

A STUDY ON INVESTMENT POLICIES OF NEPALESE COMMERCIAL BANKS

*(With Special Reference to NABIL Bank Ltd and Nepal Industrial and
Commercial Bank Ltd)*

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RECOMMENDATION

This is to certify that the thesis:

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Entitled:

**STUDY ON INVESTMENT POLICIES OF NEPALESE COMMERCIAL
BANKS**

**(With Special Reference to NABIL Bank Ltd and Nepal Industrial and
Commercial Bank Ltd.)**

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

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Declaration

I hereby declare that this thesis entitled to “Study on Investment Policies of Nepalese Commercial Bank (with Special Reference to NABIL Bank and Nepal Industrial and Commercial Bank)” submitted to Office of the Dean, Faculty of Management, Tribhuvan University is my original work done in the form of partial fulfillment of the requirement for the Master’s Degree in Business Studies (M.B.S) under the supervision and guidance of Ms Ruchila Pandey of Shanker Dev Campus.

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Researcher

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LIST OF ABBREVIATIONS

NIC	: Nepal Industrial and Commercial Bank
NABIL	: Nabil Bank Limited
FY	: Fiscal Year
GDP	: Gross Domestic Product
Govt.	: Government
CV	: Co-efficient of Variation
SD	: Standard Deviation
i.e	: That is
LTD	: Limited
&	: And
r	: Co-efficient of Correlation
P.Er	: Probable Error
T.U	: Tribhuvan University
NRB	: Nepal Rastra Bank

CHAPTER I

INTRODUCTION

1.1 General Background

The development of a country is measured by its economic indices. The mobilization of domestic resources, capital formation and its proper utilization plays an important role in the economic development of a country. Nepal, like any other country has been laying emphasis on the upliftment of its economy. Developing country such as Nepal aspires for a rapid economic growth, which required additional capital formation with the sufficient amount of investment. Nepal's economy is in the earlier stage of economic development where financial (Banking) sector need to play crucial role in order to accelerate this pace as these sector can accumulate scattered saving for capital formulation. Similarly, integrated and speedy development of the country is only possible when competitive and reliable banking services are reached and carried to every corner of the country.

Financial institutions are viewed as catalyst in the process of economic growth. Every financial institution, big or small, be it a commercial bank or a finance company or a cooperative bank play an important role in the development of a country. The development process of a country involves the mobilization and development of resources. There is range of banking institutions performing different functions. The proper mobilization and utilization of domestic resources is one of the key factors in the economic development of a country.

Banking sector plays an important role in the economic development of the country. Commercial banks are one of the vital aspects of this sector, which deals in the process of channel zing the available resources in the needed sector. They

provide capital for the development of industry, trade and business and other resources. In this way it is the intermediary between the deficit and surplus of financial resources. All the economic activities are directly or indirectly channeled through these banks.

People keep their surplus money as deposits in the bank and hence bank can provide such funds to finance the industrial activities in the form of loans and advances. Commercial bank renders numerous services to their customer to increase their economic and social life. People are interested to invest in the bank for their safety, good return, liquidity, denomination last but not least convenience.

In general sense, Investment means to pay money to get more but in broad sense, it means the sacrifice of current dollars (rupees) for future dollars (rupees). Investment brings fourth visions of profit, risk, specteculation of wealth for the uniformed investing may result in disaster, for the knowledge, the investment process can be financially rewarding and existing.

An investment policy has played very important role in the development of the Organization. Investment is the implementation of financial management decision, which is basically to operate in the financial sector. Investment always involves a certain amount of risk i.e. there is the chance that an investment will yield not only a profit but a loss also.

A good investment policy attracts both the borrowers and lenders which help to increase the volume and quality of the deposits, loans and investment. The bankers have the responsibilities of safe guarding the interest of the depositors, share holders and the society they are serving.

1.2 Profiles of concerned Banks

During few years many commercial banks are established in Nepal. There are all together 31 commercial banks operating now. This research is conducted only taking two commercial banks Nabil Bank Limited(NABIL) and Nepal Industrial &Commercial Bank(NIC).

Nabil Bank Ltd(NABIL)

Nabil Bank Limited commenced its operation on 12 July 1984 as the first joint venture bank in Nepal. Dubai Bank Limited, Dubai (Late conglomerated to Emirates Bank International Limited, Dubai) was the first joint venture partner of Nabil. Currently, NB (International) Limited, Ireland is the foreign partner. Nabil Bank Limited had the official name Nepal Arab Bank Limited till 31st December 2001.

Nabil, as a pioneer in introducing many innovative products and marketing concepts in the domestic banking sector, represents a milestone in the banking history of Nepal as it started an era of modern banking with customer satisfaction measured as a focal objective while doing business. Nabil provides a full range of commercial banking services through its outlets spread across the nation and reputed correspondent banks across the globe. Moreover, Nabil has a good name in the market for its highly personalized services to the customers.

The current ownership structure of Nabil Bank Ltd is NB (International) Limited 50%, NIDC 6.15%, Rastriya Beema Sansthan 9.67%, Nepal Stock Exchange 0.33%, General Public 30% and 3.85% hold by other Promoter Groups.

The Present capital structure of NABIL

Share Capital & Reserve	(Rs In millions)
1. Authorized capital	1600.00
2. Issued equity capital	965.47
3. Paid up equity capital	965.47

Nepal Industrial and Commercial Bank (NIC Bank) Ltd.

Nepal Industrial & Commercial Bank Limited (NIC Bank) commenced its operation on 21 July 1998 from Biratnagar. The Bank was promoted by some of the prominent business houses of the country. NIC Bank was the first commercial bank in Nepal to have received ISO 9001:2000 certification for its Quality Management System standard in the year 2006. The Bank has recently been certified under the upgraded ISO 9001:2008 standards for the Bank's Quality System on Commercial Banking Activities for the first time in Nepal. Furthermore, NIC Bank became the 1st Bank in Nepal to be provided a line of credit by International Finance Corporation (IFC), an arm of World Bank Group under its Global Trade Finance Program, enabling the Bank's Letter of Credit and Guarantee to be accepted/ confirmed by more than 200 banks worldwide.

The Bank has grown rapidly with 33 branches throughout the country. The Bank has also been awarded the "Bank of the Year 2007-Nepal" by the world-renowned financial publication of The Financial Times, U.K.-The Banker.

The current shareholding pattern of the Bank constitutes of promoters holding 51% of the shares while 49% is held by the general public.

The Present capital structure of NIC

Share Capital & Reserve	(Rs In millions)
1. Authorized capital	1600.00
2. Issued equity capital	1140.48
3. Paid up equity capital	1140.48

1.3 Statement of Problem:

Keeping pace with today's up growing economy itself is a hazardous task. And with that, commercial banks are facing tough competition too and the fact that the present situation of Nepal has made the investments insecure to high extend. As a result, investments are being very challenging today. Commercial banks have to look for secure and productive investment opportunity which definitely is tuff job.

Commercial banks have huge collection of deposits from depositors. Effective utilization of collected fund is only possible through sound investment policy. Most Nepalese commercial banks have not formulated their investment policy in an organized manner. They mainly rely upon the instructions and guidelines issued by NRB. They are unable to estimate the future; they do not have any clear view towards Investment policy. Furthermore, the implementation of policy is not in an effective way. The main reason attributed to unsound investment policy are lack of proper analysis on financial risk, interest rate risk, liquidity risk, business risk etc.

Commercial banks invest their funds in limited areas to achieve highest amount of profit. They are found to more interested in investment in less risky and highly liquid sectors i.e. treasury bills, development bonds and other securities. There is hesitation to invest on long-term projects they are much more safety minded. So, they follow conservative and un-effective investment policy.

There are various problems in resources mobilization by financial institution in Nepal. The most important problem is poor investment climate prevailing in Nepal due to heavy regulatory procedure uncertain government policy, NRB's directives, unsecured climate etc. Lack of sound investment policy is another reason for a commercial bank not to properly utilizing its deposits that is making loan and advances or lending for a profitable project. The problem that still persists

for a bank even today is to find a proper and viable project to ensure healthy profit. They have always feared high degree of risk and uncertainty owing to lack of profitable sectors for their investment. This condition will lead the commercial bank to the position of liquidation. The high liquidity position of banks has resulted in a decrease in investment in productive sectors; low liquidity position can also create problem in investment too.

From last couple of years Nepalese economy is facing fluctuation in liquidity position. Due to this problem many financial institutions are been unable to invest in new sectors resulting decrease in banks and financial institution's profitability. So banks and financial institutions are attracting depositors by offering comparatively higher rate of interest than each other's which is not good for long term.

The numbers of joint venture banks are increasing now a day. In this contest due to crisis in the political stability and some problem has led down the economic growth, many business sectors are not doing well. Today's new banks are being established and existing banks are opening their branches in different areas. There is vast competition among the banks. Joint venture banks are at high time to focus their eyes for the better productive management for survival and growth.

So commercial banks should follow proper investment policy for the betterment of both management and shareholders. Thus, present study will make a modest attempt to analyze investment policies of Nepalese commercial banks of Nepal at present unfavorable economic condition.

The main problem area of the study is to find out the comparative investment policy of Nepalese commercial banks.

- Are the fund mobilization and investment policies are effective or not?
- What is the liquidity, profitability position of the bank?
- What is the relationship of investment and loan and advances with total deposits and total net profit of joint venture banks?
- Are they maintaining sufficient liquidity, profitability and risk position?
- Does the investment decision affect the total earnings of the commercial bank?

1.4 Objectives of the study

The basic objectives of the study are to examine and evaluate the investment policies of commercial banks.

- To study investment policy and discuss about the fund mobilization of the concerned banks.
- To evaluate the liquidity, asset management efficiency, profitability and risk position.
- To determine the growth rate of bank in terms of deposit, investment and profitability of the banks.
- To share suggestions and recommendations for the improvement that has been adopted by banks based on the analysis made for their future progress.

1.5 Importance of the study

Investment activity is the life-blood of any financial institution, since only accumulating deposits has no meaning. Better return can be ensured only when deposits are properly mobilized through sound investment policy.

The main focus of the study is to highlight the investment policies of commercial banks expecting that the study can be bridge the gap between deposits and investment policies. On the other hand, the study would provide information to management of the bank that would help them to take collective action. Further from the study the shareholders would get information to make decision while making investment on shares of various banks.

In the context of Nepal there is less availability of research work, Journal and articles in investment policy of commercial banks as well as other financial institution. As it is a well known fact that the success and prosperity of the bank relies heavily upon the successful investment of collected resource to the important sectors of economy. Successful formulation and effective implementation of investment policy is the prime requisite for the successful performance of commercial banks. A banking system is said well if the deposit collection and its mobilization have flow, if the investment is in productive sector, if it has contributed in GDP, if it has maximized the overall economy.

There are various problems in effective investment of commercial banks of Nepal, which affect their performance to a greater extent. Performance of commercial banks does not seem so satisfactory in terms of utilizing its resource efficiently in productive sectors. Hence the main significance of this study of investment portfolio analysis of Nepalese commercial banks is to help how to minimize risk on investment and maximize return through portfolio analysis, portfolio management, credit management and effect on investment decision on

earning will strive to disclose the internal weakness of the banks and furnish the ideas for improvement.

This study of investment policy will provide useful information to bank management in the formulation of appropriate investment strategies for improving the performance of banks. Along with this it will provide useful information to academic institution, bank employees, trainees, investors, policy making bodies, shareholders, stakeholders and general public as well.

1.6 Limitation of the study

This study is simply a partial study for the fulfillment of MBS degree, which has to be finished within limited period. Hence, this study is not far from several limitations of its own kind, which weaken the heart of the study.

Some of such limitations are as follows.

- This study is limited only on five years data of concerned banks. Thus the analysis made reveals that period only.
- This study is based on secondary data collected from concerned banks and other sources.
- Only the two banks have been selected as sample for the study. Thus, it will not reveal real status of commercial banks neither represents the total banking system of Nepal.
- This study concentrates only on those factors which are related to investment.
- Statistical tools are used for analysis. Hence, the drawbacks and weakness of those tools may affect the outcome of the study.

1.7 Organization of the study

The whole study is divided into five different chapters as follows:

Chapter 1- Introduction

The introduction part includes the general background of the study, statement of the problem, objectives, importance and limitation of the study.

Chapter 2- Review of Literature

In this chapter the review of books, articles, past research and studies are made. Review of literature is conducted in two part Conceptual review and Review of previous thesis studies related to Investment decision and policy.

Chapter 3- Research Methodology

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

Chapter 4- Presentation and Analysis of Data

The fourth chapter is Presentation and Analysis of Data, which consists of financial tools and statistical tools used in the analysis of data. The collected secondary data have analyzed & presented in table form. And major findings of the study are discussed.

Chapter -5 Summary, Conclusions and Recommendation

The fifth and last chapter covers the summary of the study, the main conclusion that flows from the study and offers some recommendations as well as suggestions for further improvement.

CHAPTER 2

REVIEW OF LITERATURE

In this chapter the review of books, articles, past research and studies are made. The purpose of the chapter is to know the findings of past studies on the topic and to get idea and knowledge. The review of literature is conducted in two part Conceptual review and Review of related studies.

2.1 Conceptual review

Commercial Bank:

“A bank is an organization established to perform the financial transactions specified in section 47(1) of this act.” (Bank and Financial Institution’s Act; 2063 B.S.: 2)

Commercial banks are those institutions which accept demand deposits from customers and lend them to private sectors business. Commercial banks are the heart of financial systems so they play an important role in development of country. They work as intermediary between depositors and lenders and facilitate in overall development of the economy of the country and earning profit. Commercial banks render numerous services to their customer in view of facilitating their economic and social life. All the economic activities of each and every country are greatly influenced by the commercial banking business of that country. Commercial banks, by playing active roles, have changed the economic structure of the world.

"Commercial banks deal with other people's money. They have to find ways of keeping their assets liquid so that they could meet the demands of their

customers. In this anxiety to make profit, the bank cannot afford to lock up their funds in assets, which are not easily releasable. The depositors must make to understand that the bank is fully solvent. The depositor's confidence could be secured only if the bank is able to meet the demand for cash promptly and fully. The banker has to keep adequate cash for this purpose. Cash is an idle asset and the bankers cannot afford to keep a large possession of his assets in the form of cash. Cash brings in no income to the bank. Therefore the bankers have to distribute his assets in such a way that he can have adequate profits without sacrificing liquidity." (Radhaswamy, 1979: 27).

The main function of commercial bank is the accumulation to the temporary idle money of general public for trade and commerce. Its main functions are accept deposit and grants loan, collection and payment of cheques, exchange and purchase and discount bill for promissory notes exchange foreign currency to provide loan, agency function. Besides these, commercial banks also provides locker facilities, and underwrites share and debenture. Overseas trading services and information and other services. Commercial banks earn profit by proper mobilization of their resources. Many commercial banks have been established to provide a suitable service according to their customers.

According to Nepal Company Act 2031 B.S. "A commercial bank refers to such types of bank which deals in money exchange accepting deposits, advancing loans and commercial transaction except specific banking related to co-operative, agriculture, industry and other objective."

Concept of investment

In general sense Investment means to pay out money to get more. But in the broadest sense, investment means the sacrifice of current dollars for future dollars. The sacrifice takes place in the present and is certain. The reward comes later, if at all and the magnitude is generally uncertain. It is commonly known fact that an

investment is possible only when there is adequate saving therefore, both saving and investments are interrelated.

Investments are made in assets. Assets in all are of two types, real assets (land, buildings, factories etc) and financial assets (stocks, Bond, T-bill etc.). These two investments are not competitive but complementary, highly –developed institutions for financial investment greatly facilitating real investment. (Bhattarai Rabindra, 2004; 3)

"Investment in its broadest sense means the sacrifice of certain present value for (possibly uncertain) future values. He says the investment is the venture that the return is uncertain. So they have presented their view in the books that bank should look for the safe and less risky investment" (Sharpe and Gorden; 1998:1).

"Investment is any vehicle into which funds can be placed with, the expectation that will preserve or increase in value and generate positive returns" (Gitman, 1990:).

"Investment in its broader sense means the sacrifice of current dollars for future dollars. Two different attributes are generally involved: time and risk. The sacrifice takes places in the present and its magnitude as generally uncertain" (Sharpe, 1998: 1).

"An investment is a commitment of funds made in the expectation of some positive rate of return. If the investment is properly undertaken, the return will be commensurate with the risk the investor assumes."(Donald. E. Fischer and Ronald.J. Jordan).

“Investment may be defined as the purchase by an individual or institutional investor of a financial or real asset that produces a return proportional to the risk assumed over some future investment period.” (F. Amling)

“An investment is a commitment of money that I expected to generate additional money. Every investment entail some degree of risk, it requires a present certain sacrifice for a future uncertain benefit.” (J.K Francies)

“Investment as commitment of funds to one or more assets that will be held over some future time period. Investment is concerned with the management of an investor’s wealth. This is the sum of current income and present value of all income.” (Charles P. Jones 1991),

From the definitions above we can conclude that investment is commitment of money to get some positive rate of return in future which includes certain amount of risk. It is clear that investment is the utilization of funds today with expected additional return in future. Some time we may get negative return also, if wrongly invested without sound knowledge of investment and their related factor. Financial institutions must be able to mobilize their deposit collection funds in profitable, secured and marketable sector so that they can earn good return on their investment.

Importance of Investment Decision

It is important to note that investment in the long term assets invariably requires funds to be tied up in the current assets such as inventories and receivable. The firm's investment decisions would generally include expansion, acquisition, modernization and replacement of long term assets. Investment decision is very important because it influence the firms growth in long term, affect the risk of the firm require the large amount of funds, difficult decision to make.

i. Growth

The effects of investment decisions extend into the future and have to be endured for a longer period than consequences of the current operating expenditure. A firm's decision to invest in long term assets has a decisive influence on the rate and direction of its growth. Wrong decision can prove disastrous for the continued survival of the firm's on the other hand inadequate investment in assets will make it difficult for the firm to complete successfully and maintain its market share.

ii. Risk

A long term commitment of funds may also change the risk complexity of the firm. If the adoption of an investment increases average gain but causes frequent fluctuations in its earnings the firm will become more risky. Thus investment decisions shape the basic character of a firm.

iii. Funding

Investment decision generally involve large amount of funds which make it imperative for the firm to plan its investment programmers very carefully and make an advance arrangement for procuring finances internally or externally.

iv. Irreversibility

Most investment decisions are irreversible. It is difficult to find a market for such capital items once they have been acquired. The firm will incurred heavy losses if such assets are scrapped.

v. Complexity

Investment decisions are among the firms most difficult decisions. They are an assessment of future events which are difficult to predict. It is really a complex problem to correctly estimate the future cash flow of an investment uncertainty in cash flow is caused by economic, political, social and technological forces. From the above delimitation investment can be associated to that financial activity which is done for future uncertain earning sacrificing money at present which involves risk.

Investment policy of banks

Banks are established for the objectives of making profit, for the economic development of the country and take social responsibilities. They collect funds from the public who has surplus funds and invest the funds in profitable areas. Without making proper investment policies profits couldn't be generate from the investment that banks has made. So every commercial bank must set good investment policies and implement it much more carefully.

"Investment policy involves determining the investor's objectives and the amount of his or her investable wealth. Because there is a positive relationship between risk and return for sensible investment strategies. It is not an appropriate for investors to say that his or his objectives are 'to make a lot of money'. What is appropriate for a investors in this situation is to state that the objectives is to attempt to make a lot of money while recognizing that there is some chance that large loses may be incurred. Investment objectives should be stated in terms of both risk and return". (Jack Clark Francis; 2002:10)

"A study on investment policy of Nepal Bank Ltd. in comparison to other joint venture banks of Nepal" Has recommended that "the banks must utilize

depositor's money as loans and advance to get success in competitive banking environment. The largest items of the bank in the assets side is loans and advance. Negligence in administering this asset could be the main cause of liquidity crisis in the bank and one of the main reasons of banks failure". (Khadka; 1998:43)

Principles of sound lending and investment policy

The major income generating sources of commercial banks are lending and investing their funds in profitable sectors. Therefore every commercial banks or financial institutions should have good investment policy, the loans and advances made must be sound and safe and lending procedure must be proper and cautious for better profit and to protect public funds as well. The various types of assets must be balanced in such a way as to maximize income without incurring the danger of insolvency. In this context below mentioned points are to be seriously considered for good lending and investment policies.

a) Purpose:

First of all to invest any areas every bank should know that why a customers need have loan. This is very important for bankers so that they could not misuse the available funds that grant by the banks and he will never be able to pay it back and bank will possess it bad debts. Lending purpose of banks should be productive so that it could be beneficial for customer, bank and nation as well. Detailed information about the scheme of the project or activities should be examined before lending.

b) Safety:

A bank must give special emphasis on safety of investment. Bank should be careful while lending so that the investment are not subject to any undue risk of being unproductive or due to dishonesty of the borrowers. There is no doubt of loss whether it is little or great, if the bank has not invested in safe sector. The bank should think it with must sensitively.

c) Liquidity:

Liquidity generally refers to any assets that could be converted to cash immediately. Liquidity is the term used to refer to the capacity of the bank to pay cash in exchange of the deposits. A large part of the bank deposits is withdrawable on demand and hence the bank must maintain a sufficient degree of liquidity in its assets. Every bank should follow the principle of liquidity while investing their funds. Generally, people deposits money in banks with confidence that bank will pay back it whenever they are in need. For this bank needs liquid cash. If they invest the whole deposit as loans and advances they are not able to pay it back. So the commercial banks should try to move liquidity and profit together.

d) Security:

Security means adequate collateral having good value which can be easily sold off it required at any point of time. The bank should accept that type of securities, which are commercial durable and marketable having fair market value. It should lend on the basis of character, capacity and capital of the borrower. For the security in investing funds the bank can use the investment portfolio tools also.

e) Profitability:

The bank must earn sufficient income from its assets so as to meet all its expenses and pay a fair percentage of dividends to the shareholders. Profits of banks mainly depend upon the interest rate, volume of loan, its time period and nature of investment on different securities. A commercial bank can maximize its volume of wealth through maximization of return on their investment and lending. So commercial banks should invest their funds in those sectors from where they get more return.

f) Diversification:

To minimize the risk banks must diversify its investment in different sectors. They must be careful while granting loans; it should not be in only one sector. Diversification of loans helps the banks to sustain loss according to the law of average as one sectors fails to recover other sector of investment may succeed.

g) Legality:

Illegal securities will bring out money problems for the investor, a commercial bank must follow the rules and regulation as well as different directions issued by Nepal Rastra Bank, Ministry of finance, Ministry of law and other whole mobility its funds.

Investment Process

Every investment is not risk free so the investment must be made in such a way so that the risk is diversified. According to this book the investment can be made on securities such as treasury bins long term bond common stocks. The focuses of supply and demand inter act to determine a security market price. A security market is a mechanism for bringing together buyers and sellers of financial assets in order to facilitate trading. The investment decision has go through the following process. (Sharpe, Alexander & Bailey,1999).

a. Set Investment Process

Setting the investment policy involves determine the investors objective and amount of wealth tax consideration etc because there is a positive relationship between risk and return for deniable investment.

b. Portfolio Construction

Portfolio construction involves identifying those specific assets in which to invest and what proportion the investors wealth portfolio construction involves the diversification which minimizes the risk.

c. Portfolio Revision

The revision of portfolio is done from time to time. Due to changing partner of risk the portfolio revision are done to minimize the risk.

d. Security Analysis

Security analysis involves examines the number of securities. The purpose of analysis is to check whether the securities are missing priced. Technical analysis, the analysis conducted on the basis of past history to predict future trend and fundamental analysis that calculates the intrinsic values of share are conducted. Fundamental analysis, tries to identify the real or true value of financial assets.

e. Portfolio Performance Evaluation

It determines performance of portfolio periodically regarding the return earned and risk experienced by the investor. The performance should be evaluated not only in

the terms if the returns but also the risks experienced. To evaluate the performance appropriate measures and standards are needed.

2.2 Review of NRB Directives and the Relevant Acts

Nepal Rastra Bank established in 2013 B.S. is the central bank of Nepal. It's determining role in economic plans and implementation in the country is major. The main objective of the Nepal Rastra bank is to manage the economic financial transaction over the country. Systematically allocation management and implementation of economic factors over the state is governed by Nepal Rastra Bank, as a central bank. All the economic plans programs policy strategies, implementation evaluation made by government are performed under the direction of NRB. So, All the commercial banks have to confirm to the act, provisions specified in the commercial bank act 2031 and rules and regulation formulated to facilitate the smooth running of commercial bank. Central Bank NRB has established a legal frame work by formulating various rules and regulation to mobilize or invest the deposit of the bank in different sectors of the different parts of the nation, to prevent them from the financial problems in fact, NRB controls the overall activities made by the commercial banks as well as establishment or operation or dissolution of banks For so NRB has formulated commercial banks act 2031 for the establishment and operation of commercial banks. Hence, the directions rules regulations directed by NRB in terms of investment by commercial banks are briefly mentioned below (NRB rules 2067).

1.) Establishment of New Commercial Banks

NRB has enhanced liberal policy of establishment new commercial banks in Nepal. For such objectives NRB has regulated the following directions.

- A minimum of Rs 2000 million of paid up capital is required for opening a new bank inside the Kathmandu valley.
- Similarly as per direction by NRB, Rs 120 million necessary for starting bank business out of Kathmandu.
- In the same way Rs 50 million paid up capital are necessary for opening centre office of bank out of Kathmandu.
- Commonly for establishing the commercial bank in rural areas, NRB has directed Rs 30 million as compulsory paid up capital.
- The investors can invest his/her fund up to 10% of the paid up capital of each and 15% of paid up capital of all banks in average.
- Basically the commercial bank can be invested maximum up to 70% of total paid up capital if the bank is promoted by domestic investors and 30% of paid up capital should be as liquidity margin for repayment for certain deposit.
- Individually, firm or company or groups or company can invest up to 110% of paid up capital.
- For joint venture bank foreign investors can invest minimum 40% of paid up capital and 50% as maximum, such bank should manage 30% of paid up capital as floatation for general public.
- Applications for the establishment of new banks are to be adopted within the stipulated time fixed by NRB.

2.) Investment in Priority Sectors

NRB has directed commercial banks to extent at least twelve percent of its total outstanding credit to priority sector as agriculture sector, cottage and small industry sectors service oriental sector co-operative sector etc. This prevision is totally based on the objective for up lifting life style of people in remote and village area.

3.) Investment in Co-operative Sectors(Deprived Sectors)

The co-operative institution, rural development banks, etc which are licensed by NRB are also to be compulsory investment by commercial banks in certain ratio determined to each banks. As per such regulation JVB have to invest 3% of total outstanding credit for co-operative sectors.

4.) Directives for single Borrower Credit

With the objectives to lowering the risk of over concentration of bank loans to a few big borrowers and to increase the access of small and middle size borrower to the bank loans. NRB directed commercial banks to seat on upper limit on the amount loan financed to an individual firm, Company or group of companies. NRB has barred the single borrower credit limit as 35% in the case of fund based credit and 50% in the case of non fund based credit, such as letter of credit acceptance letter etc.

5.) Credit for shareholders

The individual or group who holds more than 1% of shares of the commercial bank can't borrow from some bank under the directions from NRB-2062 B.S.

6.) Directives regarding interest rate spread

As per the directives of NRB about interest rates, commercial banks could increase interest rates in deposits more than 0.5% in published rate but they could not charge higher interest rate than published rate while providing loans.

7.) Provision for Minimize liquidity risk

Commercial banks are required monitor their liquidity risk. This is to minimize risk inherent in the activities and portfolio of the banks. According to the regulation a gap found between maturing assets and maturing liabilities is the liquidity risk. They are monitoring their assets and liabilities on the basis of maturity period. Maturity periods such as 0-90days, 90-180 days, 180-270 days, 270-365 days and above 1 year are classified for the purpose of checking.

To minimize liquidity risks of commercials banks NRB has directed to limit its sources of funds in investment to 80% of total deposits and capital.

8.) Cash Reserve Requirements (CRR)

To ensure adequate liquidity in the commercial banks, to meet the depositors' demand for cash at anytime and to inject the confidence in depositors regarding the safety of their deposited funds, commercial banks are required to have maximum CRR. In this regard, NRB has directed commercial banks to deposit minimum 5.5% of total deposits (current, saving, call and fixed deposits) in the NRB as primary cash reserve.

2.3 Review of Journals and articles

Various articles were published on financial impact, which deals in the context of Nepalese commercial banks and financial sector of Nepal some of the articles are reviewed briefly.

Ramesh Lal Shrestha (1998), Study on "A study on Deposit and Credits of Commercial Banks in Nepal" concluded that the credit deposit ratio would be 51.30% other things remaining the same in Nepal, which was the lowest under the period of review. Therefore he had strongly recommended that the joint venture banks should try to give more credit entering few field

as far as possible, otherwise they might not be able to absorb even the total expenses.

Chopra in his article (1999), “Role of foreign banks in Nepal” has conducted the joint venture banks playing an increasingly dynamic and vital role in the economic development of the country that will undoubtedly increase with time.

Sunity Shrestha (1999) in her article, “Lending operation of commercial Banks of Nepal and its impact on GDP” has presented with the objectives to make an analysis of contribution of commercial banks lending to the gross domestic product (GDP) of Nepal. She has set hypothesis that there has been positive impact of lending of commercial banks to the GDP. In research methodology, she has considered GDP as the dependent variable and various sectors of lending viz. Agriculture, industrial, commercial service and general multiple regression technique has been applied to analyze the contribution.

The multiple analyses have shown that all the variables except service sector lending have positive impact on GDP. Thus, in conclusion she has accepted the hypothesis i.e. there has been positive impact by the lending of commercial banks in various sectors of economy, except service sector investment.

Pant, Uttam Raj (2003) in his thesis paper. “A study of commercial bank deposit and its utilization” had made an attempt to highlight the discrepancy between resources collection and resources utilization. He concluded that commercial banks failure in resource utilization is due to their lending confined to short terms only. So, he recommended the commercial banks to give emphasis also on long and medium term lending for better utilization of the deposits.

Panthi (2004), highlights in his article entitled “The importance of human resource management” published in souvenir of RBB where the banking services

are only made by human skills. If the size of the employees is suitable and skillful, the optimum objectives of the bank will be nearer to achievement. The objectives of the profitability and the liquidity of the bank may be fulfilled if only if its human resources are perfect in and suitable in quality. So, the selecting process of human resources should go through the straightway of identifying workforce requirement recruiting-selecting-placing-promoting-appraising-training and retirement.

2.4 Review of Thesis

Upendra Tuladhar (2000) has conducted a thesis research on “A Study of Investment Policy of Bank of Kathmandu Limited in Comparisons to other JVB’s of Nepal”.

The basic objectives of this study were:

- To study the fund mobilization and investment policy with respect to fee based off- balance sheet transaction and fund based on balance sheet activities.
- To evaluate the liquidity, efficiency, assets management and profitability position.
- To evaluate the growth ratios of loan & advances and total investment with respective growth rate of total deposit and net profit.
- To evaluate the trends of deposit utilization towards total investment and loan advances and its projection for five next years.
- To perform an empirical study of the customer’s view and ideas regarding the existing service and adopted investment policy of the joint venture banks.
- To provide suggestion and recommendation on the basis of this study.

His Major findings

- BOKL has maintained adequate liquidity than other JVB"s. It is in a better position to meet current obligation.
- BOKL has successfully maintained and managed its assets towards different income generating activities.
- The profitability position of BOKL is higher than other JVB"s.
- BOKL has invested higher portion of total working fund in government securities than other JVB"s. BOKL"s loans and advance to total deposit ratio is less than other JVB"s.
- BOKL has the largest profit margin in comparison with other JVB"s.

Samiksha Thapa (2001) has conducted a thesis research on "A Comparative Study on Investment Policy of Nepal Bangladesh Bank and other JVB's (NIBL Bank Limited and Nepal Investment Bank Limited and Nepal Grindlays Bank Limited)".

The research study is based on the following specific objectives:

- To evaluate the liquidity, assets management efficiency, profitability and risk position of NBBL in comparisons to NIBL and BOKL.

- To analyze the relationship between loan and other advances and other investment with other financial variables of NBBL and compare them with NIBL & BOKL.
- To examine the fund mobilization and investment policy of NBBL through off-balance sheet and on balance sheet activities in comparisons to the other two banks.
- To study the various risk in investment of NBBL in comparison to NIBL & BOKL.
- To analyze the deposit utilization trend and its projection for next five years of NB Bank and compare it with of NIBL & BOKL.

The major findings of the study were as follows:

- NBBL has good deposit collection, enough liquidity, it has sanctioned enough loan and advances, but it has made negligible amount of investment in government securities.
- NBBL is in a weak position regarding its on balance as well as off balance sheet activities.
- Profitability position of NBBL is comparatively worse than that the NIBL & BOKL.
- The credit risk ratio, interested risk ratio of NBBL is higher than BOKL & NIBL. It is exposed to more risk.

- NBBL has been successful in increasing its source of fund and its mobilization. The growth ratio of total investment of NBBL is comparatively worse than the other two JVB"s.
- There is significant relationship between deposit and loan and advance, outside assets and net profit of NBBL but there is no relationship between deposit and investment of NBBL.
- The position of NBBL in regard to utilization of fund to earn profit is not better in comparison to NIBL & BOKL.
- The cost of fund of NBBL is competitively higher than NIBL & BOKL.

S.T Bhandari, (2004) has conducted a study on "Investment Policy of Commercial Banks with special reference to Nepal SBI Bank Ltd." with the objectives of:

- To evaluate the liquidity, asset management, efficiency, portfolio management and profitability position of the bank.
- To analyze adopted utilization and its relationship with total investment and net profit of the bank.
- To determine the growth rate of the bank in terms of deposit, loans, and advances, investment and probability of the bank.
- To determine the proportion of loan-loss provision to total loans and advances and to evaluate the non-performing assets position of the bank.

- To determine the proportion of the investment made by the bank in risky and risk-free assets and to evaluate the off-balance sheet operation of the bank.
- To suggest measures to improve the investment policy of the bank.

The research was conducted mainly on the basis of secondary data. The research findings of the study are summarized as follows:

- Liquidity position of the bank is good enough to meet the short-term obligation but shows the lack of additional fund management to income generating assets.
- Similarly the bank does not seem to have proper policy to increase the fee-based OBS transaction in comparison to loan and advances.
- Bank should be careful of Non-performing loans and adopting the appropriate policies to solve the problem although bank has been able to reduce this NPA proportion significantly to total loan advances forthcoming year after 2001.
- Despite this Bank has been able to meet the NRB obligations it does not have accepted prioritized priority sector in loaning even it was in increasing trend.
- Because of decreasing profitability scenario over the years accounts investment policy adopted by the bank is not appropriate and it does impact in the growing process negatively. Despite the substantial increment to the

amount of loans & advances, profitability has not increased enough shows the lack of overall investment policy in income generating sectors

Neeta Thapa (2006) has conducted a research entitled "Investment Policy of Commercial Banks in Nepal".

The objectives of the study were:

- To evaluate liquidity, activity and profitability ratios of RBB in comparison with NBL and industry average.
- To analyze the relationship of loan and total investments with total deposit and net profit of RBB and to compare it with that of NBL and industry average.
- To use trend analysis to compare loan and advance, total investment, total deposit and net profit of RBB and compare the same with other two.
- To examine the loan loss provision of RBB and NBL.
- To provide suggestion and recommendation on the basis of findings.

The major findings of the study were:

- RBB has good deposit collecting, enough loan and advance and investment in government securities. It has comparatively better liquidity position than NBL.

- RBB and advance is in comparatively better position regarding issue of loan and advance but it does not have good position in regarding investment in shares and debentures of other companies, off balance sheet operation. Loan loss ratio shows low quality of loan and advance.
- The profitability position of RBB and advance is worse. RBB and advance needs to take immediate steps to increase its profitability.
- There is significant relationship between deposit and loan and advance. There is insignificant relationship between deposit and investment, and outside assets and net profit.

Puja Bhatta (2008) has conducted a research of “Comparative Study on Investment Policy of Nepal Investment Bank and Himalayan Bank”.

The objectives of the study were:

- To compare investment policies of concern banks and discuss the fund mobilization of these two banks.
- To evaluate the liquidity, asset management efficiency, profitability and risk position of Investment Bank and Himalayan Bank Ltd.
- To determine the growth rate of bank in terms of deposit, loan and advances investment and profitability of the banks.
- To provide suitable suggestion and recommendation for the improvement of the bank’s performance.

The major findings of the study are

- The liquidity position of the Nepal investment bank limited is comparatively higher than that of the Himalayan bank limited. Himalayan bank limited has the highest investment on government securities to current ratio.
- NIBL has better investment policy, liquidity position, loans advances profitability ratio, and growth rate is also good. Similarly, investment position of NIBL is not good enough. But it has better risk ratio.
- HBL has also better total investment to total deposit, investment on government securities to current asset, investment on government securities to total working fund, investment on shares and debentures to total working fund and assets management.

Ahalya Tapol Shrestha (2009) has conducted a thesis on “Investment Practice of Commercial Banks in Nepal”(A comparative study of Nabil Bank Ltd and Nepal Investment Bank Ltd).

The basic objectives of the study are:

- To evaluate the liquidity, profit & risk position of NABIL and NIBL
- To find out the relationship between different variables like investment, deposits loan and advances, net profit & compare them between NABIL & NIBL.
- To analyze the utilization of available fund of NABIL & NIBL.
- To analyze the investment practice of NABIL & NIBL.

The study is based on the secondary data. The major findings of the study are as follows.

- The liquidity position of NIBL is comparatively better than NABIL. NIBL has the highest cash and bank balance to total deposit ratio and loan and advances to current assets ratio than NABIL. But NABIL investing position of current assets as govt. securities is higher than NIBL.
- Asset management position of NABIL is less effective in comparison to NIBL.
- The profitability position of NABIL is better than NIBL. It has highest return on loan and advances ratio, total interest earned to total deposit asset ratio and return on equity than NIBL. NIBL has not maintained better position in comparison to NABIL.
- NIBL has higher degree of liquidity risk and credit risk in comparison to NABIL.
- There is positive relationship between deposit & loan and advance of NABIL and NIBL. The relation between deposit & loan and advances is significant. The both banks are successful to mobilize their deposit in proper way as loan and advance whereas relation between deposit and total investment there is no significant different between the both banks.

2.5 Research Gap

Investment in different sectors is made on the basis of the directives and circulars of Nepal Rastra Bank as well as the investment guidelines and policy of

the concerned commercial bank. The directives of NRB change over time. NRB makes necessary amendments in prevailing directives and circular and communicates to commercial banks. Commercial banks should follow their directives and circular furthestmost their own investment guidelines and polices should be in line with NRB directives and circulars. So, the up to dated study over the change of time frame is major concern for the researcher and concerned organization as well as industry as a whole. This study covers the more recent financial data NRB circulars and guidelines than that of studies previously conducted.

The optimum diversification of loan and advances reduced the default risk of credit. It is the major concern of stake holders to know the portfolio behavior of the bank. This study puts its effort to find out the proportion to total loan and advances of the bank disbursed to different sectors of economy and analyses the diversification of its investment. Investment function is the major function of the commercial bank.

This study fulfills the prevailing research gap about the in depth analysis of the investment policy pursued by the organization, which is the major concern of public shareholders and other stock holders. So, this study will be fruit full to those interested persons, parties, scholars, teachers, businessman, civil society and government for academically as well as policy perspectives.

CHAPTER-III

RESEARCH METHODOLOGY

Research methodology describes the method and process applied in the entire aspect of the study. It sequentially refers to the various steps to be adopted by a researcher in studying a problem with certain objectives in view. In other words, research methodology describes the methods and process applied in the entire subject of the study. This study basically helps to conclude the real position of NABIL bank and Nepal Industrial and Commercial Bank. This chapter includes research design, Population and sample, nature and sources of data, analysis of data etc.

3.1. Research Design

Research is a systematized effort to gain new knowledge. "Research design is the conceptual structure within which research is conducted". Research design indicates a plan of action to be carried out in connection with proposed research work. The research design is descriptive because the historical secondary data have been mainly deployed for analysis.

Descriptive Techniques have been applied to evaluate investment performance of NABIL and NIC bank as well as some statistical and financial tools have been adopted to examine facts. The study is designed as to give a clear picture of the bank's investment circumstances with the help of available data and with some useful suggestions & recommendation.

3.2. Source of Data

The data presented in this study are of secondary nature. The annual reports of the concerned banks are the major sources of the data for the study. The data relating to investment, deposit, loan and advances and profit are directly obtained from the balance sheet and profit and loss account of the concerned Bank's annual reports published on web sites of concern banks. Supplementary data and information are collected from number of institutions and regulating authorities like Nepal Rastra Bank and different related website.

According to the need and objectives, all the secondary data are compiled, processed and tabulated in time series. In order to judge the reliability of data provided by the banks and other sources, they were compiled with the annual reports of auditor.

Similarly, various data and information are collected from the periodicals, economic journals, managerial magazines and other published and unpublished reports and documents from various sources and websites. Formal and informal talks with the concerned staffs of the bank are also helpful to obtain the additional information of the related problem.

3.3. Population and Sample

The population refers to the industries of the same nature and its services and product in general. Thus, the total commercial banks shall constitute the population of the data and the two banks under the study constitute the sample under the study. So, among the various Commercial banks under the banking industry, NABIL Bank Ltd and Nepal Industrial and Commercial Bank (NIC) are considered as a sample of the study. However, the performance of the development banks, finance companies, co-operatives, etc is not considered in the calculation of the population in the study.

3.4. Data Collecting Procedures

The Annual Report of concerned banks was obtained from field visiting of these banks especially from their corporate office. The data on some of aspects of these banks was obtained from the website of Nepal Stock Exchange. The reference of NRB directives has been executed from website of NRB and the some part of the annual report of subjected banks has been executed from their websites.

3.5. Analysis of data

Analysis of data is an important part of any study. In another words analysis of data is almost a study itself. All the result of the study is obtained from the analysis part. In this study analysis of data is interpretation, evaluation and measurement of performance of subjected banks via financial data available by them in annual reports. Following tools shall analyze the data presented in the study.

3.5.1 Financial Tools

Financial analysis is the process of identifying the financial strength and weakness of the form by properly establishing relationship between the items of the balance sheet. In this study ratio analysis are used as the financial tools for the data analysis.

Ratio Analysis

“The relationship between two accounting figure, expressed mathematically, is known as financial ratio (or simply as ratio). (Pandey, 2000:)

Ratio analysis is used to compare a firm financial performance. From the help of ratio analysis the quantitative judgment can be done regarding financial performance of a firm. It basically helps to analyze the strength and weakness of the firm. In this study different ratios which are related to the investment operation of the bank are calculated which are given below.

a).Liquidity Ratios

Liquidity means the ability of a firm to satisfy its short-term obligations as they come due. It measured by the speed with which bank assets can be converted into cash to meet deposit withdrawal and other current obligations. The following ratios are evaluated under liquidity ratio:

i). Current Ratio

A ratio between current assets and current liabilities is known as current ratio. It shows the relationship between current assets and current liabilities. Current assets are those assets which can be converted into cash within short period of time, normally not exceeding one year current liabilities are those obligations which are payable within a short period, normally not exceeding one year.

Mathematically it is represented as:

$$\text{Current ratio} = \frac{\text{Total Current Assets}}{\text{Total Current Liabilities}}$$

ii) Cash and Bank Balance to Current Assets Ratio

This ratio measures the proportion of most liquid assets i.e. cash and bank balance among the total current assets of the bank. Cash and bank balance are highly liquid assets than other in current assets portion so this ratio visualizes higher liquidity position than current ratio. This ratio can be calculated by using the following formula:

$$\text{Cash and bank balance to current assets ratio} = \frac{\text{Cash and Bank Balance}}{\text{Current Assets}}$$

iii) Cash and Bank Balance to Total Deposit Ratio (Cash Reserve Ratio)

Cash and bank balances are the most liquid current assets. This ratio measures the percentage of most liquid fund with the bank to make immediate payment to the depositor. This ratio is calculated by dividing cash and bank balance by total deposit. This can be presented as:

$$\text{Cash and bank balance to total deposit ratio} = \frac{\text{Cash and Bank Balance}}{\text{Total Deposit}}$$

Here cash and bank balance includes cash on hand and foreign cash on hand; cheques and other cash items, balance with domestic banks and balance held in foreign banks. Total deposit includes current, saving and fixed deposit, money at call & short notice & other deposits.

iv) Investment on Government Securities to Current Assets Ratio

Investment on government securities includes treasury bills and development bond. This ratio is calculated to find out the percentage of current assets invested in government securities.

This ratio is calculated by dividing investment on govt. securities by current assets. This can be presented as:

Investment on govt. securities to current assets ratio =

$$\frac{\text{Investment on Government Securities}}{\text{Current Assets}}$$

v) Loan and Advances to Current Assets Ratio

It is the relationship between loans and advances to current assets or it shows the banks liquid capacity. Loan and advances of a bank basically includes different type of loans lend by the bank to the customers in different sector i.e bills discounted and purchased and loans, cash credit and overdraft in local currency as well as in convertible foreign currencies. The ratio is calculated as:

$$\text{Loan and advances to current assets ratio} = \frac{\text{Loan and Advances}}{\text{Current Assets}}$$

b).Assets Management Ratios (Activity Ratio)

Activity ratios are employed to evaluate the efficiency with which the firm manages and utilizes its assets. These ratios are also called turnover ratios because they indicate the speed with which assets are being converted turnover into sales. Asset management ratio measures how efficiently the bank manages the resources at its command.

The following ratios are used under this asset management ratio.

i) Loan and Advances to Total Deposit Ratio

This ratio is calculated to find out that which banks are able to utilizing their total deposits on loan and advances for profit generating purpose. This ratio can be obtained by dividing loan and advances by total deposits, which can be states as:

$$\text{Loan and Advances to Total Deposit Ratio} = \frac{\text{Loan and Advances}}{\text{Total Deposit}}$$

ii) Total Investment to Total Deposit Ratio

This ratio implies the utilization of firm's deposit on investment in government securities and share debentures of other companies and bank.

This ratio can be calculated by dividing total investment by total deposit. This can be states as:

$$\text{Total Investment to Total Deposit Ratio} = \frac{\text{Total Investment}}{\text{Total Deposit}}$$

Hence, total investment consist investment on government securities, investment on debenture and bonds, share in subsidiary companies, share in other companies and other investment.

iii) **Loan and Advances to Working Fund Ratio**

Loan and advances is the major components in the total working fund, which indicates the ability of banks are successful in mobilizing their loan and advances on the working fund ratio for the purposes of income generator is computed by dividing loans and advance by total working fund. This is sated as:

$$\text{Loan and Advances to Working Fund Ratio} = \frac{\text{Loan and Advances}}{\text{Working Fund Ratio}}$$

Here Total working fund includes all assets of on balance sheet items. In other word this includes current assets, net fixed assets, loans for development bonds and other investment in share, debenture and other etc. Higher the ratio, higher the utilization higher the profit and, at the same time higher the risk.

iv) **Investment to Government Securities to Total Working Fund Ratio**

This ratio shows the banks investment on government securities in comparison to the total working fund. This ratio is calculated by dividing investment on government securities by total working fund. This is presented as:

$$\text{Investment on Govt. Securities to Total Working Fund Ratio} =$$

$$\frac{\text{Interest on Govt. Securities}}{\text{Working Fund Ratio}}$$

v) Investment on Shares and Debentures to Total Working Fund Ratio

The Purpose of this ratio is to measure the successfulness of mobilizing the total working fund to shares and debenture. Share and Debenture are long term Investment. Banks should invest in long term securities by maintaining a liquidity position. The investment risk can be diversified with the help of portfolio management. This ratio can be computed by dividing investment on shares and debentures by total working fund. This can be stated as:

Investment on Shares & Debentures to Total Working Fund Ratio

$$= \frac{\text{Investment on Shares and Debentures}}{\text{Working Fund Ratio}}$$

c) Profitability Ratios

Profit is the difference between revenues and expenses over a period of time. A company should earn profit to survive and grow over a long period of time, and it will have no future if it fails to make sufficient profits. Profitability ratios are very helpful to measure the overall efficiency of operations of a firm in terms of profit. It is a true indication of financial performance of any institutions. Higher the profit ratio, the higher will be the efficiency bank and vice versa. Profitability position can be evaluated through following different ways:

i) Return on Loan and Advance Ratio

This ratio indicates how efficiency the bank has employed its resources in the form of loan & advances. This ratio is computed by dividing net profit (loss) by loan and advances. This can be expressed as:

$$\text{Return on Loan and Advance Ratio} = \frac{\text{Net Profit}}{\text{Loan \& Advances}}$$

ii) Return on Total Working Fund Ratio

This ratio measures the overall profitability of all working funds i.e. total assets. A firm has to earn satisfactory return on assets or working fund for its survival. This ratio is calculated by dividing net profit by total working fund. This can be express,

$$\text{Return on Total Working Fund Ratio} = \frac{\text{Net Profit}}{\text{Working Fund Ratio}}$$

iii) Total Interest Earned to Total Outside Assets Ratio

This ratio measures the interest earning capacity of the bank through the efficient utilization of outside assets. Higher ratio implies efficient use of outside assets to earn interest. This ratio is calculated by dividing total interest earned by total outside assets; this can be expressed as:

$$\text{Total Interest Earned to Total outside Assets Ratio} = \frac{\text{Total Interest Earned}}{\text{Total Outside Assets}}$$

iv) Total Interest Earned to Total Working Fund Ratio

This ratio is calculated to find out the percentage of interest earned to total assets (working fund). Higher ratio implies better performance of the bank its terms of interest earning on its total working fund. This ratio is calculated by dividing total interest earned by total working fund. This can be expressed as:

$$\text{Total Interest Earned to Total Working Fund Ratio} = \frac{\text{Total Interest Earned}}{\text{Total Working Fund}}$$

Where, total interest earned includes, interest on loan, advances and overdrafts, government securities investment debentures and other interbank loans.

v) Total Interest Paid to Total Working Fund Ratio

This ratio is calculated to find out the percentage of interest paid on liabilities with respect to total working fund. This ratio measures the percentage of total interest expenses against total working fund. A high ratio indicates higher expenses on total working fund and vice-versa. This ratio is calculated by dividing total interest paid by total working fund. This can be expressed as:

$$\text{Total Interest Paid to Total Working Fund Ratio} = \frac{\text{Total Interest Paid}}{\text{Total Working Fund}}$$

d) Risk Ratios

The possibility of risk makes a bank's investment a challenging risk. Bank has to take risk to get return on its investment. The risk taken is compensated by the increase in profit. So, a bank has to have idea of the level of risk that one has to bear while investing funds. The proper risk management increase effectiveness and profitability of the bank. Risk ratios indicate the amount of risk associated with the various banking operations which ultimately influences the banks investment policy. The following ratios are evaluated under this topic:

i) Liquidity Risk Ratio

This ratio measures the level of risk associated with the liquid assets i.e. cash, bank balance that are kept in the bank for the purpose of satisfying the

deposit demand for cash. This ratio is calculated by dividing total cash and bank balance by total deposits.

The ratio can be computed as:
$$\text{Liquidity Risk Ratio} = \frac{\text{Total Cash \& Bank Balance}}{\text{Total Deposit}}$$

ii) **Credit Risk Ratio**

Credit risk ratios measures the possibility that loan will not be repaid or that investment will deteriorate in quality or go into default with consequent loss to the bank. By definition, credit risk ratio is expressed as the percentage of non-performing loan to total loan & advances. This ratio is calculated by dividing total loan and advances by total assets. This can be mentioned as:

$$\text{Credit Risk Ratio} = \frac{\text{Total Loan and Advances}}{\text{Total Assets}}$$

iii) **Capital Risk Ratio**

The capital risk ratios of a bank indicate how much asset values may decline before the position of depositors and other creditors jeopardize. The capital risk is directly related to the return on equity (ROE). Higher the ratio, low is the capital risk. This ratio is computed by dividing capital (Paid up Capital + Reserves) by risk- weighted assets as computed under BASLE committee's formula. This can be mentioned as,

$$\text{Capital Risk Ratio} = \frac{\text{Capital (Paid up + Re serves)}}{\text{Risk Weighted Assets}}$$

e) Growth Ratio

Growth ratios measure how well the firm is maintaining its economic position in its industry. It is directly related to the fund mobilization and investment management of a commercial bank. Higher the ratio, better the executing of the bank and vice-versa.

The following growth ratios are calculated in this study.

- i. Growth ratio of total deposit
- ii. Growth ratio of total investment
- iii. Growth ratio of net profit

3.5.2 Statistical Tools

Statistical methods are the mathematical techniques used to facilitate the analysis and interpretation of numerical data secured from groups of individuals or groups of observations from a single individual. The figures provide detailed description and tabulate as well as analyze data without subjectivity, but only objectivity. The results can be presented in brief and precise language and complex and complicated problems can be studied in very simple way. It becomes possible to convert abstract problems into, figures and complex data in the form of tables.

The various statistical tools used in this study to analyze the collected data are as follows:

a) Trend Analysis

These analysis analyze the trend of deposit, loan and advances, investment and net profit of NABIL and NIC and make the forecast for the next 5 years.

- i. Trend analysis of total deposit
- ii. Trend analysis of loan and advance
- iii. Trend analysis of total investment
- iv. Trend analysis of net profit

The trends of related variable can be calculated as, $Y = a+bx$

b) Co-efficient of Correlation Analysis

The correlation co-efficient determines the relationship between the two or more variable. The case of highly correlated variable, the effect on the variable may have effect on other correlated variable when two elements have zero correlation with each other they are unrelated in any way and have zero variance positive correlation implies positive covariance.

$$r = \frac{n \sum xy - \sum x \sum y}{\sqrt{n \sum x^2 - (\sum x)^2} \sqrt{n \sum y^2 - (\sum y)^2}}$$

c) Test of Hypothesis

The objective of this test is to test the significance regarding the parameters of the population on the basis of sample drawn from the population.

Types of Hypothesis

Null Hypothesis: Null Hypothesis is denoted by $H_0: \bar{x}_1 = \bar{x}_2$. It means there is no significant difference between mean ratios of loan and advances to total deposits.

It always rejected the difference & accepts they (assumption value & actual value) are same.

Alternative Hypothesis: Alternative Hypothesis is denoted by $H_1: \bar{x}_1 \neq \bar{x}_2$. It is a mutually exclusive and complementary statement of null hypothesis i.e. there is significant difference between mean ratios of loan & advances to total deposits.

Generally, following steps are followed for the test of hypothesis.

Formulating hypothesis

Null Hypothesis

Alternative hypothesis

Computing the test statistics

Fixing the level of significance

Finding critical region

Deciding two-tailed or one tailed test

Making decision

In this topic statistic is used to find out the test of significance regarding the partner of the population on the basis of sample drawn from the population.

T-Test

If we draw a large number of small samples i.e. ($n < 30$) and compute the mean for each sample and then plot the frequency destruction of these mean, the resulting sampling distribution would be t-test. On these study sample are taken only for five years i.e. ($5 < 30$).

Assumption made for using t-test in this case is that:-

The sample size is less than or equal to 30.

The parent population from which the sample is drawn is normal.

The two samples are independent and are drawn by random sampling method.

The population variances are equal and unknown.

This test has been conducted on the various ratios related with the banking business.

- i) Test of hypothesis on loan and advances to total deposit ratios between NABIL & NIC Bank.
- ii) Test of hypothesis on total investment to total deposit ratio between NABIL & NIC Bank.
- iii) Test of hypothesis on investment on government securities to current assets ratio between NABIL & NIC Bank.
- iv) Test of hypothesis on loan and advances to current assets ratio between NABIL & NIC Bank.
- v) Test of hypothesis on return on loan and advances ratios between NABIL & NIC Bank.
- vi) Test of hypothesis on total interest earned to total outside assets ratio between NABIL & NIC Bank.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

This chapter implies the presentation and analysis of data collected from various secondary sources. The outcome of the study solely depends upon this chapter. Financial and statistical tools mentioned in the previous chapter are used here for interpretation. For the sole purpose, interpretations are categorized into two headings:

- Analysis of Financial Ratio
- Analysis of Statistical Ratio

4.1 Analysis of Financial Ratios:

Financial Ratio is the process of identifying financial strength and weakness of the firm by properly establishing relationship between the items of balance sheets. Here relevant ratio is calculated and appropriate interpretations are made. Analysis of financial ratio reflects the performance of the concern banks.

a) Liquidity Ratio

Commercial Banks must maintain its satisfactory liquidity position to satisfy the credit needs of the community to meet demands for deposit, withdrawals, Pay nation by obligation in time and convert non-cash assets into cash to fulfill immediate needs without loss of bank and consequent impact on

long run profit. The liquidity of NABIL and NIC has been calculated from following ratios.

(i) Current Ratio:

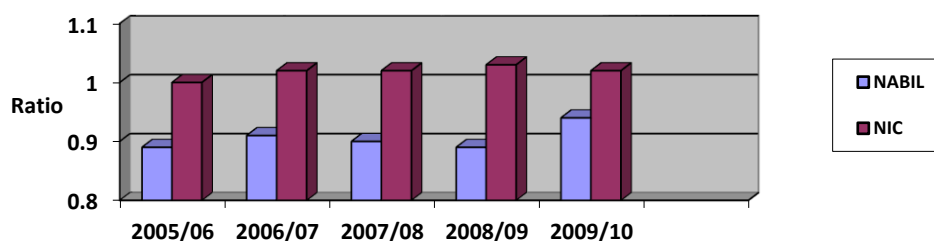
Current ratio indicates the ability of a bank to meet its current obligation. This is the broad measure of liquidity position of the financial institution. It is the relationship of current assets and current liabilities. Current assets can be converted into cash with in short period of time normally not exceeding one year. Current liabilities are those obligation which are payable with in short period. Current assets consist of each and banks balance money at call or short terms notice, loan and advances investment in government securities and other interest receivable and other miscellaneous current assets. Current liabilities consist of deposits, loan and advances, bills payable, tax provision, staff bonus, dividend payable and miscellaneous current liabilities.

Table 4.1
Current Assets & Current Liabilities Ratio (Times)
Rs in Million

Fiscal Year	NABIL	NIC
2005/06	0.89	1.00
2006/07	0.91	1.02
2007/08	0.90	1.02
2008/09	0.89	1.03
2009/10	0.94	1.03
Mean	0.91	1.02
S.D	0.02	0.01
C.V	2.29	1.20

Sources Appendix No.1

Figure 4.1
Current Ratio of NABIL and NIC



In the table 4.1 current Ratio of sample commercial banks are analyzed. The table shows that the current assets of sampled commercial banks have exceeded the current liabilities during the five years period. In general it can be said that sample bank have sound ability to meet their short term obligations in other words bank is capable of discharging the current obligations

The above table shows that the ratio of Nabil bank has increased in 2006/07 but it decreased in 2007/08 and in 2008/09 again increased in next fiscal year and about NIC bank the ratio has also increased in 2006/07, stable in 2007/08 and again increased. It shows that the ratio of sample banks is in fluctuating trend. The coefficient of variation between the current ratio of NABIL is 2.29%, which is comparatively higher than 1.20% of NIC. It shows that current ratio of NABIL is fewer consistences than NIC.

(ii) Cash and Bank Balance to Current Assets Ratio

This ratio measures the proportion of most liquid assets i.e. cash and bank balance among the total current assets of bank. Higher ratio indicates the bank's ability to meet the daily cash requirement of their customer's deposit. Bank has to balance the cash and bank balance to adequate cash for the customers demand against deposit when required and less interest is required to be paid against the cash deposit. The table below reflects the cash and bank balance to current asset ratio of NABIL and NIC from the FY 2005/06 to 2009/10.

Table 4.2

Cash and Bank Balance to Current assets Ratio

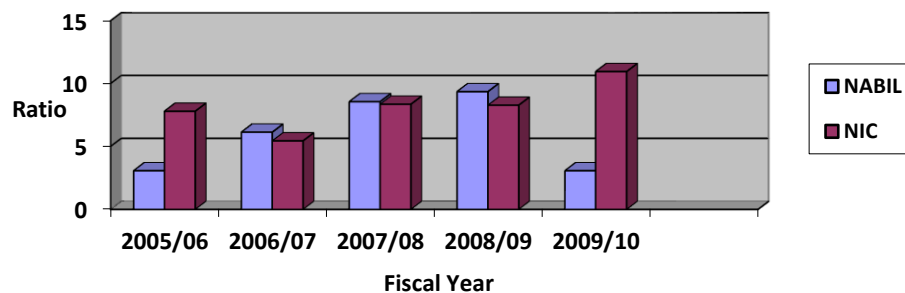
Units in Percentage

Fiscal Year	NABIL	NIC
2005/06	3.07	7.79
2006/07	6.13	5.44
2007/08	8.55	8.35
2008/09	9.35	8.27
2009/10	3.07	10.95
Mean	6.03	8.16
S.D	2.95	1.96
C.V	48.96	24.02

Sources Appendix -2

Figure 4.2

Cash and Bank Balance to Current assets Ratio of NABIL and NIC



In the above table 4.2, it shows that the ratio of sampled banks are in fluctuating trend, cash and bank balance to current assets ratio of NABIL is in increasing trend from 2005/06 to 2008/09, it has higher ratio in 2008/09 but it has decreased in 2009/10 whereas NIC goes decreased in 2006/07 and ratio has increased after 2007/08 to 2009/10. NIC has higher ratio on 2009/10. In an average NIC has maintained higher cash and bank balance to current assets ratio than NABIL. It states that the liquidity position of NIC is better in this regard.

(iii) Cash and Bank Balance to Total Deposit Ratio (Cash Reserve Ratio)

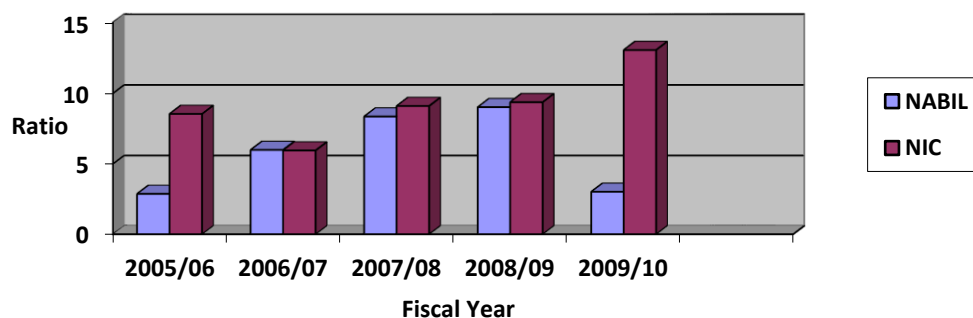
Cash and bank balance are assets that constituted banks first line of defense and consist of cash on hand, foreign cash on hand, cheques and other cash items balance with demotes banks and balance aboard. This ratio measures the proportion of most liquid assets i.e. cash and bank balance among the total current assets of bank. Higher ratio reflects the bank ability to meet demand for cash. The table 4.3 reflects cash and bank balance to total deposit ratio of NABIL and NIC from the FY 2005/06 to 2009/10

Table 4.3
Cash and Bank Balance to Total Deposit Ratio
Units in Percentage

Fiscal Year	NABIL	NIC
2005/06	2.87	8.55
2006/07	6.00	5.96
2007/08	8.37	9.11
2008/09	9.03	9.38
2009/10	3.02	13.06
Mean	5.86	9.21
S.D	2.89	2.54
C.V	49.31	27.60

Sources Appendix-3

Figure 4.3
Cash and Bank Balance to Total Deposit Ratio of NABIL and NIC



In the table 4.3 reflects the percentage of cash and bank balance to total deposit ratio position of NABIL and NIC. The mean standard deviation and

coefficient of variation of cash and bank balance to total deposit ratios are also given.

In the table the ratio of NABIL bank is increasing from 2005/06 to 2008/09 but it has decreased on 2009/10 whereas the ratio of NIC has decreased on 2006/07 then after it has increased. NIC has higher ratio on 2009/10. This shows that the ratios of both banks are fluctuating. In an average cash and bank balance to total deposit ratio of NIC is higher than NABIL. It states that liquidity position of NIC is better than that of NABIL.

The above analysis helps to conclude that, the cash and bank balance position of NABIL with respect to deposits is not better against the readiness to serve its customers deposits than that of the NIC so NABIL may invest in more productive sectors like short-term marketable securities treasury bills etc ensuring enough liquidity which will help the bank to improve its profitability.

(iv) Investment on Government Securities to Current Assets Ratio

The ratio examines Share of a commercial banks current assets which invested in different government securities i.e. treasury bills and government bonds. Commercial banks are interested to invest their collected fund on different securities issued by government to utilize their excess fund. Even governments securities are not so liquid as cash and bank balance of commercial bank but they can easily be sold in the market or it can also be converted into cash in other ways.

Table 4.4
Investment on Govt. Securities to Current Assets Ratio
Units in Percentage

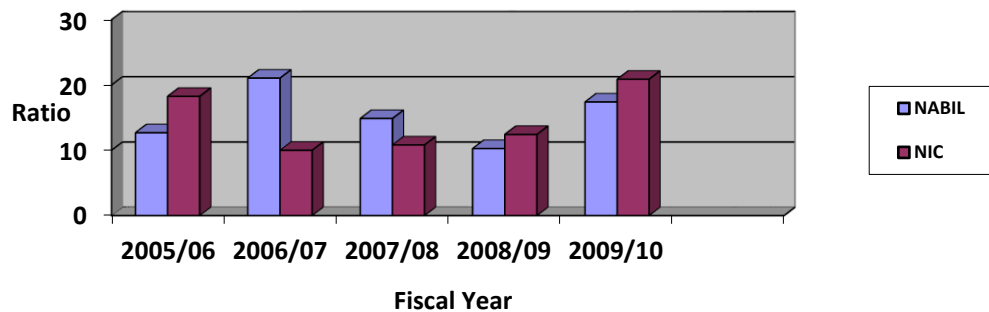
Fiscal Year	NABIL	NIC
2005/06	12.69	18.26
2006/07	21.06	10.01

2007/08	14.87	10.82
2008/09	10.27	12.43
2009/10	17.40	20.89
Mean	15.26	14.48
S.D	4.18	4.82
C.V	27.39	33.29

Sources Appendix -4

Figure 4.4

Inv. On govt. Securities to Current assets Ratio of NABIL and NIC



The table 4.4 reflects that the ratio of investment on govt.securities to current assets of NABIL has fluctuating trend, it shows that ratio has increased on 2006/07 and goes to decrease after 2007/08 to 2008/09 and again it has increased by 7.13% on 2009/10. NIC has also fluctuating trend during study period. It has higher ratio on 2009/10.

The mean ratio of NABIL is slightly higher than NIC it means that NABIL has invested its much portion of its current assets on government securities as that of NIC. The coefficient of variation of NABIL is less than NIC ($27.39 < 33.29$) it shows that investment is quite stable of NABIL than NIC.

(v) Loan and Advances to Current Assets Ratio

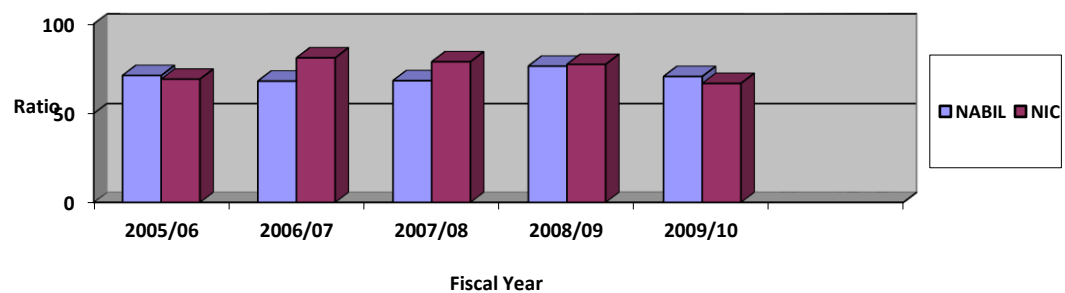
To make a high profit mobilizing its fund in the best way, a commercial bank should not keep its all collected funds as cash and bank balance but they should be invested as loan and advances to the customers. In the present study loan & advances represent to local and foreign bills discounted and purchased and loans, cash credit and overdraft in local currency as well as inconvertible foreign currency.

Table 4.5
Loan and Advances to Current Assets Ratio
Units in Percentage

Fiscal Year	NABIL	NIC
2005/06	71.26	69.20
2006/07	68.10	81.07
2007/08	68.39	78.90
2008/09	76.46	77.46
2009/10	70.70	66.85
Mean	70.98	74.70
S.D	3.36	6.28
C.V	4.74	8.41

Sources Appendix -5

Figure 4.5
Loan and Advances to Current assets Ratio of NABIL and NIC



The above table shows that both banks loan and advances to current assets ratio are in a fluctuating trend. The highest ratio of NABIL is 76.46% (F/Y 2008/09) and NIC is 81.07% (F/Y 2006/07) respectively.

In case of the mean ratio, NIC has maintained high ratio in comparison to NABIL (74.70>70.98). The higher mean ratio of loan and advances to current assets of NIC reveals that its liquidity position with regard to its current asset is more satisfactory than of NABIL. This analysis shows that NABIL use to provide less loan & advances in comparison of NIC. Its trend of providing loan & advances is consistency than NIC bank.

b) Assets Management Ratios (Activity Ratio)

A commercial bank should be able to manage its assets very well to earn high profit, to satisfy its customers and for its own existence. This ratio measures how efficiently the bank manages the resources at its commands. The following ratios are measured the assets management ratio of the NABIL and NIC in comparison.

(i) Loan and Advances to Total Deposit Ratio

This ratio actually measures the bank's ability to utilize the depositors fund to earn profit by providing loan and advances. This ratio is compute by dividing loan and advances by total deposit. A high ratio of loan and advances indicates better mobilization of collected deposits and vice-versa. But it should be noted that too high ratio might not be better from its liquidity point of view.

The following table reflects loan and advances to total deposit ratio of NABIL and NIC.

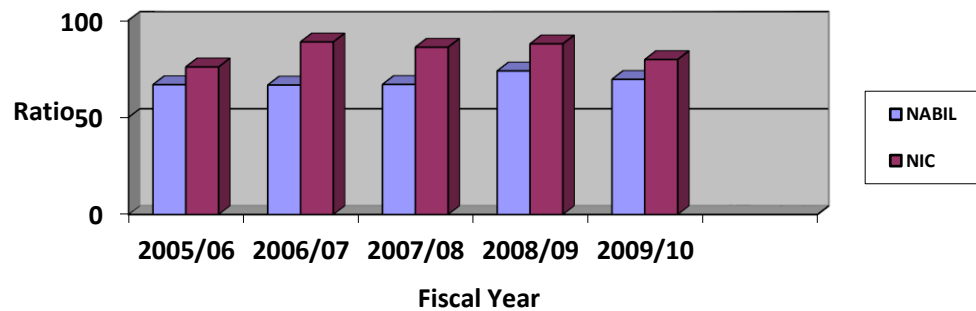
Table 4.6
Loan and Advances to Total Deposit Ratio
Units in Percentage

Fiscal Year	NABIL	NIC
2005/06	66.79	75.93
2006/07	66.60	88.81
2007/08	66.94	86.09
2008/09	73.87	87.80
2009/10	69.53	79.73
Mean	68.75	83.67
S.D	3.10	5.58
C.V	4.52	6.67

Sources: Appendix-6

Figure 4.6

Loan and Advances to Total Deposit Ratio of NABIL and NIC



In the above table the ratio of loan and advances to total deposit of NABIL has decreased by 0.19% on 2006/07 and it is slightly increased on 2007/08, and again it increase but again decrease on 2009/10 and about the ratio of NIC it has increasing trend till 2008/09 but it also decreased on 2009/10. The mean ratio of NIC is higher than that of NABIL (i.e. $83.67 > 68.75$). It shows that NIC seems to be strong to mobilize its total deposit as loan and advances in comparison to NABIL. On the basis of co-efficient of variation, we can say that NABIL loan and advances is more consistent than that of NIC because of its lower C.V. i.e. $4.52 < 6.67$.

(ii) Total Investment to Total Deposit Ratio

The commercial banks must mobilize its deposit fund by investing in different securities issued by government and other financial non financial sectors. This ratio measures the extent to which the banks are capable to mobilize their deposits on investment in various securities. A high ratio is the indicator of high success to mobilize the banking fund as investment and vice versa. This ratio is computed by dividing total investment by total deposit. Table 4.7 reflects the total investment to total deposit ratio.

Table 4.7

Total Investment to Total Deposit Ratio

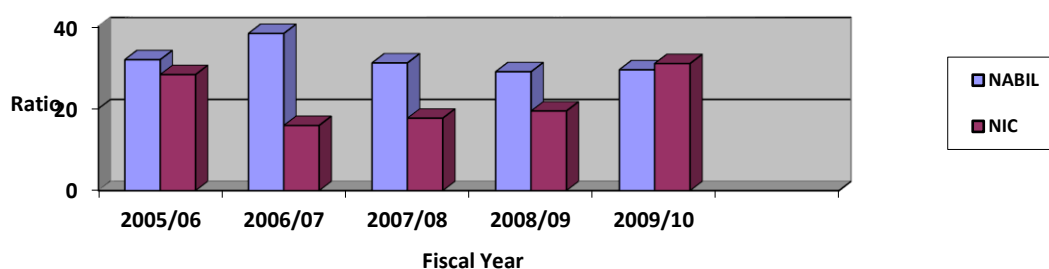
Units in Percentage

Fiscal Year	NABIL	NIC
2005/06	31.93	28.29
2006/07	38.32	15.89
2007/08	31.14	17.67
2008/09	28.99	19.42
2009/10	29.46	30.98
Mean	31.97	22.45
S.D	3.75	6.74
C.V	11.72	30.04

Source: Appendix -7

Figure 4.7

Total Investment to Total Deposit Ratio of NABIL and NIC



From the table 4.7 it is found that, total investment to total deposit ratio of NABIL and NIC banks are in decreasing and increasing trend or in fluctuating trend during study period 2005/06 to 2009/10. The total investment to total deposit ratio of NABIL has highest ratio of 38.32% in FY 2006/07 and lowest ratio 28.99% in FY 2008/09. Similarly NIC has highest and lowest ratio of 30.98% and 15.89% in FY 2009/10 and 2006/07 respectively.

In comparison with mean value, NABIL has higher than NIC i.e. $31.97 > 22.45$. Likewise the value of coefficient of variation on NABIL is lower than NIC bank. After analysis it is clear that the investment policy of NABIL is in better position in comparison to NIC bank. The total investment to total deposit ratio of NABIL is more homogeneous because it has low coefficient of variation.

(iii) Loan and Advances to Working Fund Ratio

A commercial bank's working fund should play a very significant role in profit generation through fund mobilization. The ratio reflects the extent to which the banks are successful in mobilizing their total assets of loan and advances for the purpose of income generation. A high ratio indicates a better fund mobilization as loan and advances and vice-versa.

Total working fund is the total assets. It is composed up of current assets, fixed assets miscellaneous assets, investment, loan and advances and interest receivable.

Table 4.8
Loan and Advances to Working Fund Ratio
Units in Percentage

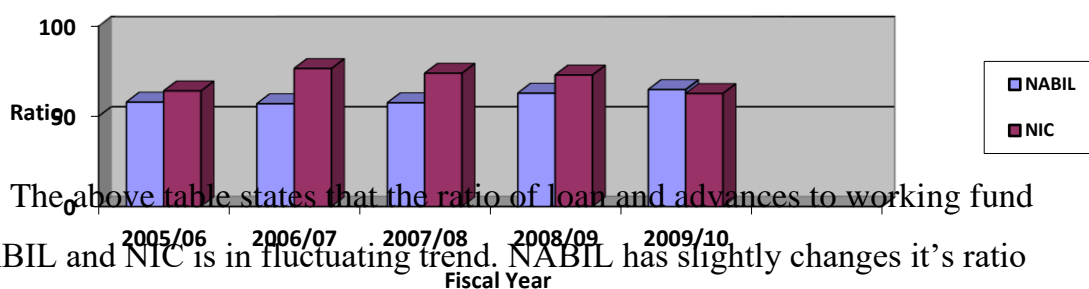
Fiscal Year	NABIL	NIC
2005/06	57.87	64.10
2006/07	57.04	76.56

2007/08	57.54	73.92
2008/09	62.89	72.95
2009/10	64.88	62.69
Mean	60.04	70.04
S.D	3.59	6.23
C.V	5.98	8.90

Source: Appendix-8

Figure 4.8

Loan and Advances to Working Fund Ratio of NABIL and NIC



The above table states that the ratio of loan and advances to working fund of NABIL and NIC is in fluctuating trend. NABIL has slightly changes it's ratio from 2005/06 to 2007/08. It has maintained its highest ratio of 64.88% in FY 2009/10, and lowest ratio of 57.04% in FY 2006/07, whereas the ratio of NIC has increased on FY 2006/07 but it has decreased thereafter.

From the above analysis, it is concluded that NIC has highest mean ratio than NABIL. It is clear that NIC is success to better mobilize its working fund as loan and advance than NABIL. The coefficient of variation of NABIL is high consistent than that of NIC i.e. C.V. of NABIL is less than NIC (5.98% <8.90%).

(iv) Investment on Government Securities to Total Working Fund Ratio

This ratio reflects the extent to which the banks are successful in mobilizing their total working fund on different types of government securities to maximize the income. All the deposits of the bank should not be utilized as loan and advances and other credit from security and liquidity point of view, Therefore,

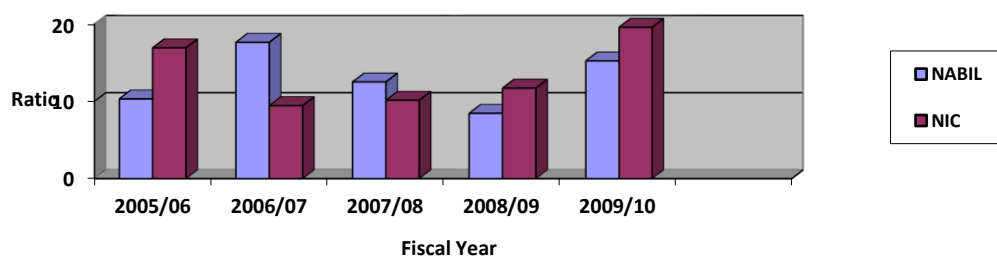
commercial banks seem to be interested to invite their deposit by purchasing government securities. A high ratio shows that better mobilization of funds as investment on government securities and vice-versa. This ratio is calculated by dividing investment on government securities by total working fund and this ratio of NABIL and NIC is presented in the following table.

Table 4.9
Investment on Government Securities to Total Working Fund Ratio
Units in Percentage

Fiscal Year	NABIL	NIC
2005/06	10.31	16.92
2006/07	17.64	9.45
2007/08	12.51	10.14
2008/09	8.45	11.71
2009/10	15.23	19.59
Mean	12.83	13.56
S.D	3.69	4.46
C.V	28.78	32.91

Source: Appendix-9

Figure 4.9
Investment on government Securities to Total Working Fund Ratio of NABIL and NIC



The above comparative table shows that the ratio of both banks is fluctuating trend in the study period. The mean ratio of NIC is 0.73% more than NABIL i.e. $13.56 > 12.83$. The comparison mean ratio of NABIL and NIC reveals

that NIC is slightly strong to mobilize their working funds as investment in government securities. The coefficient of variation of NABIL's is less than that of NIC i.e. $28.78 < 32.91$. It indicates that NABIL's ratios are consistent than that of NIC. From the above analysis, it can be concluded that both banks has invested more portion of working fund on government securities.

(v) Investment on Shares and Debentures to Total Working Fund Ratio

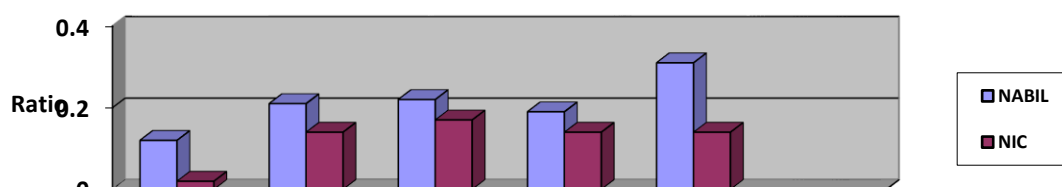
Investment on shares and debentures to working fund ratio reflects the extent to which banks are successful to mobilize their working fund in purchasing shares and debentures of other companies to generate income and utilize extra fund. The high ratio indicates the more portion of working fund investment on share and debenture and vice-versa.

Table 4.10
Investment on Shares and Debentures to Total Working Fund Ratio
Units in Percentage

Fiscal Year	NABIL	NIC
2005/06	0.12	0.02
2006/07	0.21	0.14
2007/08	0.22	0.17
2008/09	0.19	0.14
2009/10	0.31	0.14
Mean	0.21	0.12
S.D	0.07	0.06
C.V	32.47	47.94

Source: Appendix-10

Figure 4.10
Investment on Shares and Debentures to Total Working Fund Ratio of NABIL and NIC



From the above table, it is found that the NABIL and NIC have invested nominal percentage to total working fund into shares and debentures of other companies. Both banks ratios are in fluctuating trend showing the lack of efficient and uniform investment policy.

The comparison of mean ratios of NABIL and NIC, it reveals that NABIL has invested higher amount in shares and debenture than that of NIC. Moreover, CV. of NIC is highest than of the NABIL i.e. $47.94 > 32.47$ Higher C.V. of NIC ratio states that its ratios are less consistent than of NABIL.

c) Profitability Ratios

The main objectives of commercial banks are to earn profit providing different types of banking services to its customers. To meet various objectives, commercial banks must have to earn sufficient profit. In this topic mainly those ratios represented and analyzed which are related with profit as well as fund mobilization. Profitability ratios are the best indicators of overall efficiency. These ratios are calculated to measure the operating efficiency and overall performance of the financial institution. Through the fall ratios, effort has been made to measure the profit earning capacity of NABIL and NIC.

The following ratios are calculated under this profitability ratio topic.

(i) Return on Loan and Advance Ratio

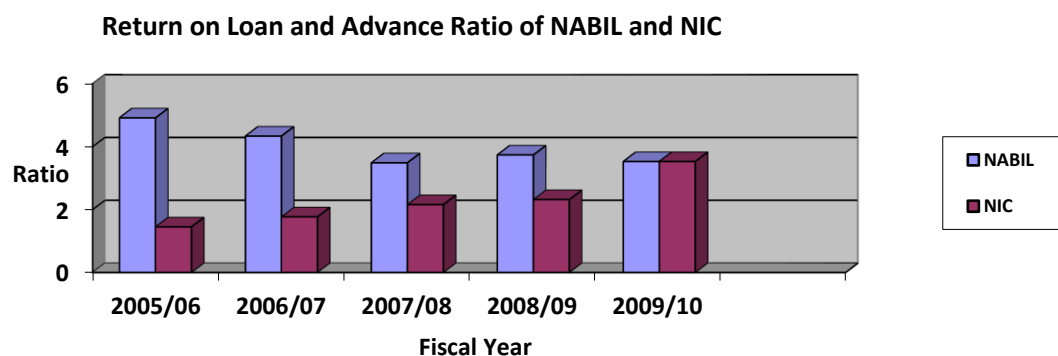
This ratio measures the earning capacity of the commercial banks through its fund mobilization as loan and advances. A high ratio indicates greater success to mobilize fund as loan and advances and vice versa. This ratio is calculated by dividing net profit by total amount of loan and advances. The following table shows the return on loan and advances ratio of NABIL and NIC.

Table 4.11
Return on Loan and Advance Ratio
Units in Percentage

Fiscal Year	NABIL	NIC
2005/06	4.92	1.45
2006/07	4.34	1.77
2007/08	3.49	2.16
2008/09	3.74	2.32
2009/10	3.53	3.53
Mean	4.00	2.25
S.D	0.61	0.79
C.V	15.35	35.35

Source: Appendix11

Figure 4.11



From the above table, it shows that the ratios of both NABIL and NIC are in fluctuating trend. During the study period, the highest ratio of NABIL is in F/Y 2005/06 i.e.4.92% and the lowest ratio is 3.49% in F/Y 2007/08. In case of NIC, the highest ratio is 3.53% in F/Y 2009/10 and the lowest ratio is 1.45% in F/Y 2005/06. On the other hand, when the mean ratios are observed, NABIL has

higher ratio than NIC (i.e.4.00% >2.25%).Likewise, high C.V.of NIC i.e. 35.35% indicates high variability of ratios than that of NABIL. Moreover, NIC's significantly high C.V. shows its less homogeneous ratios during the study period.

In conclusion it can be said that NIC to be failure to earn high return on its loan and advances in comparison to the NABIL. So, NIC has to invest their fund in productive sector to increase return ratio.

(ii) Return on Total Working Fund Ratio

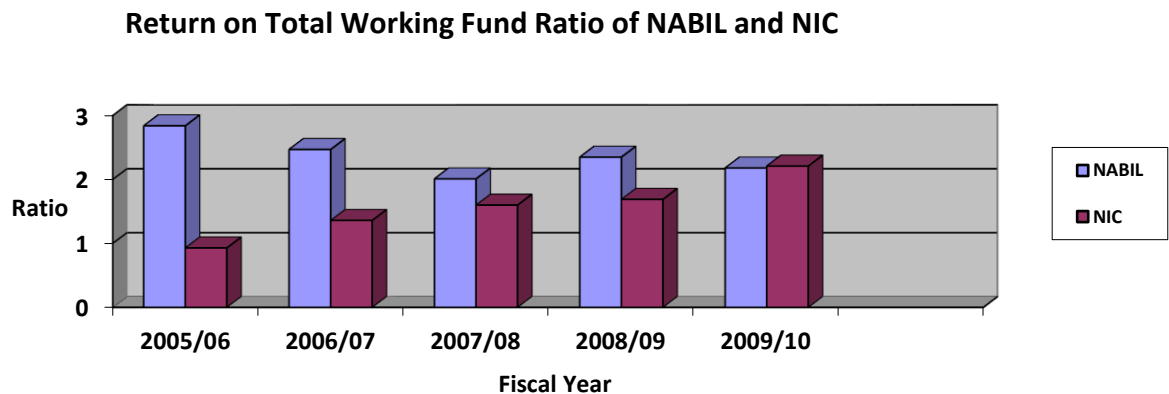
This is also known as return on assets. This ratio measures the profit earning capacity by utilizing available resources i.e. total asset. Return will be higher if the banks working fund is well managed and efficiency utilized. Maximizing taxes within the legal options available will also improve the return. Net profit includes the profit that is left to the internal equities after all charge and expenses cost. The table below shows the return on assets of NABIL and NIC.

Table 4.12
Return on Total Working Fund Ratio
Units in Percentage

Fiscal Year	NABIL	NIC
2005/06	2.84	0.93
2006/07	2.47	1.36
2007/08	2.01	1.60
2008/09	2.35	1.69
2009/10	2.18	2.21
Mean	2.37	1.56
S.D	0.32	0.47
C.V	13.29	30.07

Source: Appendix-12

Figure 4.12



In the above table the return on total working fund of NABIL has decreasing trend till 2007/08 but it is increased on 2008/09. NIC ratio was also in fluctuating trend. The highest return ratio of NABIL was 2.84% on FY 2005/06 and lowest ratio was 2.01% on FY 2007/08. Same as the highest and lowest ratio of NIC was 2.21% and 0.93% on FY 2009/10 and 2005/06 respectively.

In an average both banks are able to maintain net profit during the study period. If the mean values are observed NABIL has higher ratio than NIC (i.e. 2.37% > 1.56%).

The coefficient of variation of NABIL is lower than of NIC i.e. 13.29 % < 30.07 % it indicates the return on total working fund ratio of NABIL is stable and consistent in comparisons to NIC.

(iii) Total Interest Earned to Total Outside Assets Ratio

The outside assets have played a significant role in commercial banks as a main asset which includes loan and advances, investment on government securities, investment on share and debentures and all other types in investment. A high ratio indicates high earning on total outside assets and vice versa.

This ratio is calculated by dividing total interest earned by total outside assets. The ratio of NABIL and NIC over the study period has been tabulated below.

Table 4.13

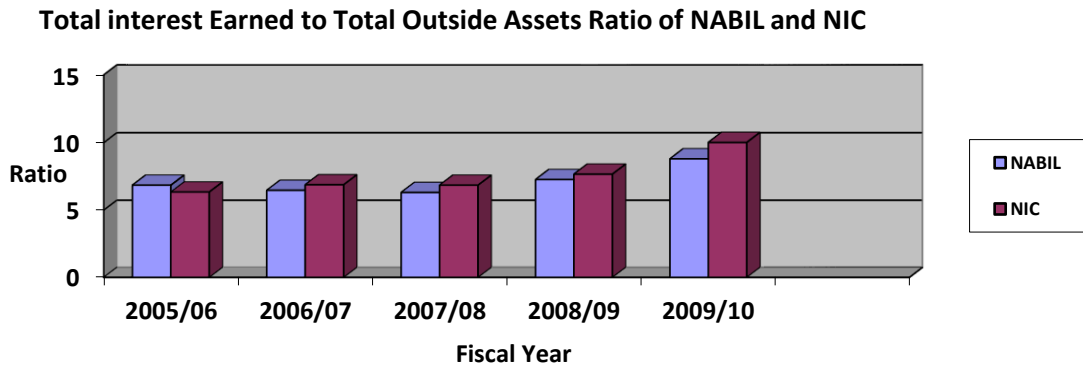
Total interest Earned to Total outside Assets Ratio

Units in Percentage

Fiscal Year	NABIL	NIC
2005/06	6.86	6.35
2006/07	6.48	6.89
2007/08	6.32	6.86
2008/09	7.28	7.68
2009/10	8.81	10.02
Mean	7.15	7.56
S.D	1.00	1.46
C.V	13.98	19.25

Source: Appendix-13

Figure 4.13



The total interest earned to total outside ratio of NABIL and NIC has fluctuating trend. In case of NABIL is it decrease after FY 2006/07 to 2007/08 i.e. 6.86%, 6.48%, 6.32% respectively and increase in year 2008/09 and 2009/10 i.e. 7.28%, 8.81% respectively similarly NIC has also same condition. The mean ratio of total interest earned to total outside assets of NIC is higher than NABIL which indicate that NABIL has not able to use in fund (outside assets) to earn high interest income in comparison to NIC bank.

If the coefficient of variation is observed NABIL has lowest than NIC i.e. 13.98% <19.25%. This reflects that total interest earned to total outside assets of NABIL is consistent. In other words it is satisfactory in compared to NIC.

(iv) Total Interest Earned to Total Working Fund Ratio

This ratio is calculated to find out the percentages of interest earned total assets. It reflects the extent to which the banks are success in mobilizing there to total assets to gain higher income as interest. Higher ratio indicates higher earning power of the banks of its total working fund.

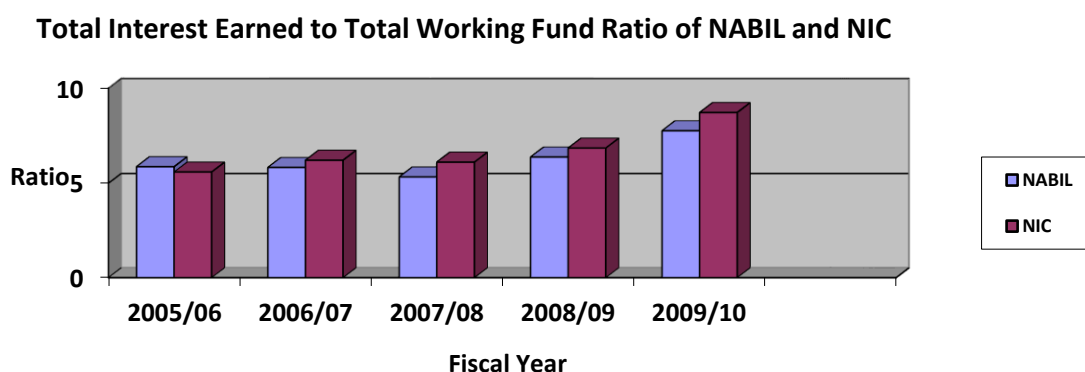
The table below shows the interest earned to total working fund ratio of NABIL and NIC.

Table 4.14
Total Interest Earned to Total Working Fund Ratio
Units in Percentage

Fiscal Year	NABIL	NIC
2005/06	5.87	5.59
2006/07	5.83	6.21
2007/08	5.33	6.11
2008/09	6.38	6.85
2009/10	7.76	8.72
Mean	6.23	6.70
S.D	0.93	1.22
C.V	14.93	18.17

Source: Appendix -14

Figure 4.14



The above table reflects that ratio of NABIL bank is in decreasing trend after the FY 2006/07 to 2008/09, and it has increase by 1.38% in FY 2009/10 i.e. 7.76%.In case of NIC it is increasing up to FY 2009/10. The mean ratio NABIL is less than NIC i.e $6.23 \% < 6.70\%$, the co efficient of variation of NIC is higher than NABIL i.e. $18.17\% > 14.93\%$.

After analysis it can be concluded that total interest earned to total working fund of NABIL is satisfactory in compared to NIC. It indicates the total interest earned to total working fund ratio is stable. NIC has highest coefficient of variation than NABIL. That means it is not successful in earning interest income because high ratio is an indicator of higher earning power of the bank of its total working fund and vice versa.

(v) Total Interest Paid to Total Working Fund Ratio

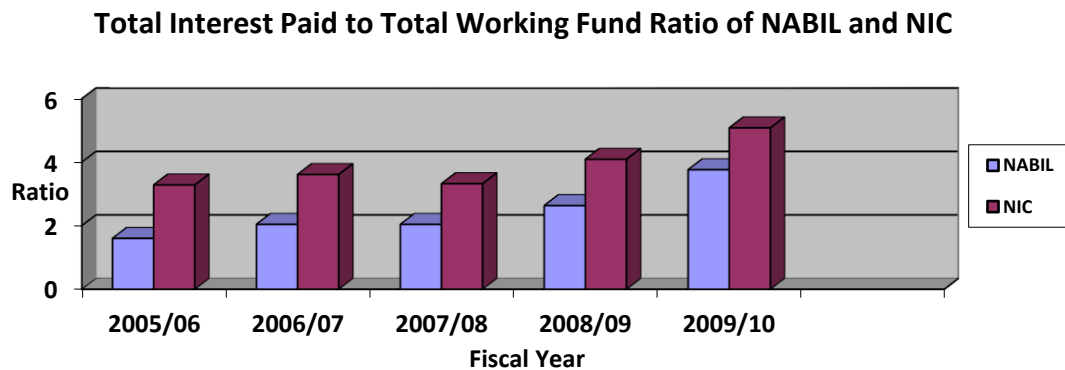
This ratio is calculated to find out the proportion of interest paid against the total working fund. Higher ratio indicated the higher interest expenses on total working fund and Vice-versa. The table below shows the mean, S.D and C.V of total interest paid to total working fund ratio

Table 4.15
Total Interest Paid to Total Working Fund Ratio
Units in Percentage

Fiscal Year	NABIL	NIC
2005/06	1.60	3.28
2006/07	2.04	3.61
2007/08	2.04	3.32
2008/09	2.63	4.09
2009/10	3.76	5.08
Mean	2.41	3.88
S.D	0.84	0.75
C.V	34.66	19.27

Source: Appendix-15

Figure 4.15



The table 4.15 reflects the total interest paid to total working fund ratio was in fluctuating trend. The ratio of NABIL has increased by 0.44% in FY 2006/07 and remains same on FY 2007/08 i.e. 2.04% and increased after FY 2008/09. In case of NIC it has also increased on FY 2006/07 then it slightly decreased by 0.29% on 2007/08 after it goes on increasing up to FY 2009/10.

In comparison of mean value of NABIL with NIC reflect that NABIL is lower than NIC i.e. $2.41 < 3.88$. It means NABIL has paid minimum interest. The coefficient of variance of NIC is lower than NABIL (i.e. $19.27 < 34.66$) which indicates that total interest paid to total working fund ratio is inconsistent than NABIL.

d) Risk Ratios

Risk ratio is very important in determining the extent of risk. The possibility of risk makes bank's investment a challenging task. Bank has to take risk to get return on investment. The risk taken is compensated by the increase in profit. Bank has to take high risk if it expects high return on its investment. So, the bank opting for high profit has to accept the risk and manage it effectively. Through the following ratios, effort has been made to measure the level of risk.

(i) Liquidity Risk Ratio

The liquidity risk ratio of a bank defines its liquidity need for deposits. The cash and bank balance are the most liquid assets and they are considered as bank's liquidity sources and deposits as the liquidity needs. The ratio of cash and bank balance to total deposits is an indicator of bank liquidity needed. The risk is low if funds are kept idle or as cash and bank balance but this affects profitability. When bank makes loan, its profitability increases and also the risk. Thus, higher liquidity ratio indicates less risk and less profitability or vice-versa

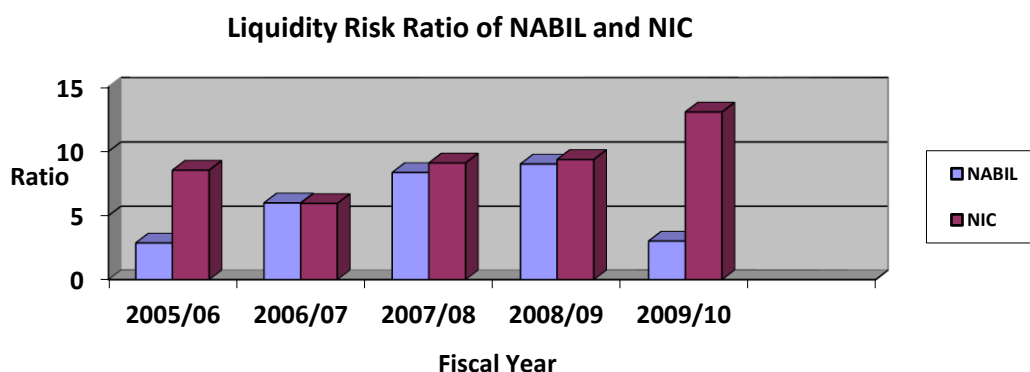
This ratio is calculated by dividing total cash and bank balance by total deposits. The following table shows the liquidity ratio of NABIL and NIC.

Table 4.16
Liquidity Risk Ratio
Units in Percentage

Fiscal Year	NABIL	NIC
2005/06	2.87	8.55
2006/07	6.00	5.96
2007/08	8.37	9.11
2008/09	9.03	9.38
2009/10	3.02	13.06
Mean	5.86	9.21
S.D	2.89	2.54
C.V	49.31	27.60

Source: Appendix -16

Figure 4.16



From the above table shows that the liquidity risk ratios of both banks have fluctuating trend. In case of NABIL, its highest ratio is 9.03% in F/Y 2008/09 and the lowest ratio is 2.87% in F/Y 2005/06. Whereas, the NIC has maintained the highest ratio is 13.06% in F/Y 2009/10 and the lowest ratio is 5.96% in F/Y 2006/07.

The mean ratio of NIC is higher than that of NABIL i.e. $9.21 > 5.86\%$. But, the C.V of NABIL is higher than that of NIC i.e. $49.31 > 27.60\%$. It indicates that NIC's liquidity risk ratios are less variable than that of NABIL.

From the above analysis, it can be said that NIC has maintains higher liquidity which means it operates with lower risk, which decrease profitability. Whereas NABIL has maintained low liquidity policy proved by higher coefficient of variation.

(ii) Credit Risk Ratio

Bank utilizes its collected funds in providing credit to different sectors. There is risk of default or non-repayment of loan. While making investment, bank examines the credit risk ratio shows the proportion of non-performing assets in the total loan and advances of a bank. But due to unavailability of the relevant data, here we presented the credit risk as the ratio of total loan and advances to total assets. The following table shows the credit risk ratio of NABIL and NIC.

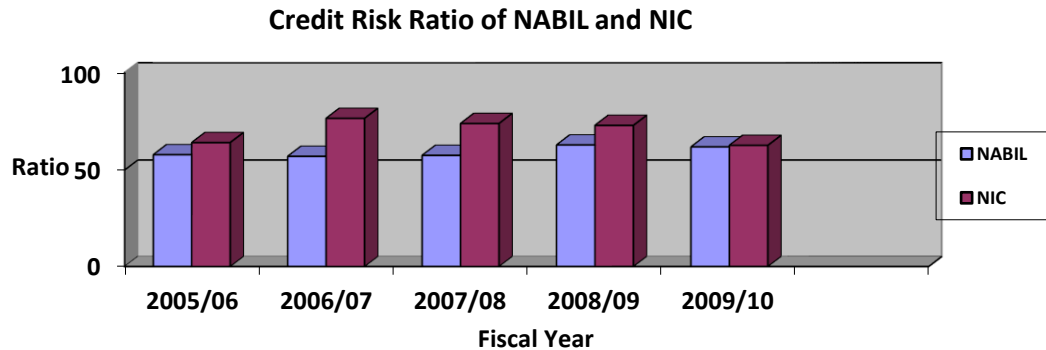
Table 4.17
Credit Risk Ratio
Units in Percentage

Fiscal Year	NABIL	NIC
2005/06	57.87	64.10
2006/07	57.04	76.56
2007/08	57.54	73.92
2008/09	62.89	72.95
2009/10	61.88	62.69
Mean	59.44	70.04

S.D	2.72	6.23
C.V	4.58	8.90

Source: Appendix-17

Figure 4.17



The above table shows that both banks have fluctuating trend. In case of NABIL, its ratio is almost same from FY 2005/06 to FY 2007/08, and then after it goes increased from FY 2008/09 to 2009/10 whereas the ratio of NIC is increase in FY 2006/07 then it declines after FY 2007/08 to FY 2009/10.

On the basis of mean ratio, it can be said that credit of NABIL is lower than NIC i.e. $59.44 < 70.04\%$. The C.V. is also lower than NIC i.e. $4.58\% < 8.90\%$ which shows that NABIL's credit risk ratios are less variable than that of NIC.

(iii) Capital Risk Ratio

Capital risk ratio measures bank ability to attract deposits and interbank funds. It also determine the level of profit, a bank can earn profit if a bank chooses to take high capital risk. The capital risk is directly related to return on equity.

Table 4.18

Capital Risk Ratio

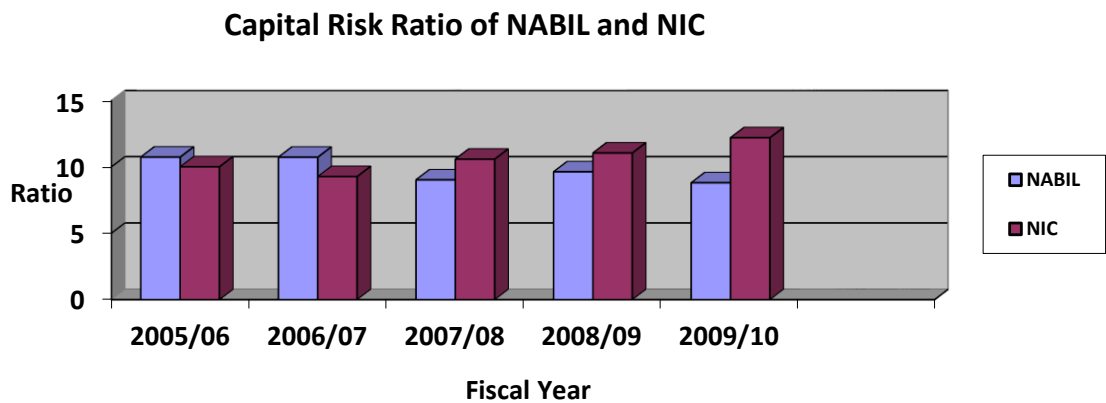
Units in Percentage

Fiscal Year	NABIL	NIC
2005/06	10.74	10.01
2006/07	10.73	9.27
2007/08	9.02	10.58
2008/09	9.63	11.05
2009/10	8.80	12.20
Mean	9.78	10.62

S.D	0.92	1.10
C.V	9.40	10.40

Source: Appendix-18

Figure 4.18



From the table 4.18 it is clearly seen that the percentage of capital risk ratio of NABIL is in decreasing trend during the study period i.e. it has maintained maximum ratio of 10.74% in the FY 2005/06 and it has minimum ratio of 8.80% in the year 2009/10. Similarly NIC has maximum ratio of 12.20% in the FY 2009/10 and minimum ratio of 9.27% in the FY 2006/07. The mean value of NIC has highest capital risk ratio in comparison to NABIL bank. The coefficient of variation of NIC is 10.40 % that is greater than that of NABIL's C.V i.e.9.40%.

Thus it can be concluded that NIC is stable and heterogeneous than NABIL but less stable and more heterogeneous in comparison to the NABIL because it has maintained more C.V among two banks.

e) Growth Ratio

Growth ratios are analyzed and interpret which are directly related to the fund mobilization and investment of a commercial bank. It represents how well the

commercial banks are maintaining their economic and financial position. Under this topics four types of growth ratio are studied which as follows:

(i) Growth Ratio of Total Deposit

This ratio can be calculated by dividing the last period figure by the first period figure then by referring to the compound interest tables. The high ratio generally indicates better performance of a banks and vice-versa.

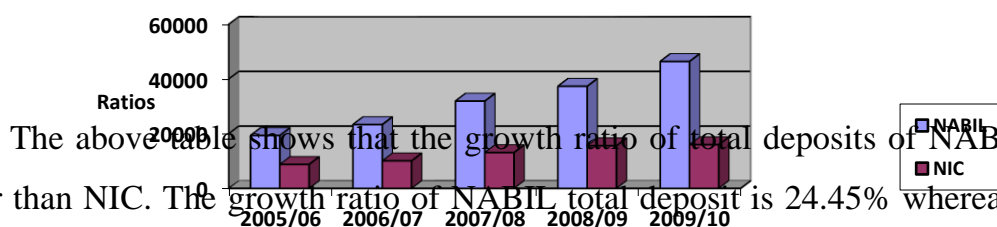
Table 4.19
Growth Ratio of Total Deposit

Units in Percentage

Fiscal Year	NABIL	NIC
2005/06	19347.40	8765.95
2006/07	23342.29	10068.23
2007/08	31915.05	13084.69
2008/09	37348.26	15579.93
2009/10	46410.7	15968.92
Growth Rate %	24.45	16.18

Source: Appendix-19 (A)

Figure 4.19
Growth Ratio of Total Deposit of NABIL and NIC



The above table shows that the growth ratio of total deposits of NABIL is higher than NIC. The growth ratio of NABIL total deposit is 24.45% whereas the same of the NIC is 16.18%. It indicates that NABIL can successful in increasing deposit funds in comparison to NIC.

(ii) Growth Ratio of Total Investment

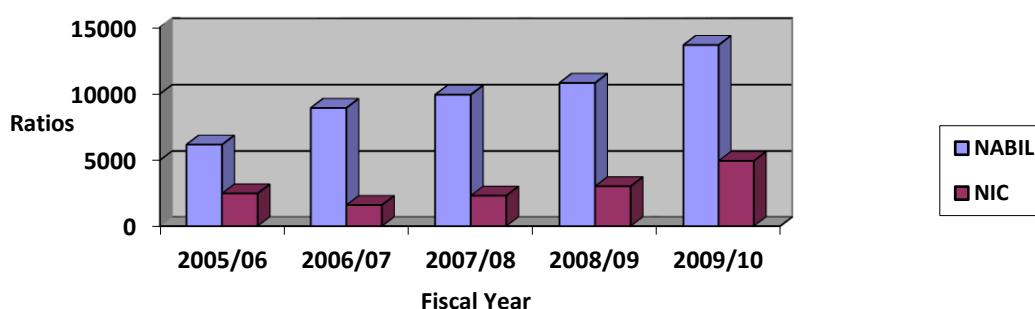
The table 4.20 reveals that the growth ratio of investment of NABIL is higher than the NIC. The growth ratio of NABIL's investment is 21.96% whereas the same of the NIC is 18.84%. It indicates that NABIL performance is better on investment of different sectors in comparison to NIC.

Table 4.20
Growth Ratio of Total Investment

Units in Percentage		
Fiscal Year	NABIL	NIC
2005/06	6178.53	2479.91
2006/07	8945.31	1599.48
2007/08	9939.77	2311.47
2008/09	10826.38	3026.02
2009/10	13670.92	4946.78
Growth Rate %	21.96	18.84

Source: Appendix-19(B)

Figure 4.20
Growth Ratio of Total Investment of NABIL and NIC



(iii) Growth Ratio of Net Profit

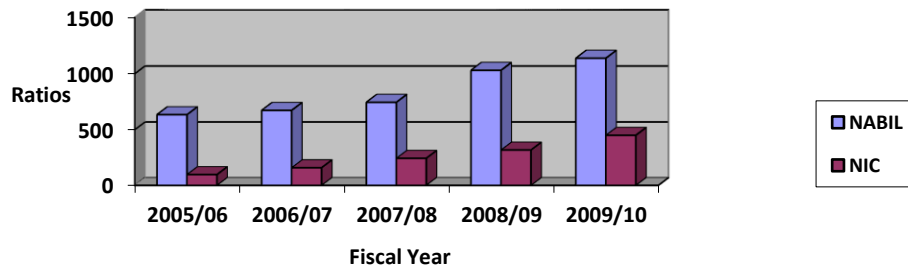
The table below 4.21 reveals that the growth ratio of net profit of NIC is higher than that of NABIL (i.e. 46.9% >15.70%). It indicates that NABIL has to invest large amount in various secured and more profitable sectors in comparison to NIC. So it clear that NIC has high growth rate in comparison to NABIL.

Table 4.21
Growth Ratio of Net Profit

Units in Percentage		
Fiscal Year	NABIL	NIC
2005/06	635.26	96.588
2006/07	673.96	158.475
2007/08	746.47	243.058
2008/09	1031.05	317.434
2009/10	1138.57	449.84
Growth Rate %	15.70	46.9

Source: Appendix-19(C)

Figure 4.21
Growth Ratio of Total Deposit of NABIL and NIC



4.2 Statistical Tools:

In order to achieve the effective of the study some essential statistical tools are used such as trend analysis, co-efficient of correlation, standard deviation, test of hypothesis which are presented as follows:

(a) Trend Analysis

Analysis of trend of loan and advances, total deposits, total investment, and total net profit of NABIL and NIC banks are estimated and forecasted for next five years. The projections are based on the following assumption.

- The main assumption is that other things will remain unchanged.
- The forecast will be true only when the limitation of least square method is carried out.
- The bank will in present stage.
- Nepal Ratra Bank will not change its guidelines to commercial banks.
- The economy will remain in the present stage.

(i) Trend Analysis of Total Deposit

The trend values of total deposit of NABIL and NIC for five years from 2005 to 2009 are given below and forecast for next five years from 2010 to 2014 is done. Regarding this topic, an effort has been made to calculate the trend values of deposit of NABIL and NIC:

Table 4.22

Trend Values of Total Deposit of NABIL and NIC

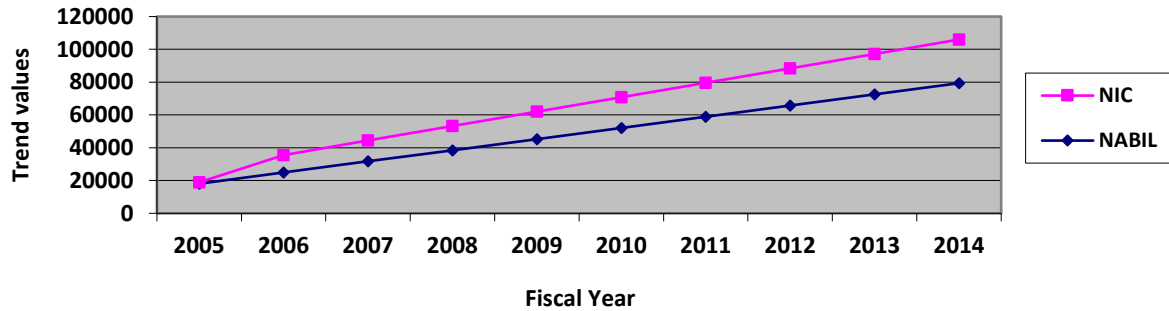
(Rs in million)

Fiscal Year	Trend values of NABIL	Trend values of NIC
2005	18046.22	870.02
2006	24859.48	10701.78
2007	31672.74	12693.54
2008	38485.99	14685.31
2009	45299.25	16677.07
2010	52112.51	18668.84
2011	58925.77	20660.6
2012	65739.02	22652.36
2013	72552.28	24644.13
2014	79365.54	26635.89

Sources: Appendix 20 (A)

Figure 4.22

Trend Values of Total Deposit of NABIL and NIC



The table 4.22 reflects the trend value of total deposit of two banks. The total deposits of NABIL and NIC have increasing trend. If all other things remain the same the total deposits of the NABIL will be highest deposit among the two banks under the study period. Same as the total deposit of the NIC will be 26635.89 million in the mid July 2014. The total deposit of NABIL will be 79365.54 million in the mid July 2013.

By analyzing the above trend value it is found that the total deposit position collection of NABIL is better in comparison to NIC.

(ii) Trend Analysis of Loan and Advances

The trend values of loan and advances of NABIL and NIC banks for six years are calculated and forecast for next five years up to 2013 is done which is presented in below table 4.23.

Table 4.23
Trend Values of Loan and Advances

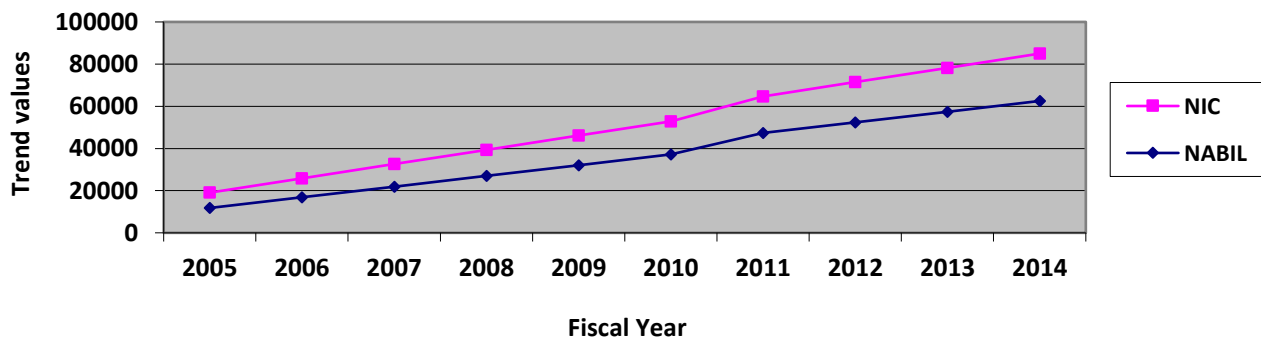
(Rs in Million)

Fiscal Year	Trend values of NABIL	Trend values of NIC
2005	11791.07	7276.67
2006	16864.75	8965.68
2007	21938.43	10654.69
2008	27012.12	12343.7
2009	32085.8	14032.71
2010	37159.48	15721.72
2011	47306.84	17410.72
2012	52380.52	19099.73
2013	57454.2	20788.74
2014	62527.88	22471.75

Sources: Appendix 20 (B)

Figure 4.23

Trend Values of Loan and Advances of NABIL and NIC



Here the table shows that the trend values of loan and advances of two banks are in increasing trend. If all other things remain same, total loan and advances of NABIL will 62527.88 million by 2014 and similarly total loan and

advances of NIC will be 22471.75 million by 2014. During the study period total loan and advances of NABIL is higher than NIC.

(iii) Trend Analysis of Total Investment

Under this topic, the trend value of total investment for five years from 2005-2009 has been calculated and forecast for next five years from 2010 to 2014. The following table shows the trend value of total investment for ten years from 2005 to 2014 of NABIL and NIC.

Table 4.24
Trend values of Total Investment

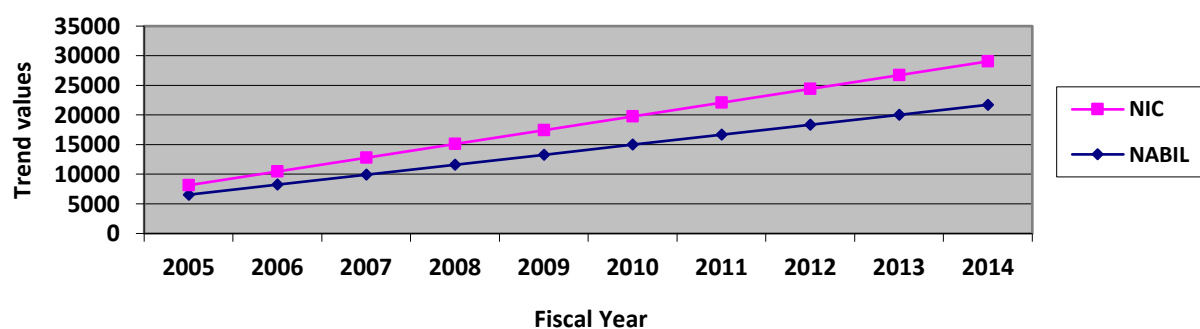
(Rs in Million)

Fiscal Year	Trend values of NABIL	Trend values of NIC
2005	6539.01	1600.68
2006	8225.6	2236.71
2007	9912.18	2872.73
2008	11598.77	3508.76
2009	13285.35	4144.79
2010	14971.94	4780.82
2011	16658.52	5416.84
2012	18345.1	6052.87
2013	20031.69	6688.9
2014	21718.27	7324.93

Sources: Appendix 20 (C)

Figure 4.24

Trend Values of Total Investment of NABIL and NIC



From the above comparative table, it is found that the trend value of total investment of NABIL and NIC is in increasing trend. The total investment of NABIL in 2014 will be Rs 21718.27 million and the total investment of NIC in 2014 will be Rs 7324.93 million.

(iv) Trend Analysis of Net Profit

Under this topic, the trend value of net profit of two banks for five years from 2005-2009 have has been calculated and forecast for next five years from 2010 to 2014. The following table shows the trend value of net profit for ten years from 2005 to 2014 of NABIL and NIC.

Table 4.25
Trend values of Net Profit

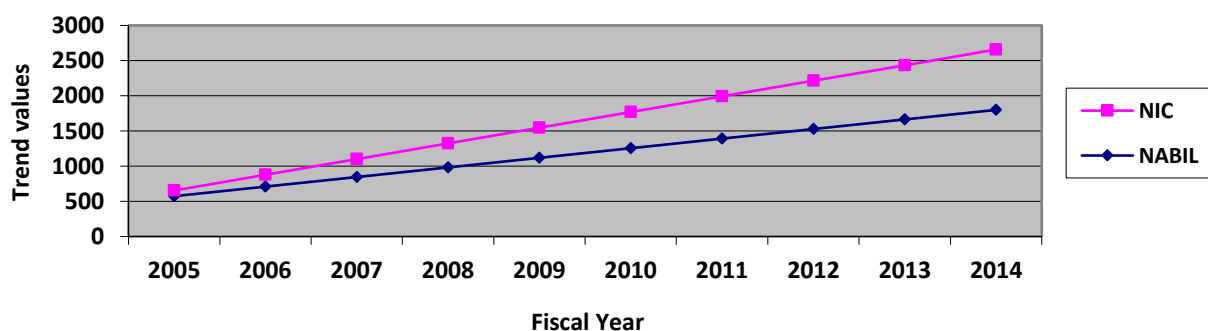
(Rs in Million)

Fiscal Year	Trend values of NABIL	Trend values of NIC
2005	572.63	79.99
2006	708.69	166.53
2007	845.06	253.08
2008	981.43	339.63
2009	1117.8	426.17
2010	1254.18	512.72
2011	1390.55	599.26
2012	1526.92	685.81
2013	1663.29	772.36
2014	1799.66	858.9

Sources: Appendix 20 (D)

Figure 4.25

Trend Values of Net Ptofit of NABIL and NIC



The above table shows that the trend values of net profit of NABIL and NIC is in increasing trend. The net profit of NABIL in 2014 will be 1799.66 million and the net profit of NIC will be 858.9 million by 2014.

(b) Co-efficient of Correlation Analysis

Under this topic Karl Pearson co-efficient of correlation is used to find out the relationship between total deposit and loan and advances, deposit and investment and so on.

(i) Correlation between Deposit and Loan and Advances

Deposits have played very important role in performance of a commercial bank and similarly loan and advances are very important to mobilize the collected deposits. Co-efficient of correlation between deposit and loan and advances measure the degree of relationship between these two variables. In this analysis, deposit is independent variable (x) and loan and advances are dependent variable (y). The main objective of computing 'r' between these two variables is to justify whether deposits are significantly used as loan and advances in proper way or not.

The following table shows the value of r, r², P. Er. and 6 P.E between total deposit and loan and advances of NABIL and NIC during the study period.

Table 4.26
Correlation between Deposit and Loan and Advances

Evaluation criteria	NABIL	NIC
r	0.9941	0.9753
r²	0.9883	0.9513
P.E	0.0034	0.0141
6P.E	0.0204	0.0844

Source: Appendix-21(A)

From the table above, it has been seen that correlation between deposit and loan and advances of NABIL is 0.9941. It means there is high degree of positive relationship between these two variables. True value of coefficient of determination 'r²' is 0.9883 and it means 98% of variation of the dependent variable (loan and advances) has been explained by the independent variable (deposit). Similarly, considering the value of 'r' i.e. 0.9941 and comparing it with 6.P.E.r. i.e.0.0204. The value of 'r' is greater than 6P.Er, which shows that the value of 'r' is significant. In other word, there is significant relationship between deposit and loan and advances in the case of NABIL.

Likewise, in the case of NIC, the co-efficient of correlation between deposit (independent variables) and loan and advances (dependent variable) is 0.9753 which indicates higher degree of positive co-relation between two variables. Similarly, the value of co-efficient of determination 'r²' is to be found 0.9513, which shows that 95.13% in the dependent variable has been explained by the independent variable. Similarly considering the value of 'r' i.e. 0.9753 and comparing it with 6 P.Er i.e. 0.0844. The value of 'r' is greater than 6P.Er, which means the relationship between deposit and loan and advances is significant.

After analyzing the conclusion can be drawn that in NABIL and NIC there is significant relationship between deposit and loan and advances because 'r' is greater than 6P.Er. This indicated that NIC has higher correlation between deposit and loan and advance as well as higher value of 'r²' than NABIL. It can conclude that it is successful to great loan and advances to mobilize the collected deposits in a proper way.

(ii) Correlation between Deposit and Total Investment

Co-efficient of correlation between deposit and total investment measures the degree of relationship between these two variables. The purpose of calculating this analysis is to find out whether deposit is significantly used as investment or not. Here, deposit is independent variable (x) and total investment is dependent variable (y).

Table 4.27

Correlation between Deposit and Total Investment

Evaluation criteria	NABIL	NIC
r	0.9674	0.7291
r²	0.9359	0.5316
P.E	0.0185	0.1352
6P.E	0.111	0.8114

Sources: Appendix 21(B)

From the above table in case of NABIL it is found that coefficient of correlation between deposit (independent) and total investment (dependent) value of 'r' is 0.9674, which shows the higher degree of positive relationship between these two variables. Moreover, when we consider the value of co-efficient of determination 'r²' it is 0.9359 which indicates that 93.59% of the variation in the dependent variable is explained by the independent variable. When analyze the value of 'r' and comparing with 6.P.Er we can find that 'r' is much greater than value 6P.Er. that reveals there is significant relationship between deposit and total investment.

Similarly, in case of NIC the co-efficient of correlation between deposit and total investment is found to be 0.7291, which shows the positive relationship between these two variables. If we again consider the value of

co-efficient of determination 'r²' it is 0.5316 which means 53.16% in the dependent variable is explained by independent variable. When analyze the value of 'r' and comparing with 6.P.Er we can find that 'r' is smaller than value of 6.P.E.r that reveals there is no significant relationship between deposit and total investment.

In conclusion, NABIL and NIC have the positive correlation between deposit and total investment. The relationship is significant and the value of r² shows high percent in the dependent variables, which has been explained by the independent variable.

(iii) Correlation between Interest Earned on Investment and Net Profit

Co-efficient of correlation between interest earned on investment and net profit measures the degree of relationship between these two variables. The purpose of calculating this correlation coefficient is to assess the contribution of income from investment in net profit of the bank.

Table 4.28

Correlation between Interest Earned on Investment and Net Profit

Evaluation criteria	NABIL	NIC
r	0.9751	0.8208
r²	0.9509	0.6737
P.E	0.0142	0.0942
6P.E	0.0851	0.5653

Sources: Appendix 21(C)

From the table above the co-efficient of correlation between interest earned on investment and net profit is found to be 0.9751 in case of NABIL i.e. there is positive relation between interest earned on investment and net profit. This means income from investment has higher degree of contribution on net profit. When analyze the value of 'r' and compare with 6.P.Er we can find that value of 'r' is

greater than value of 6.P.Er.which reveals that there is significant relationship between these two variables.

Similarly, the co-efficient of correlation between interest earned on investment and net profit is found to be 0.8208 of NIC i.e. there is positive relation between these two variables. This reveals that income from investment has higher degree of contribution on net profit. When analyze the value of 'r' and compare with 6.P.Er we can find that 'r' is greater than the value of 6.P.Er. This means there is significant relationship between interest earned on investment and net profit.

(iv) Correlation between Interest Income from Loan and Advances and Net Profit

Co-efficient of correlation between interest income from loan and advances and net profit measures the degree of relationship between these two variables. The purpose of calculating this correlation coefficient is to assess the contribution of income from loan and advances in net profit of the bank.

Table 4.29

Correlation between Interest Income from Loan and Advances and Net Profit

Evaluation criteria	NABIL	NIC
r	0.9610	0.9950
r²	0.9236	0.9901
P.E	0.0221	0.0029
6P.E	0.1324	0.0172

Sources: Appendix 21(D)

From the table 4.29, the correlation between interest income from loan and advances and net profit of NABIL is found to be 0.9610, where the value of 'r' of

NIC bank is found to be 0.9950 which shows the higher degree of positive relation between interest income from loan and advances and net profit of both banks. This means that income from loan and advances has higher degree of contribution on net profit of NABIL and NIC bank. The value of 'r' is greater than 6 times of probable error of both banks which indicates that there is highly significant relation between income from loan and advances and net profit of NABIL and NIC.

(C) Test of Hypothesis

It is an assumption about the population, which may or may not be true; to determine whether it is true or not by taking or not by taking some sample with followed some procedure is called testing of hypothesis. The test of hypothesis discloses the fact whether the difference between the computed statistic and hypothetical parameter is significant.

(a) Test of Hypothesis on Loan and Advances to Total Deposit Ratio

Here, mean ratio of loan and advances to total deposit ratio of NABIL and NIC are taken and carried out under t-test of significance difference. Let loan and advances to total deposit of NABIL and NIC are X_1 and X_2 respectively.

Table 4.30

Test of Hypothesis on Loan and Advances to Total Deposit Ratio

Fiscal Year	NABIL			NIC		
	x	$X = (x - \bar{x})$	X^2	y	$Y = (y - \bar{y})$	Y^2
2005/06	66.79	-1.96	3.83	75.93	-7.74	59.94
2006/07	66.60	-2.15	4.61	88.81	5.14	26.40
2007/08	66.94	-1.81	3.26	86.09	2.42	5.85
2008/09	73.87	5.12	26.26	87.80	4.13	17.04
2009/10	69.53	0.78	0.61	79.73	-3.94	15.54
	343.73	$\Sigma X = -0.02$	$\Sigma X^2 = 38.56$	418.36	$\Sigma Y = -0.01$	$\Sigma Y^2 = 124.76$

$$\text{Here, } \bar{x} = \frac{\sum x}{n} = \frac{343.73}{5} = 68.75$$

$$\bar{y} = \frac{\sum y}{n} = \frac{418.36}{5} = 83.67$$

Where, $X = x - \bar{x}$, $Y = y - \bar{y}$

Null Hypothesis. $H_0: \mu_x = \mu_y$ i.e. There is no significant difference between mean ratios of loan and advances to total deposit of NABIL and NIC.

Alternative hypothesis. $H_1: \mu_x \neq \mu_y$ i.e. There is significant different between mean ratios of loan & advances to total deposit of NABIL and NIC.

Test Statistics.

$$t = \frac{\bar{X} - \bar{Y}}{\sqrt{S_p^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

We know that,

$$\begin{aligned} S_p^2 &= \frac{1}{n_1 + n_2 - 2} \left[\left\{ \sum X^2 - \frac{(\sum X)^2}{n} + \sum Y^2 - \frac{(\sum Y)^2}{n} \right\} \right] \\ &= \frac{1}{5 + 5 - 2} \left[\left\{ 38.56 - \frac{(-0.02)^2}{5} + 124.76 - \frac{(0.01)^2}{5} \right\} \right] \\ &= 20.42 \end{aligned}$$

Now,

$$t = \frac{68.75 - 83.67}{\sqrt{20.42 \left(\frac{1}{5} + \frac{1}{5} \right)}}$$

$$t = -5.944$$

The calculated value of $t = 4.5504$

Degree of freedom = $n_1 + n_2 - 2 = 5 + 5 - 2 = 8$

Critical value: The tabulated value of 't' for two tailed test at 5% level of significance and for 8d.f. is 2.306.

Decision: Since calculated value of t i.e. 5.9441 is greater than tabulated value i.e. 2.306, the null hypothesis H_0 is rejected. That is, there is significant difference between mean ratios of loan and advances to total deposit ratio of NABIL and NIC.

(b) Test of Hypothesis on Total Investment to Total Deposit Ratio

Here, mean ratio of total investment to total deposit of NABIL and NIC are taken and carried out under t-test of significance difference. Let total investment to total deposit of NABIL and NIC be X and Y respectively.

Table 4.31

Test of Hypothesis on Total Investment to Total Deposit Ratio

Fiscal Year	NABIL			NIC		
	x	$X = (x - \bar{x})$	X^2	y	$Y = (y - \bar{y})$	Y^2
2005/06	31.93	-0.04	0.001	28.29	5.84	34.11
2006/07	38.32	6.35	40.35	15.89	-6.56	43.03
2007/08	31.14	-0.83	0.69	17.67	-4.78	22.85
2008/09	28.99	-2.98	8.87	19.42	-3.03	9.18
2009/10	29.46	-2.51	6.29	30.98	8.53	72.76
	159.84	$\Sigma X = -0.01$	$\Sigma X^2 = 56.19$	112.25	$\Sigma Y = -0.00$	$\Sigma Y^2 = 181.93$

$$\text{Here, } \bar{x} = \frac{\sum x}{n} = \frac{159.84}{5} = 31.97$$

$$\bar{y} = \frac{\sum y}{n} = \frac{112.25}{5} = 22.45$$

Where, $X = x - \bar{x}$, $Y = y - \bar{y}$

Null Hypothesis. $H_0: \mu_x = \mu_y$ i.e. There is no significant difference between mean ratios of total investment to total deposit of NABIL and NIC.

Alternative hypothesis. $H_1: \mu_x \neq \mu_y$ i.e. There is significant different between mean ratios of total investment to total deposit of NABIL and NIC.

Test Statistics.

$$t = \frac{\bar{X} - \bar{Y}}{\sqrt{S_p^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

We know that,

$$\begin{aligned} S_p^2 &= \frac{1}{n_1 + n_2 - 2} \left[\left\{ \sum X^2 - \frac{(\sum X)^2}{n} + \sum Y^2 - \frac{(\sum Y)^2}{n} \right\} \right] \\ &= \frac{1}{5 + 5 - 2} \left[\left\{ 56.19 - \frac{(-0.01)^2}{5} + 181.93 - \frac{(0.00)^2}{5} \right\} \right] \\ &= 29.76 \end{aligned}$$

Now,

$$t = \frac{31.97 - 22.45}{\sqrt{29.76 \left(\frac{1}{5} + \frac{1}{5} \right)}}$$

$$t = 2.7590$$

The calculated value of $t = 2.7590$

Degree of freedom = $n_1 + n_2 - 2 = 5 + 5 - 2 = 8$

Critical value: The tabulated value of 't' for two tailed test at 5% level of significance and for 8d.f. is 2.306.

Decision: Since calculated value of t i.e. 2.7590 is greater than tabulated value i.e. 2.306, the null hypothesis H_0 is rejected. That is, there is significant difference between mean ratios of total investment to total deposit ratio of NABIL and NIC

(c) Test of Hypothesis on Return on Loan and Advances Ratio

Here, mean ratio of return on loan and advances of NABIL and NIC are taken and carried out under t-test of significance difference. Let return on loan and advances of NABIL and NIC be X and Y respectively.

Table 4.32
Test of Hypothesis on Return on Loan and Advances Ratio

Fiscal Year	NABIL			NIC		
	X	$x = (x - \bar{x})$	X ²	y	$Y = (y - \bar{y})$	Y ²
2005/06	4.92	0.92	0.84	1.45	-0.80	0.63
2006/07	4.34	0.34	0.11	1.77	-0.48	0.23
2007/08	3.49	-0.51	0.26	2.16	-0.09	0.01
2008/09	3.74	-0.26	0.07	2.32	0.07	0.01
2009/10	3.53	-0.47	0.22	3.53	1.28	1.65
	20.02	ΣX=0.02	ΣX²=1.51	11.23	ΣY=-0.02	ΣY²=2.52

Here,
 $\bar{x} = \frac{\sum x}{n}$
 $= \frac{20.02}{5}$
 $= 4$

$$\bar{y} = \frac{\sum y}{n} =$$

Where, $X = x - \bar{x}$, $Y = y - \bar{y}$

Null Hypothesis. $H_0: \mu_x = \mu_y$ i.e. There is no significant difference between mean ratios of return on loan and advances of NABIL and NIC.

Alternative hypothesis. $H_1: \mu_x \neq \mu_y$ i.e. There is significant different between mean ratios of return on loan and advances of NABIL and NIC.

Test Statistics.

$$t = \frac{\bar{X} - \bar{Y}}{\sqrt{S_p^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

We know that,

$$\begin{aligned} S_p^2 &= \frac{1}{n_1 + n_2 - 2} \left[\left\{ \sum X^2 - \frac{(\sum X)^2}{n} + \sum Y^2 - \frac{(\sum Y)^2}{n} \right\} \right] \\ &= \frac{1}{5 + 5 - 2} \left[\left\{ 1.51 - \frac{(0.02)^2}{5} + 2.52 - \frac{(-0.02)^2}{5} \right\} \right] \\ &= 0.5037 \end{aligned}$$

Now,

$$t = \frac{4 - 2.25}{\sqrt{0.5037 \left(\frac{1}{5} + \frac{1}{5} \right)}}$$

$$t = 3.8993$$

The calculated value of $t = 3.8993$

Degree of freedom = $n_1 + n_2 - 2 = 5 + 5 - 2 = 8$

Critical value: The tabulated value of 't' for two tailed test at 5% level of significance and for 8d.f. is 2.306.

Decision: Since calculated value of t i.e. 3.8993 is greater than tabulated value i.e. 2.306, the null hypothesis H_0 is rejected. That is, there is significant difference between mean ratios of return on loan and advances ratio of NABIL and NIC.

(d) Test of Hypothesis on Investment on Govt. Securities to Current Assets Ratio

Here, mean ratio of investment on government securities to current assets of NABIL and NIC are taken and carried out under t-test of significance difference. Let the ratios of NABIL and NIC be X and Y respectively.

Table 4.33

Test of Hypothesis on Investment on Govt. Securities to Current Assets Ratio

Fiscal Year	NABIL			NIC		
	X	$x = (x - \bar{x})$	X^2	y	$Y = (y - \bar{y})$	Y^2
2005/06	12.69	-2.57	6.59	18.26	3.78	14.27
2006/07	21.06	5.80	33.66	10.01	-4.47	20.00
2007/08	14.87	-0.39	0.15	10.82	-3.66	13.41
2008/09	10.27	-4.99	24.88	12.43	-2.05	4.21
2009/10	17.40	2.14	4.59	20.89	6.41	41.06
	76.29	$\Sigma X = -0.01$	$\Sigma X^2 = 69.88$	72.41	$\Sigma Y = 0.01$	$\Sigma Y^2 = 92.96$

Here,
 $\bar{x} = \frac{\sum x}{n}$
 $= \frac{76.29}{5}$
 $= 15.26$

$$\bar{y} = \frac{\sum y}{n} =$$

Where, $X = x - \bar{x}$, $Y = y - \bar{y}$

Null Hypothesis. $H_0: \mu_x = \mu_y$ i.e. There is no significant difference between mean ratios of investment on government securities to current assets ratios of NABIL and NIC.

Alternative hypothesis. $H_1: \mu_x \neq \mu_y$ i.e. There is significant different between mean ratios of investment on government securities to current assets ratios of NABIL and NIC.

Test Statistics.

$$t = \frac{\bar{X} - \bar{Y}}{\sqrt{S_p^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

We know that,

$$\begin{aligned} S_p^2 &= \frac{1}{n_1 + n_2 - 2} \left[\left\{ \sum X^2 - \frac{(\sum X)^2}{n} + \sum Y^2 - \frac{(\sum Y)^2}{n} \right\} \right] \\ &= \frac{1}{5 + 5 - 2} \left[\left\{ 69.88 - \frac{(-0.01)^2}{5} + 92.96 - \frac{0.01^2}{5} \right\} \right] \\ &= 20.3549 \end{aligned}$$

Now,

$$t = \frac{15.26 - 14.48}{\sqrt{20.3549 \left(\frac{1}{5} + \frac{1}{5} \right)}}$$

$$t = 0.2641$$

The calculated value of $t = 0.2641$

Degree of freedom = $n_1 + n_2 - 2 = 5 + 5 - 2 = 8$

Critical value: The tabulated value of t' for two tailed test at 5% level of significance and for 8d.f. is 2.306.

Decision: Since calculated value of t i.e. 0.2641 is less than tabulated value i.e. 2.306, the alternative hypothesis H_1 is rejected and accepted null hypothesis H_0 . That is, there is no significant difference between mean ratios of investment on government securities to current assets ratios of NABIL and NIC.

(e) Test of Hypothesis on Total Interest Earned to Total Outside Assets Ratio

Here, mean ratio of total interest earned to total outside assets of NABIL and NIC are taken and carried out under t-test of significance difference. Let the ratios of NABIL and NIC be X and Y respectively.

Table 4.34

Test of Hypothesis on Total Interest Earned to Total outside Assets Ratio

Fiscal Year	NABIL			NIC		
	X	$x = (x - \bar{x})$	X^2	y	$Y = (y - \bar{y})$	Y^2
2005/06	6.86	-0.29	0.08	6.35	-1.21	1.46
2006/07	6.48	-0.67	0.45	6.89	-0.67	0.45
2007/08	6.32	-0.83	0.69	6.86	-0.70	0.49
2008/09	7.28	0.13	0.02	7.68	0.12	0.01
2009/10	8.81	1.66	2.76	10.02	2.46	6.05
	35.75	$\Sigma X=0.00$	$\Sigma X^2=3.99$	37.8	$\Sigma Y=0.00$	$\Sigma Y^2=8.47$

Here
 $\bar{x} = \frac{\sum x}{n}$
 $= \frac{35.75}{5}$
 $= 7.1$
 $\bar{y} = \frac{\sum y}{n} =$

Where, $X = x - \bar{x}$, $Y = y - \bar{y}$

Null Hypothesis. $H_0: \mu_x = \mu_y$ i.e. There is no significant difference between mean ratios of total interest earned to total outside assets of NABIL and NIC.

Alternative hypothesis. $H_1: \mu_x \neq \mu_y$ i.e. There is significant different between mean ratios of total interest earned to total outside assets of NABIL and NIC.

Test Statistics.

$$t = \frac{\bar{X} - \bar{Y}}{\sqrt{S_p^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

We know that,

$$\begin{aligned} S_p^2 &= \frac{1}{n_1 + n_2 - 2} \left[\left\{ \sum X^2 - \frac{(\sum X)^2}{n} + \sum Y^2 - \frac{(\sum Y)^2}{n} \right\} \right] \\ &= \frac{1}{5 + 5 - 2} \left[\left\{ 3.99 - \frac{(0.00)^2}{5} + 8.47 - \frac{(0.00)^2}{5} \right\} \right] \\ &= 1.5575 \end{aligned}$$

Now,

$$t = \frac{7.15 - 7.56}{\sqrt{1.5575 \left(\frac{1}{5} + \frac{1}{5} \right)}}$$

$$t = -0.5194$$

The calculated value of $t = -0.5194$

Degree of freedom = $n_1 + n_2 - 2 = 5 + 5 - 2 = 8$

Critical value: The tabulated value of 't' for two tailed test at 5% level of significance and for 8d.f. is 2.306.

Decision: Since calculated value of t i.e. 0.5194 is less than tabulated value i.e. 2.306, the alternative hypothesis H_1 is rejected and accepted null hypothesis H_0 .

That is, there is no significant difference between mean ratios total interest earned to total outside assets of NABIL and NIC

4.3 Major Findings of the Study

The preceding chapter have discussed and explored the facts and matters for the various parts of the study. Analytical part, which is the heart of the study, makes an analysis of various aspects of the investment policy of commercial banks by using some of important financial as well as statistical tools.

The major findings of the study that are derived on the basis of financial and statistical data analysis of NABIL and NIC, which are presented below:

(a) Findings from Liquidity Ratio Analysis

- The mean of current ratios of NABIL and NIC are in fluctuation trend. The current ratio of NABIL is fewer consistences than NIC. In general, the current ratio analysis of banks over the five years period indicates that it has been able to meet its short-term obligation and has satisfactory liquidity position.
- The cash and bank balance to current assets ratio indicates that NIC has maintained higher cash and bank balance to current assets ratio than NABIL, which states that NIC's ratios are fewer consistences than that of NABIL.
- The mean of cash and bank balance to total deposit ratio of NIC is higher than NABIL which states that liquidity position of NIC is better than that of NABIL.
- The mean ratio of investment on government securities to current assets of NABIL is higher than NIC, which shows that NABIL has good investment in government securities than NIC.
- The mean ratio of loan and advances to current assets of NIC is higher which reveals that NIC's ratios are more variable than that of NABIL.

(b) Findings from Assets Management Ratio

- The mean ratio of loan and advances to total deposit of NIC is higher than NABIL. It shows that NIC's ratios are more variable than NABIL.
- The mean ratio of total investment to total deposit of NABIL is higher than NIC which clears that the investment policy of NABIL is in better position.
- The mean ratio of loan and advances to working fund of NIC is highest than NABIL which clears that NIC's ratio are more variable than that of NABIL in comparison.
- The investment on government securities to total working fund ratio of NIC is slightly higher than NABIL which shows that NABIL's ratio are less consistence than NIC.
- The comparative study of investment on shares and debentures to total working fund of NABIL and NIC shows that NABIL has higher ratio than NIC.

(c) Findings from Profitability Ratios

- The return on loan and advances ratio of NABIL is higher than NIC. It can be said that NIC to be failure to earn high return on loan and advances in comparison to NABIL.
- The mean ratio of return on total working fund of NABIL is higher than NIC. The coefficient of NABIL is lower than NIC, which indicates the return on total working fund of NABIL is stable and consistent than NIC.
- The mean ratio of total interest earned to total outside assets of NIC is higher than NABIL which indicates that NIC has high interest income in

comparison to NABIL. The lower CV of NABIL indicates that total interest earned to total outside assets of NABIL is consistent.

- The mean ratio of total interest earned to total working fund of NABIL is lower than NIC. It indicates that the ratio of NABIL is stable. NIC has highest CV than NABIL which shows it is not successful in earning interest income.
- The comparative study of mean value of total interest paid to total working fund of NABIL and NIC reflects that NABIL has lower ratio than NIC. It means NABIL has paid minimum interest. The lower CV of NIC indicates that the ratio is inconsistent than NABIL.

(d) Findings from Risk Ratios

- The liquidity risk ratio of NIC is higher than NABIL but CV of NABIL is higher than that of NIC which indicates that NIC's risk ratios are less variable than NABIL.
- The credit risk ratio and CV of NABIL is lower than NIC which shows that NABIL's ratios are less variable than NIC.
- The capital risk ratio and CV of NIC is higher than NABIL it shows that NIC is stable and more heterogeneous.

(e) Findings from Growth Ratios

- The growth ratio of total deposit of NABIL is higher than NIC which shows NABIL is successful in increasing deposit funds.
- The growth ratio of total investment of NABIL is greater than NIC which indicates that NABIL is better on investment than NIC,
- The growth ratio of net profit of NIC is higher than NABIL.

(f) Findings from Trend Analysis

- The trend values of total deposits of both banks are increasing. From the trend analysis it is forecasted that total deposit of NABIL in year 2014 will be Rs. 79365.54 million and total deposit of NIC by the year 2014 will be Rs. 26635.89 million.
- The trend value of loan and advances of two banks are in increasing trend. Loan and advances of NABIL by the year 2014 will be 62527.88 million and loan and advances of NIC by the year of 2014 will be 22471.75 million is forecasted. During the study period NABIL has higher trend values than NIC.
- Trend values of total investment of both banks are in increasing trend. Total investment of NABIL by the year 2014 is projected to be Rs. 21718.27 million and NIC is projected to be Rs. 7324.93 million by the year 2014.
- The trend value of net profit of NABIL and NIC is in increasing trend. The net profit of NABIL is projected for the year 2014 is Rs.1799.66 million and the net profit of NIC will be Rs. 858.9 million by the year 2014.

(g) Findings from Co-efficient of Correlation

- Co-efficient of correlation between deposit and loan and advances of both banks has positive value and near to 1. The value of 'r' of NIC is slightly lower than that of NABIL. In case of both banks it has been found that there is significant relationship between deposit and loan and advances. The increase and decrease of total deposit of the bank strongly affects the volume of loan and advances.
- Co-efficient of correlation between deposit and total investment of both banks has positive relationship. The value of 'r' of NABIL is slightly higher than that of NIC. In case of both banks it has been found that there is significant relationship between deposits and total investment during the study period.

- Co-efficient of correlation between interest earned on investment and net profit of both banks are positive. The value of 'r' of NABIL is slightly higher than NIC. When analyze the value of 'r' and compare with 6.P.Er. we can find that both banks have greater value. This means there is significant relationship between interest earned on investment and net profit.
- The correlation between interest income from loan and advances and net profit of both banks are found to be positive and near to 1. The value of 'r' of both banks is greater than 6 times of probable error. This indicates that there is highly significant relationship between income from loan and advances and net profit of both banks.

(h) Findings from Test of Hypothesis

- There is significant difference between mean ratios of loan and advances to total deposit ratio of NABIL and NIC.
- There is significant difference between mean ratios of total investment to total deposit ratio of NABIL and NIC.
- There is significant difference between mean ratios of return on loan and advances ratio of NABIL and NIC
- There is no significant difference between mean ratios of investment on government securities to current assets ratios of NABIL and NIC.
- There is no significant difference between mean ratios total interest earned to total outside assets of NABIL and NIC.

CHAPTER-V

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 SUMMARY

Banking sector plays an important role in the economic development of the country. Commercial banks are one of the vital aspects of this sector, which deals in the process of channelized the available resources in the needed sector. Financial institutions like banks are necessity to collect scattered saving and put them into productive channels. In the absence of such institutions it is possible that the saving will not be safety and profitably utilized within the economy. It will be diverted aboard or channelized into unproductive conspicuous consumption including real estate speculation.

Commercial banks have its own role and contribution in the economic development. It maintains economic confidence of various segments and extends credit to people. The banking sector has to play developmental role to boost the economy by adopting the growth oriented investment policy and planned effort force for economic growth. A healthy development of any commercial bank depends upon its investment policy. A good investment policy attracts both borrowers and lenders, which helps to increase the volume of quality deposits, loans and investment. The major source of income of a bank is interest income from loan and investment and fee based income.

Many of commercial banks have been established in our country within a short period of time. The objective of commercial banks is to mobilize idle resources into the most profitable sectors. But, commercial bank should be careful while performing the credit creation function; the bank should never invest its funds in those securities which are too much fluctuating. Commercial banks must

follow the rule and regulations as well as different directions issued by central bank and ministry of finance while mobilization the funds or the commercial banks should invest its funds only those securities which are legal.

The main objective of this study is to examine & evaluate the investment policy of NABIL & Nepal Industrial and Commercial banks and suggest improving the investment policy of the bank. The study is based on the secondary data from F/Y 2005/06 to 2009/10. The data have been basically obtained from annual reports and financial statements, official records, periodicals, journals and bulletins, various published reports and relevant unpublished master's thesis. Besides this, personal contacts with the bank personnel have also been made. Various financial and statistical tools are used to analyze the collected data and to achieve the results of the study. Different ratios were calculated to get the results for conclusion. Statistical tools have also been used to make decision.

5.2 Conclusion

On the basis of analysis and major findings of fourth chapter, following conclusion can be made:

As shown the liquidity position of both banks has satisfactory result. The liquidity position of NIC is better than NABIL. NIC has highest cash and bank balance to total deposit and loan and advances to current assets ratio than NABIL but NABIL investing position of current assets as government securities is higher than NIC. At last we can conclude that NIC has maintained moderate investment policy in liquidity position.

From the analysis of assets management ratio it can be found that NIC has highest loan and advances to total deposit ratio, loan and advances to working fund, investment on government securities to total working fund than NABIL. But total investment to total deposit ratio and investment on shares and debenture total

working fund ratio shows that NABIL has invested more portion of its fund in different areas for high profit.

From the analysis of profitability ratio it can be concluded that profitability position of NABIL is better than NIC. It has highest return on loan and advances, return on total working fund than NIC but lower total interest earned to total outside assets, total interest earned to total working fund and total interest paid to total working fund ratio than NIC.

From the risk ratio, NIC has higher liquidity; credit and capital risk ratios than NABIL which indicates that NIC is less risky and has less profitability than NABIL.

From the growth ratio, NABIL has high ratio on total deposit and total investment than NIC. But NIC has highest growth ratio of net profit than NABIL. It shows that NIC has successfully collected and utilized fund amount of its customer than NABIL.

From the study of trend analysis, it can be concluded that trend values of total deposit and trend value of loan and advances, trend values of total investment and trend values of net profit of both banks is in increasing.

From the analysis of co-efficient of correlation, conclusion can be drawn that NABIL and NIC there is significant relationship between deposit and loan and advances, deposit and total investment, interest earned on investment and net profit.

According to test of hypothesis there is significant difference between mean ratios of loan and advances to total deposit, total investment to total deposit and

return on loan and advances ratio of both banks. But investment on govt. securities to current assets ratio and total interest earned to total outside assets has no significant difference.

5.3 Recommendation

After going over the analysis and findings following recommendation are made in order to overcome the weakness and inefficiency and make better policy on utilization and investment.

- A commercial bank must maintain its satisfactory liquidity position to meet the credit need of the community; however, external as well as internal factors affect the liquidity position of banks. NABIL has maintained the cash and bank balance to total deposit lower than NIC. So it is recommended to increase cash and bank balance to meet current obligations and loan demand.
- The loan and advances to total deposit and loan and advances to total working fund of NABIL is lower than NIC which indicates that it has not properly used its funds as loan and advances. Hence, NABIL is recommended to improve efficiency in utilizing the deposits in loan and advances for generating profit.
- The study shows that NIC has invested more funds in government securities which is less risky assets. So NIC is recommended to invest its funds in purchase of shares and debentures of other financial and non-financial companies because govt. securities as treasury bills give very lowest interest. This helps to maintain sound portfolio of the banks.
- Profitability is the main indicator of the financial performance of every business organization & is essential for the survival and growth of banks.

But over the study period, NIC seen unable to earn a satisfactory level of profit. So, NIC is recommended to earn profit and adopt various measures to improve its profitability.

- The risk increases effectiveness and profitability of bank, the liquidity, credit and capital risk taken by NABIL is lower than NIC and its consistency is unstable which may result in loss. So NABIL should carefully analyze in above risk to achieve higher return.
- The growth ratio represents how well the commercial banks are maintaining their economic and financial position; it is directly related of the fund mobilization and investment. NABIL's growth ratio is not good than NIC. So NABIL is recommended to increase its growth rate in deposits, loan & advances and net profit by designing new products and services to the depositors.
- In the light of growing competition in the banking sector the business of the bank is customer oriented. It should strengthen and active its marketing function as it is an effective tool of attracting and retaining customers. The bank should develop on "Innovative approach to bank marketing and formulate new strategies of serving customers in a more convenient way.
- An income and profit of the bank depends upon its lending procedure, lending policy and investment of its fund in different securities. The greater the credit created by the bank the higher will be the profitability. NABIL Bank has achieved a success in banking sector in term of market share and profitability compared to NIC because of its reliable and professional services. NIC was also the first commercial bank to have received ISO 9001:2000 certification for its Quality Management System standard in the

year 2006. The bank has recently been certified under the upgraded ISO 9001:2008 standards for the Bank's Quality System on commercial banking activities for the first time in Nepal.

- In the light of growing competition in the banking sector, the business of the bank should be customer oriented. The bank should involve in different kind of social and community development activities. In today's competitive market, higher interest rates are not only the thing, if customers are not delighted by the services of the banks they will switch to other banks. Therefore every commercial bank's focus should be retaining old customers and attract new ones for high deposit so that it could be used as investment in productive sectors. Both of the banks has been able to provide more personalized services and a better environment for its customer, it is an effective tool to attract and retain the customer.

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APPENDIX -1

Liquidity Ratios

Calculation of Current Ratio

NABIL

(Rs in million)

Fiscal Year	Current Assets (Rs)	Current Liabilities(Rs)	Ratio (Times)
2005/06	18133.81	20420.37	0.89
2006/07	22829.53	25196.34	0.91
2007/08	31241.83	34695.56	0.90
2008/09	36086.04	40737.158	0.89
2009/10	45641.33	48315.48	0.94

NIC

(Rs in million)

Fiscal Year	Current Assets (Rs)	Current Liabilities(Rs)	Ratio (Times)
2005/06	9617.77	9617.14	1.00
2006/07	11028.57	10760.54	1.02
2007/08	14277.47	13935.3	1.02
2008/09	17659.58	17090.37	1.03
2009/10	19044.26	18544.38	1.03

APPENDIX-2

Calculation of Cash And Bank Balance To Current Assets Ratio

NABIL

(Rs in million)

Fiscal Year	Cash and Bank Balance(Rs)	Current Assets (Rs)	Ratio (%)
2005/06	556.18	18133.81	3.07
2006/07	1399.825	22829.53	6.13
2007/08	2671.142	31241.83	8.55
2008/09	3372.51	36086.04	9.35
2009/10	1400.1	45641.33	3.07

NIC

(Rs in million)

Fiscal Year	Cash and Bank Balance(Rs)	Current Assets (Rs)	Ratio (%)
2005/06	749.139	9617.77	7.79
2006/07	599.75	11028.57	5.44
2007/08	1192.35	14277.47	8.35
2008/09	1461.151	17659.58	8.27
2009/10	2086.13	19044.26	10.95

APPENDIX-3

Calculation of Cash and Bank Balance to Total Deposit

Ratio

NABIL

(Rs in million)

Fiscal Year	Cash and Bank Balance(Rs)	Total Deposit (Rs)	Ratio (%)
2005/06	556.18	19347.40	2.87
2006/07	1399.825	23342.29	6.00
2007/08	2671.142	31915.05	8.37
2008/09	3372.51	37348.26	9.03
2009/10	1400.1	46410.70	3.02

NIC

(Rs in million)

Fiscal Year	Cash and Bank Balance(Rs)	Total Deposit (Rs)	Ratio (%)
2005/06	749.139	8765.95	8.55
2006/07	599.75	10068.23	5.96
2007/08	1192.35	13084.69	9.11
2008/09	1461.151	15579.93	9.38
2009/10	2086.13	15968.92	13.06

APPENDIX -4

Calculation of Investment on Government Securities to Current Assets Ratio

NABIL

(Rs in million)

Fiscal Year	Investment on Government Securities	Current Assets	Ratio (%)
2005/06	2301.463	18133.81	12.69
2006/07	4808.348	22829.53	21.06
2007/08	4646.883	31241.83	14.87
2008/09	3706.102	36086.04	10.27
2009/10	7941.55	45641.33	17.40

NIC

(Rs in million)

Fiscal Year	Investment on Government Securities	Current Assets	Ratio (%)
2005/06	1756.59	9617.77	18.26
2006/07	1104.06	11028.57	10.01
2007/08	1545.38	14277.47	10.82

2008/09	2195	17659.58	12.43
2009/10	3978.9	19044.26	20.89

APPENDIX -5

Calculation of Loan and Advances to Current Assets Ratio

NABIL

(Rs in million)

Fiscal Year	Loan and Advances	Current Assets	Ratio (%)
2005/06	12922.54	18133.81	71.26
2006/07	15545.78	22829.53	68.10
2007/08	21365.053	31241.83	68.39
2008/09	27589.93	36086.04	76.46
2009/10	32268.87	45641.33	70.70

NIC

(Rs in million)

Fiscal Year	Loan and Advances	Current Assets	Ratio (%)
2005/06	6655.96	9617.77	69.20
2006/07	8941.4	11028.57	81.07
2007/08	11264.68	14277.47	78.90
2008/09	13679.39	17659.58	77.46
2009/10	12732.01	19044.26	66.85

Appendix -6

Assets Management Ratio

Calculation of Loan and advances to Total Deposit Ratio

NABIL

(Rs in million)

Fiscal Year	Loan and Advances	Total Deposit	Ratio (%)
2005/06	12922.54	19347.40	66.79
2006/07	15545.78	23342.29	66.60
2007/08	21365.05	31915.05	66.94
2008/09	27589.93	37348.26	73.87
2009/10	32268.87	46410.70	69.53

NIC

(Rs in million)

Fiscal Year	Loan and Advances	Total Deposit	Ratio (%)
2005/06	6655.96	8765.95	75.93
2006/07	8941.4	10068.23	88.81
2007/08	11264.68	13084.69	86.09
2008/09	13679.39	15579.93	87.80
2009/10	12732.01	15968.92	79.73

Appendix-7

Calculation of Total Investment to Total Deposit Ratio

NABIL

(Rs in million)

Fiscal Year	Total investment	Total Deposit	Ratio (%)
2005/06	6178.53	19347.40	31.93
2006/07	8945.31	23342.29	38.32
2007/08	9939.77	31915.05	31.14
2008/09	10826.38	37348.26	28.99
2009/10	13670.92	46410.70	29.46

NIC

(Rs in million)

Fiscal Year	Total investment	Total Deposit	Ratio (%)
2005/06	2479.91	8765.95	28.29
2006/07	1599.48	10068.23	15.89
2007/08	2311.47	13084.69	17.67
2008/09	3026.02	15579.93	19.42
2009/10	4946.78	15968.92	30.98

Appendix-8

Calculation of Loan and Advances to Working Fund Ratio

NABIL

(Rs in million)

Fiscal Year	Loan and Advances	Working Fund	Ratio (%)
2005/06	12922.54	22329.97	57.87
2006/07	15545.78	27253.39	57.04
2007/08	21365.05	37132.76	57.54
2008/09	27589.93	43867.40	62.89
2009/10	32268.87	52150.24	61.88

NIC

(Rs in million)

Fiscal Year	Loan and Advances	Working Fund	Ratio (%)
2005/06	6655.96	10383.6	64.10
2006/07	8941.4	11678.83	76.56
2007/08	11264.68	15238.74	73.92
2008/09	13679.39	18750.63	72.95
2009/10	12732.01	20309.33	62.69

Appendix-9

Calculation of Investment on Govt. Securities to Total Working Fund Ratio

NABIL (Rs in million)

Fiscal Year	Investment on Govt. Securities.	Working Fund	Ratio (%)
2005/06	2301.46	22329.97	10.31
2006/07	4808.35	27253.39	17.64
2007/08	4646.88	37132.76	12.51
2008/09	3706.10	43867.40	8.45
2009/10	7941.55	52150.24	15.23

NIC (Rs in million)

Fiscal Year	Investment on Govt. Securities.	Working Fund	Ratio (%)
2005/06	1756.59	10383.6	16.92
2006/07	1104.06	11678.83	9.45
2007/08	1545.38	15238.74	10.14
2008/09	2195	18750.63	11.71
2009/10	3978.9	20309.33	19.59

Appendix-10

Calculation of Invt. on Shares and Debentures to Total Working Fund Ratio

NABIL (Rs in million)

Fiscal Year	Investment on Shares & Debt.	Working Fund	Ratio (%)
2005/06	27.56	22329.97	0.12
2006/07	57.85	27253.39	0.21
2007/08	80.55	37132.76	0.22
2008/09	82.50	43867.40	0.19
2009/10	159.80	52150.24	0.31

NIC (Rs in million)

Fiscal Year	Investment on Shares & Debt.	Working Fund	Ratio (%)
2005/06	1.83	10383.60	0.02
2006/07	16.59	11678.83	0.14
2007/08	26.47	15238.74	0.17
2008/09	26.59	18750.63	0.14
2009/10	27.79	20309.33	0.14

Appendix-11

Profitability Ratio

Calculation of Return on loan and advances Ratio

NABIL (Rs in million)

Fiscal Year	Net Profit	Loan and advances	Ratio (%)
2005/06	635.26	12922.54	4.92
2006/07	673.96	15545.78	4.34
2007/08	746.47	21365.05	3.49
2008/09	1031.05	27589.93	3.74
2009/10	1138.57	32268.87	3.53

NIC (Rs in million)

Fiscal Year	Net Profit	Loan and advances	Ratio (%)
2005/06	96.588	6655.96	1.45
2006/07	158.475	8941.4	1.77
2007/08	243.058	11264.68	2.16
2008/09	317.434	13679.39	2.32
2009/10	449.84	12732.01	3.53

Appendix-12

Calculation of Return on Total Working Fund Ratio

NABIL (Rs in million)

Fiscal Year	Net Profit	Working Fund	Ratio (%)
2005/06	635.26	22329.97	2.84
2006/07	673.96	27253.39	2.47
2007/08	746.47	37132.76	2.01
2008/09	1031.05	43867.4	2.35
2009/10	1138.57	52150.24	2.18

NIC (Rs in million)

Fiscal Year	Net Profit	Working Fund	Ratio (%)
2005/06	96.59	10383.6	0.93
2006/07	158.48	11678.83	1.36
2007/08	243.06	15238.74	1.60
2008/09	317.43	18750.63	1.69
2009/10	449.84	20309.33	2.21

Appendix-13

Calculation of Total Interest Earned to Total outside Assets Ratio

NABIL (Rs in million)

Fiscal Year	Total Interest Earned.	Total Outside Assets	Ratio (%)
2005/06	1310	19101.07	6.86
2006/07	1587.76	24491.08	6.48
2007/08	1978.697	31304.82	6.32
2008/09	2798.486	38416.31	7.28
2009/10	4047.73	45939.79	8.81

NIC (Rs in million)

Fiscal Year	Total Interest Earned.	Total Outside Assets	Ratio (%)
2005/06	579.979	9135.88	6.35
2006/07	725.819	10540.88	6.89
2007/08	931.401	13576.15	6.86
2008/09	1283.521	16705.42	7.68
2009/10	1771.17	17678.79	10.02

Appendix-14

Calculation of Total Interest Earned to Total working fund Ratio

NABIL (Rs in million)

Fiscal Year	Total Interest Earned.	Working Fund	Ratio (%)
2005/06	1310	22329.97	5.87
2006/07	1587.76	27253.39	5.83
2007/08	1978.697	37132.76	5.33
2008/09	2798.486	43867.4	6.38
2009/10	4047.73	52150.24	7.76

NIC (Rs in million)

Fiscal Year	Total Interest Earned.	Working Fund	Ratio (%)
2005/06	579.979	10383.6	5.59
2006/07	725.819	11678.83	6.21
2007/08	931.401	15238.74	6.11
2008/09	1283.521	18750.63	6.85
2009/10	1771.17	20309.33	8.72

Appendix-15

Calculation of Total Interest Paid to Total working fund Ratio

NABIL

(Rs in million)

Fiscal Year	Total Interest Paid	Working Fund	Ratio (%)
2005/06	357.2	22329.97	1.60
2006/07	555.71	27253.39	2.04
2007/08	758.44	37132.76	2.04
2008/09	1153.28	43867.4	2.63
2009/10	1960.11	52150.24	3.76

NIC

(Rs in million)

Fiscal Year	Total Interest Paid	Working Fund	Ratio (%)
2005/06	340.22	10383.6	3.28
2006/07	421.37	11678.83	3.61
2007/08	506	15238.74	3.32
2008/09	767.2	18750.63	4.09
2009/10	1031.47	20309.33	5.08

Appendix-16

Risk Ratios

Calculation of Liquidity Risk Ratio

NABIL

(Rs in million)

Fiscal Year	Cash and Bank Balance(Rs)	Total Deposit (Rs)	Ratio (%)
2005/06	556.18	19347.40	2.87
2006/07	1399.83	23342.29	6.00
2007/08	2671.14	31915.05	8.37
2008/09	3372.51	37348.26	9.03
2009/10	1400.10	46410.70	3.02

NIC

(Rs in million)

Fiscal Year	Cash and Bank Balance(Rs)	Total Deposit (Rs)	Ratio (%)
2005/06	749.139	8765.95	8.55
2006/07	599.75	10068.23	5.96
2007/08	1192.35	13084.69	9.11

2008/09	1461.151	15579.93	9.38
2009/10	2086.13	15968.92	13.06

Appendix-17

Calculation of Credit Risk

NABIL

(Rs in million)

Fiscal Year	Loan and Advances	Total Assets	Ratio (%)
2005/06	12922.54	22329.97	57.87
2006/07	15545.78	27253.39	57.04
2007/08	21365.053	37132.759	57.54
2008/09	27589.93	43867.4	62.89
2009/10	32268.87	52150.24	61.88

NIC

(Rs in million)

Fiscal Year	Loan and Advances	Total Assets	Ratio (%)
2005/06	6655.96	10383.6	64.10
2006/07	8941.4	11678.83	76.56
2007/08	11264.68	15238.74	73.92
2008/09	13679.39	18750.63	72.95
2009/10	12732.01	20309.33	62.69

Appendix-18

Calculation of Capital Risk Ratio

NABIL

(Rs in million)

Fiscal Year	capital	Risk weighted assets	Ratio (%)
2005/06	1823.04	16976.40	10.74
2006/07	2057.05	19166.77	10.73
2007/08	2437.20	27010.56	9.02
2008/09	3130.24	32500.50	9.63
2009/10	3434.75	39016.21	8.80

NIC

(Rs in million)

Fiscal Year	Capital	Risk weighted assets	Ratio (%)
2005/06	766.46	7656.13	10.01
2006/07	917.99	9905.36	9.27
2007/08	1303.43	12321.13	10.58
2008/09	1660.25	15021.35	11.05
2009/10	1764.95	14466.35	12.20

Appendix -19 Calculation of Growth Ratios

$$D_n = D_0 (1+g)^{n-1}$$

Let,

D_n = Variable in the 5th year

D_0 = Variable in the initial year

n = no of period study

Appendix -19 (A) Calculation of growth ratio of Total Deposits

Growth Ratio of Total Deposit of NABIL

$$46410.7 = 19347.40 (1+g)^{5-1}$$

$$1+g = \left(\frac{46410.7}{19347.40} \right)^{1/4}$$

$$g = 24.45\%$$

Growth Ratio of Total Deposit of NIC

$$15968.92 = 8765.95 (1+g)^{5-1}$$

$$1+g = \left(\frac{15968.92}{8765.95} \right)^{1/4}$$

$$g = 16.18\%$$

Appendix -19 (B) Calculation of growth ratio of Total Investment

Growth Ratio of Total Investment of NABIL

$$13670.92 = 6178.53 (1+g)^{5-1}$$

$$1+g = \left(\frac{13670.92}{6178.53} \right)^{1/4}$$

$$g = 21.96\%$$

Growth Ratio of Total Investment of NIC

$$4946.78 = 2479.91 (1+g)^{5-1}$$

$$1+g = \left(\frac{4946.78}{2479.91} \right)^{1/4}$$

$$g = 18.84\%$$

Appendix -19 (C) Calculation of growth ratio of Net Profit

Growth Ratio of Net Profit of NABIL

$$1138.57 = 635.26 (1+g)^{5-1}$$

$$1+g = \left(\frac{1138.57}{635.26} \right)^{1/4}$$

$$g = 15.70\%$$

Growth Ratio of Net Profit of NIC

$$449.84 = 96.58 (1+g)^{5-1}$$

$$1+g = \left(\frac{449.84}{96.58} \right)^{1/4}$$

$$g = 46.90\%$$

Calculation of Trend Analysis

Appendix 20 (A)

Trend Analysis of Total Deposit of NABIL

(Rs in millions)

FY(t)	Total Deposit(Y)	X=t-2007	X ²	XY	Y=a+bX
2005	19347.40	-2	4	-38694.80	18046.22
2006	23342.29	-1	1	-23342.29	24859.48
2007	31915.05	0	0	0.00	31672.74
2008	37348.26	1	1	37348.26	38485.99
2009	46410.70	2	4	92821.40	45299.25
n=5	158363.69	0	10	68132.57	

Here, N=Number of years, $\sum Y$ = Total Deposit

Where, $a = \sum Y/n$

$b = \sum xy / \sum x^2$

$a = 158363.69/5 = 31672.74$

$b = 68132.57/10 = 6813.26$

Now, $Y_c = a + bx = 31672.26 + 6813.26X$

Projected trend values for next five years from 2010 to 2014 as per above linear equation

Fiscal Year	X=t-2007	Y _c =a+bx
2010	3	52112.51
2011	4	58925.77
2012	5	65739.02
2013	6	72552.28
2014	7	79365.54

Trend Analysis of Total Deposit of NIC

(Rs in millions)

FY(t)	Total Deposit(Y)	X=t-2007	X ²	XY	Y _c =a+bX
2005	8765.95	-2	4	-17531.90	8710.02
2006	10068.23	-1	1	-10068.23	10701.78
2007	13084.69	0	0	0.00	12693.54
2008	15579.93	1	1	15579.93	14685.31
2009	15968.92	2	4	31937.84	16677.07
n=5	63467.72	0	10	19917.64	

Here, N=Number of years, $\sum Y$ = Total Deposit

Where, $a = \sum Y/n$

$b = \sum xy / \sum x^2$

$$a = 63467.72/5 = 12693.54 \quad .b = 19917.64/10 = 1991.76$$

$$\text{Now, } Y_c = a + bx = 12693.54 + 1991.76x$$

Projected trend values for next five years from 2010 to 2014 as per above linear equation

Fiscal Year	X=t-2007	Yc=a+bx
2010	3	18668.84
2011	4	20660.60
2012	5	22652.36
2013	6	24644.13
2014	7	26635.89

Appendix 20 (B)

Trend Analysis of Loan and Advances of NABIL

(Rs in millions)

FY(t)	Loan and advances(Y)	X=t-2007	X ²	XY	Yc=a+bX
2005	12922.54	-2	4	-25845.08	11791.07
2006	15545.78	-1	1	-15545.78	16864.75
2007	21365.053	0	0	0.00	21938.43
2008	27589.93	1	1	27589.93	27012.12
2009	32268.87	2	4	64537.74	32085.80
n=5	109692.17	0	10	50736.81	

Here, N=Number of years, $\sum Y$ = Total Deposit

Where, $a = \sum Y/n$ $b = \sum xy / \sum x^2$

$$a = 109692.17/5 = 21938.43 \quad .b = 50736.81/10 = 5073.68$$

$$\text{Now, } Y_c = a + bx = 21938.43 + 5073.68x$$

Projected trend values for next five years from 2010 to 2014 as per above linear equation

Fiscal Year	X=t-2007	Yc=a+bx
2010	3	37159.48
2011	5	47306.84
2012	6	52380.52
2013	7	57454.20
2014	8	62527.88

Trend Analysis of Loan and Advances of NIC

(Rs in millions)

FY(t)	Loan and advances(Y)	X=t-2007	X ²	XY	Yc=a+bX
2005	6655.96	-2	4	13311.92	7276.67
2006	8941.4	-1	1	-8941.40	8965.68
2007	11264.68	0	0	0.00	10654.69
2008	13679.39	1	1	13679.39	12343.70
2009	12732.01	2	4	25464.02	14032.71
n=5	53273.44	0	10	16890.09	

Here, N=Number of years, $\sum Y$ = Total Deposit

Where, $a = \sum Y/n$

$b = \sum xy / \sum x^2$

$a = 53273.44/5 = 10654.69$

$b = 16890.09/10 = 1689.01$

Now, $Y_c = a + bx = 10654.69 + 1689.01x$

Projected trend values for next five years from 2010 to 2014 as per above linear equation

Fiscal Year	X=t-2007	Yc=a+bx
2010	3	15721.72
2011	4	17410.72
2012	5	19099.73
2013	6	20788.74
2014	7	22477.75

Appendix 20 (C)

Trend Analysis of Total Investment of NABIL

(Rs in millions)

FY(t)	Total Investment (Y)	X=t-2007	X ²	XY	Yc=a+bX
2005	6178.53	-2	4	12357.07	6539.01
2006	8945.31	-1	1	-8945.31	8225.60
2007	9939.77	0	0	0.00	9912.18
2008	10826.38	1	1	10826.38	11598.77
2009	13670.92	2	4	27341.84	13285.35
n=5	49560.91	0	10	16865.84	

Here, N=Number of years, $\sum Y$ = Total Deposit

Where, $a = \sum Y/n$

$b = \sum xy / \sum x^2$

$$a = 49560.91/5 = 9912.18$$

$$b = 16865.84/10 = 1686.58$$

$$\text{Now, } Y_c = a + bx = 9912.18 + 1686.58x$$

Projected trend values for next five years from 2010 to 2014 as per above linear equation

Fiscal Year	X=t-2007	Yc=a+bx
2010	3	14971.94
2011	4	16658.52
2012	5	18345.10
2013	6	20031.69
2014	7	21718.27

Trend Analysis of Total Investment of NIC

(Rs in millions)

FY(t)	Total Investment (Y)	X=t-2007	X ²	XY	Yc=a+bX
2005	2479.91	-2	4	-4959.83	1600.68
2006	1599.48	-1	1	-1599.48	2236.71
2007	2311.47	0	0	0.00	2872.73
2008	3026.02	1	1	3026.02	3508.76
2009	4946.78	2	4	9893.56	4144.79
n=5	14363.66	0	10	6360.28	

Here, N=Number of years, $\sum Y$ = Total Deposit

$$\text{Where, } a = \sum Y/n$$

$$b = \sum xy / \sum x^2$$

$$a = 14363.66/5 = 2872.73$$

$$b = 6360.28/10 = 636.03$$

$$\text{Now, } Y_c = a + bx = 2872.72 + 636.03x$$

Projected trend values for next five years from 2010 to 2014 as per above linear equation

Fiscal Year	X=t-2007	Yc=a+bx
2010	3	4780.82
2011	4	5416.84
2012	5	6052.87
2013	6	6688.90
2014	7	7324.93

Appendix 20 (D)**Trend Analysis of Net Profit of NABIL****(Rs in millions)**

FY(t)	Net Profit (Y)	X=t-2007	X ²	XY	Yc=a+bX
2005	635.26	-2	4	-1270.52	572.32
2006	673.96	-1	1	-673.96	708.69
2007	746.47	0	0	0.00	845.06
2008	1031.05	1	1	1031.05	981.43
2009	1138.57	2	4	2277.14	1117.80
n=5	4225.31	0	10	1363.71	

Here, N=Number of years, $\sum Y$ = Total Deposit

Where, $a = \sum Y/n$

$b = \sum xy/\sum x^2$

$a = 4225.31/5 = 845.06$

$b = 1363.71/10 = 136.37$

Now, $Yc = a + bx = 845.06 + 136.37x$

Projected trend values for next five years from 2010 to 2014 as per above linear equation

Fiscal Year	X=t-2007	Yc=a+bx
2010	3	1254.18
2011	4	1390.55
2012	5	1526.92
2013	6	1663.29
2014	7	1799.66

Trend Analysis of Net Profit of NIC**(Rs in millions)**

FY(t)	Net Profit (Y)	X=t-2007	X ²	XY	Yc=a+bX
2005	96.588	-2	4	-193.18	79.99
2006	158.475	-1	1	-158.48	166.53
2007	243.058	0	0	0.00	253.08
2008	317.434	1	1	317.43	339.63
2009	449.84	2	4	899.68	426.17
n=5	1265.40	0	10	865.46	

Here, N=Number of years, $\sum Y$ = Total Deposit

Where, $a = \frac{\sum Y}{n}$

$b = \frac{\sum xy}{\sum x^2}$

$a = 1265.40/5 = 253.08$

$b = 865.46/10 = 86.55$

Now, $Y_c = a + bx = 253.08 + 86.55x$

Projected trend values for next five years from 2010 to 2014 as per above linear equation

Fiscal Year	$X=t-2007$	$Y_c=a+bx$
2010	3	512.72
2011	4	599.26
2012	5	685.81
2013	6	772.36
2014	7	858.90

Calculation of Co-efficient of Correlation Analysis

Appendix 21 (A)

Correlation between Deposit and Loan and Advances of NABIL (Rs in millions)

Fiscal Year	Deposit (X)	Loan and Advances (Y)	$x=X-\bar{X}$	x^2	$y=Y-\bar{Y}$	y^2	xy
2005/06	19347.40	12922.54	-7046.55	49653838.72	-5359.49	28724121	37765895
2006/07	23342.29	15545.78	-3051.66	9312647.066	-2736.25	7487057.7	8350109.3
2007/08	31915.05	21365.05	5521.10	30482534.17	3083.02	9505038	17021682
2008/09	37348.26	27589.93	10954.31	119996863.8	9307.90	86637024	101961616
2009/10	46410.70	32268.87	20016.75	400670360.6	13986.84	195631726	279971131
total	158363.69	109692.17	26393.95	610116244.34	18282.03	327984966	445070433
mean	26393.95	18282.03					

Now, Co-efficient of Correlation (r) =
$$\frac{N \cdot \sum xy - \sum x \cdot \sum y}{\sqrt{N \sum x^2 - (\sum x)^2} \sqrt{N \sum y^2 - (\sum y)^2}}$$

$r=0.9941$

$r^2=0.9883$

Probable Error (P.E.r) = $0.6745 \left(\frac{1-r^2}{\sqrt{n}} \right) = 0.6745 \left(\frac{1-0.9883}{5} \right)$

$=0.0034$

6P.Er = 0.0204

Correlation between Deposit and Loan and Advances of NIC

(Rs in millions)

Fiscal Year	Deposit (X)	Loan and Advances (Y)	$x=X-\bar{X}$	x^2	$y=Y-\bar{Y}$	y^2	xy
2005/06	8765.95	6655.96	-1812.00	3283356.08	-2222.95	4941491.9	4027986.8
2006/07	10068.23	8941.4	-509.72	259817.8765	62.49	3905.4167	-31854.31
2007/08	13084.69	11264.68	2506.74	6283728.716	2385.77	5691914.4	5980505.5
2008/09	15579.93	13679.39	5001.98	25019770.57	4800.48	23044640	24011906
2009/10	15968.92	12732.01	5390.97	29062521.6	3853.10	14846405	20771952
total	63467.72	53273.44	10577.95	63909194.85	8878.91	48528357	54760495
mean	10577.95	8878.91					

Now, Co-efficient of Correlation (r) =
$$\frac{N \cdot \sum xy - \sum x \cdot \sum y}{\sqrt{N \sum x^2 - (\sum x)^2} \sqrt{N \sum y^2 - (\sum y)^2}}$$

r=0.9753

r²=0.9513

Probable Error (P.E.r) =
$$0.6745 \left(\frac{1-r^2}{\sqrt{n}} \right) = 0.6745 \left(\frac{1-0.9513}{5} \right)$$

=0.0141

6P.Er =0.9513

Appendix 21 (B)

Correlation between Deposit and Total Investment of NABIL

(Rs in millions)

Fiscal Year	Deposit (X)	Total Investment (Y)	$x=X-\bar{X}$	x^2	$y=Y-\bar{Y}$	y^2	xy
2005/06	19347.40	6178.53	-7046.55	49653838.72	-2081.62	4333138.4	14668229
2006/07	23342.29	8945.31	-3051.66	9312647.066	685.16	469441.26	-2090871
2007/08	31915.05	9939.77	5521.10	30482534.17	1679.62	2821116.1	9273336.3
2008/09	37348.26	10826.38	10954.31	119996863.8	2566.23	6585525.3	28111250
2009/10	46410.70	13670.92	20016.75	400670360.6	5410.77	29276409	108305998
total	158363.69	49560.91	26393.95	610116244.34	8260.15	43485630	158267943
mean	26393.95	8260.15					

$$\text{Now, Co-efficient of Correlation (r)} = \frac{N \cdot \sum xy - \sum x \cdot \sum y}{\sqrt{N \sum x^2 - (\sum x)^2} \sqrt{N \sum y^2 - (\sum y)^2}}$$

$$r=0.9674$$

$$r^2=0.9359$$

$$\text{Probable Error (P.E.r)} = 0.6745 \left(\frac{1-r^2}{\sqrt{n}} \right) = 0.6745 \left(\frac{1-0.9359}{5} \right)$$

$$=0.0185$$

$$6P.Er = 0.1110$$

Correlation between Deposit and Total Investment of NIC (Rs in millions)

Fiscal Year	Deposit (X)	Total Investment (Y)	$x=X-\bar{X}$	x^2	$y=Y-\bar{Y}$	y^2	xy
2005/06	8765.95	2479.91	-1812.00	3283356.08	85.97	7390.669	-155776.1
2006/07	10068.23	1599.48	-509.72	259817.8765	-794.46	631171.46	404956.33
2007/08	13084.69	2311.47	2506.74	6283728.716	-82.48	6802.2906	-206745.6
2008/09	15579.93	3026.02	5001.98	25019770.57	632.08	399522.6	3161639.4
2009/10	15968.92	4946.78	5390.97	29062521.6	2552.84	6516971.6	13762254
total	63467.72	14363.66	10577.95	63909194.85	2393.94	7561858.7	16966328
mean	10577.95	2393.94					

$$\text{Now, Co-efficient of Correlation (r)} = \frac{N \cdot \sum xy - \sum x \cdot \sum y}{\sqrt{N \sum x^2 - (\sum x)^2} \sqrt{N \sum y^2 - (\sum y)^2}}$$

$$r=0.7291$$

$$r^2=0.5316$$

$$\text{Probable Error (P.E.r)} = 0.6745 \left(\frac{1-r^2}{\sqrt{n}} \right) = 0.6745 \left(\frac{1-0.7291}{5} \right)$$

$$=0.01352$$

$$6P.Er = 0.8114$$

Appendix 21(C)

Correlation between Interest Earned on Investment and Net Profit of NABIL

(Rs in millions)

Fiscal Year	Interest Earned (X)	Net Profit (Y)	$x = X - \bar{X}$	x^2	$y = Y - \bar{Y}$	y^2	xy
2005/06	145.11	635.26	-54.68	2989.819378	-68.96	4755.0449	3770.5073
2006/07	152.01	673.96	-47.78	2283.291144	-30.26	915.59699	1445.8819
2007/08	214.18	746.47	14.39	207.0939494	42.25	1784.9921	607.99758
2008/09	290.36	1031.05	90.57	8203.062416	326.83	106820.57	29601.619
2009/10	397.08	1138.57	197.29	38923.64365	434.35	188660.94	85693.471
total	1198.74	4225.31	199.79	52606.91	704.22	302937.14	121119.48
mean	199.79	704.22					

$$\text{Now, Co-efficient of Correlation (r)} = \frac{N \cdot \sum xy - \sum x \cdot \sum y}{\sqrt{N \sum x^2 - (\sum x)^2} \sqrt{N \sum y^2 - (\sum y)^2}}$$

$$r = 0.9751$$

$$r^2 = 0.9509$$

$$\text{Probable Error (P.E.r)} = 0.6745 \left(\frac{1 - r^2}{\sqrt{n}} \right) = 0.6745 \left(\frac{1 - 0.9509}{5} \right)$$

$$= 0.0142$$

$$6P.E.r = 0.0851$$

Correlation between Interest Earned on Investment and Net Profit of NIC

(Rs in millions)

Fiscal Year	Interest Earned (X)	Net Profit (Y)	$x = X - \bar{X}$	x^2	$y = Y - \bar{Y}$	y^2	xy
2005/06	86.32	96.59	-6.65	44.2225	-114.31	13067.043	760.16926
2006/07	104.53	158.48	11.56	133.6336	-52.42	2748.2933	-606.0234
2007/08	76.69	243.06	-16.28	265.0384	32.16	1034.1906	-523.5458
2008/09	136.34	317.43	43.37	1880.9569	106.53	11349.671	4620.4157
2009/10	153.94	449.84	60.97	3717.3409	238.94	57092.722	14568.223
total	557.82	1265.40	92.97	6041.19	210.90	85291.919	18819.238
mean	92.97	210.90					

$$\text{Now, Co-efficient of Correlation (r)} = \frac{N \cdot \sum xy - \sum x \cdot \sum y}{\sqrt{N \sum x^2 - (\sum x)^2} \sqrt{N \sum y^2 - (\sum y)^2}}$$

$$r=0.8208$$

$$r^2=0.6737$$

$$\text{Probable Error (P.E.r)} = 0.6745 \left(\frac{1-r^2}{\sqrt{n}} \right) = 0.6745 \left(\frac{1-0.6737}{5} \right)$$

$$=0.0942$$

$$6P.Er = 0.5653$$

Appendix 21(D)

Correlation between Interest Income from Loan & Advances and Net Profit of NABIL (Rs in millions)

Fiscal Year	Interest Income(X)	Net Profit (Y)	$x=X-\bar{X}$	x^2	$y=Y-\bar{Y}$	y^2	xy
2005/06	988.41	635.26	-545.47	297538.4966	-68.96	4755.0449	37613.946
2006/07	1167.26	673.96	-366.63	134414.278	-30.26	915.59699	11093.661
2007/08	1496.24	746.47	-37.64	1416.836926	42.25	1784.9921	-1590.296
2008/09	2182.65	1031.05	648.77	420901.3525	326.83	106820.57	212039.91
2009/10	3368.73	1138.57	1834.85	3366671.241	434.35	188660.94	796968.85
total	9203.29	4225.31	1533.88	4220942.20	704.22	302937.14	1056126.1
mean	1533.88	704.22					

$$\text{Now, Co-efficient of Correlation (r)} = \frac{N \cdot \sum xy - \sum x \cdot \sum y}{\sqrt{N \sum x^2 - (\sum x)^2} \sqrt{N \sum y^2 - (\sum y)^2}}$$

$$r=0.9610$$

$$r^2=0.9236$$

$$\text{Probable Error (P.E.r)} = 0.6745 \left(\frac{1-r^2}{\sqrt{n}} \right) = 0.6745 \left(\frac{1-0.9236}{5} \right)$$

$$=0.0221$$

$$6P.Er = 0.1324$$

Correlation between Interest Income from Loan & Advances and Net Profit of NIC

(Rs in millions)

Fiscal Year	Interest Income (X)	Net Profit (Y)	$x = X - \bar{X}$	x^2	$y = Y - \bar{Y}$	y^2	xy
2005/06	485.25	96.59	-293.69	86254.79507	-114.31	13067.043	33572.237
2006/07	611.24	158.48	-167.70	28123.849	-52.42	2748.2933	8791.6201
2007/08	842.55	243.06	63.61	4046.020069	32.16	1034.1906	2045.5698
2008/09	1135.07	317.43	356.13	126827.3898	106.53	11349.671	37940.073
2009/10	1599.54	449.84	820.60	673381.6247	238.94	57092.722	196074.45
total	4673.65	1265.40	778.94	918633.68	210.90	85291.919	278423.95
mean	778.94	210.90					

Now, Co-efficient of Correlation (r) =
$$\frac{N \cdot \sum xy - \sum x \cdot \sum y}{\sqrt{N \sum x^2 - (\sum x)^2} \sqrt{N \sum y^2 - (\sum y)^2}}$$

$r = 0.9950$

$r^2 = 0.9901$

Probable Error (P.E.r) =
$$0.6745 \left(\frac{1 - r^2}{\sqrt{n}} \right) = 0.6745 \left(\frac{1 - 0.9901}{5} \right)$$

$= 0.0029$

6P.Er = 0.0172