482.35	75
	Ratio (%)	49.16828	67.97352	61.08754	44.397893	59.72061	27.532924	16.025	13.8
HBL	Treasury bill	2206.921	2025.252	2588.562	3,334.767	2,781.700	4819.7	2,781.700	481
	Total Govt. Inv.	2206.921	2025.252	2588.562	3998.87	3431.728	5469.729	5144.313	6454
	Ratio (%)	100	100	100	83.392722	81.05829	88.115883	54.073	74.6
EBL	Treasury bill	257.612	822.996	1,523.898	1,537.301	2,392.104	1873.709	2,392.104	337
	Total Govt. Inv.	257.612	822.996	1538.897	1599.35	2466.428	2100.29	2753.5401	375
	Ratio (%)	100	100	99.02533	96.120334	96.98656	89.211918	86.8737	89.8
BOK	Treasury bill	128.435	300.806	542.650	1,323.656	2,110.150	1559.514	2,110.150	155
	Total Govt. Inv.	143.434	300.806	542.65	1510.705	2371.775	2146.619	2859.354	305
	Ratio (%)	89.54283	100	100	87.618408	88.96924	72.649781	73.7918	51.0
NIC	Treasury bill	281.477	371.441	379.854	774.277	1,008.891	967.928	1125.891	146
	Total Govt. Inv.	301.476	511.441	680.423	1075.187	1235.277	1194.314	1856.807	210
	Ratio (%)	93.36627	72.62641	55.82618	72.013207	81.67324	81.044683	60.635	69.6

Appendix IX
Investment in Government Bond to Total Investment in Government Securities Ratio

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Banks	Particular	Year							
		2000	2001	2002	2003	2004	2005	2006	2007
Nabil	Inv. In Govt. Bond	627.173	840.271	1,567.977	1,960.434	1,479.312	1749.312	1678.531	4270.000
	Total Govt. Inv.	1233.823	2732.959	4120.924	3588.772	3672.626	2413.939	5482.35	7540.000
	Ratio (%)	50.83168	30.74583	38.04916	54.626867	40.2794	72.467117	30.6169	56.6329
HBL	Inv. In Govt. Bond	0	0	0	651.768	637.693	637.693	598.429	711.000
	Total Govt. Inv.	2206.921	2025.252	2588.562	3998.87	3431.728	5469.729	5144.313	6454.000
	Ratio (%)	0	0	0	16.298804	18.58227	11.658585	11.6328	11.0163
EBL	Inv. In Govt. Bond	0	0	15.000	62.050	74.325	226.58	856.358	1211.000
	Total Govt. Inv.	257.612	822.996	1538.897	1599.35	2466.428	2100.29	2753.5401	3750.000
	Ratio (%)	0	0	0.974724	3.8797011	3.013467	10.788034	31.1	32.3200
BOK	Inv. In Govt. Bond	15.000	0	0	187.050	261.625	587.105	879.203	960.000
	Total Govt. Inv.	143.434	300.805	542.65	1510.705	2371.775	2146.619	2859.354	3050.000
	Ratio (%)	10.45777	0	0	12.381636	11.03077	27.350219	30.748	31.5082
NIC	Inv. In Govt. Bond	20.000	140.000	300.569	300.911	226.386	226.386	463.523	910.000
	Total Govt. Inv.	301.476	511.441	680.423	1075.187	1235.277	1194.314	1856.807	2100.000
	Ratio (%)	6.634027	27.37364	44.17384	27.986808	18.32671	18.955317	24.9634	43.3333

Appendix X
Investment on Treasury Bill to Short Term Investment Ratio

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Banks	Particular	Year							
		2000	2001	2002	2003	2004	2005	2006	2007
Nabil	Treasury bill	606.650	1,857.689	2,517.371	1,593.339	2,193.315	664.628	878.582	1000.000
	Short Term Investment	606.650	1857.688	2,517.371	1,593.339	2,193.315	664.628	878.628	1000.000
	Ratio (%)	100	100	100	100	100	100	99.99	100
HBL	Treasury bill	2206.921	2025.252	2588.562	3,334.767	2,781.700	4819.7	2,781.700	4819.7
	Short Term Investment	2206.921	2118.606	2610.187	3,334.767	2781.7	4819.7	2781.700	4819.7
	Ratio (%)	100	95.594	99.172	100	100	100	100	99.99
EBL	Treasury bill	257.612	822.996	1,523.898	1,537.301	2,392.104	1873.709	2,392.104	3333.333
	Short Term Investment	257.612	822.996	1,523.898	1,537.301	2,392.104	1873.709	2392.104	3333.333
	Ratio (%)	100	100	100	100	100	100	100	99.99
BOK	Treasury bill	128.435	300.806	542.650	1,323.656	2,110.150	1559.514	2,110.150	1559.514
	Short Term Investment	128.435	300.806	542.650	1,323.656	2,110.150	1559.514	2110.60	1559.514
	Ratio (%)	100	100	100	100	100	100	99.97	100
NIC	Treasury bill	281.477	371.441	379.854	774.277	1,008.891	967.928	1125.891	1428.571
	Short Term Investment	281.477	371.441	379.854	774.277	1,008.891	967.928	1125.891	1428.571
	Ratio (%)	100	100	100	100	100	100	100	100

Appendix XI

Sample calculation of trend analysis of investment on government securities to total investment ratio of NIC is presented below.

Year(t)	Ratio(y)	$x=t-2004.5$	x^2	xy	$y_c=81.19-6.88x$
2000	99.73	-3.5	12.25	-349.055	$y_c = 81.19-4.76(-3.5)=97.85$
2001	90.19	-2.5	6.25	-225.044	$y_c= 81.19-4.76(-2.5)=93.09$
2002	90.26	-1.5	2.25	-135.39	$y_c= 81.19-4.76(-1.5)=88.33$
2003	93.23	-0.5	0.25	-46.615	$y_c= 81.19-4.76(-0.5)=83.578$
2004	70.16	0.5	0.25	35.08	$y_c= 81.19-4.76(0.5)=78.81$
2005	75.93	1.5	2.25	113.89	$y_c= 81.19-4.76(1.5)=74.05$
2006	69.75	2.5	6.25	174.37	$y_c= 81.19-4.76(2.5)=69.29$
2007	66.86	3.5	12.25	234.01	$y_c= 81.19-4.76(3.5)=64.53$
Total	$\sum Y =656.11$		$\sum X^2=42$	$\sum xy =-199.75$	

We have

The equation of the straight line trend, $y_c = a + b x$

Where,

$$\text{Mean Value (a)} = \frac{\sum y}{N} = \frac{656.11}{8} = 81.19$$

$$\text{Rate of Change (b)} = \frac{\sum xy}{\sum x^2} = \frac{-199.75}{42} = -4.76$$

Therefore trend equation is

$$y_c = a+bx$$

$$y_c =81.19+(-4.76)x$$

$$y_c =81.19-4.76x$$

Appendix XII

Weighted Average Rate of Interest of Government Securities

Year	364-days Treasury Bill	91-days Treasury Bill	National Saving Certificate	Development Bond
2000	6.86	3.52	11.13	7.5
2001	5.13	2.33	10.88	7.5
2002	6.16	4.66	10.88	6.75
2003	5.26	4.96	10.88	6.75
2004	5.2	4.71	10.63	5.5
2005	4.71	3.48	10	5.5
2006	4.2	2.93	9.75	5.5
2007	4.32	2.50	9.75	5.5