

CHAPTER - I

INTRODUCTION

1.1. Background of the Study

This is the age of business, business means money. Actually money is main part for each and every financial transaction. It plays a great role in our life, and more than that management of the money governs the state of economy. In fact the entire financial sectors or economic systems of each country depend upon how much properly the money is managed. Because, all the financial institutions run on the basis of financial assets and those assets are measured in terms of money, or flows of funds between lenders and borrower through the medium of money. The financial institutions play a real and vital role for the proper management of money in each financial sector for economic development. Therefore, the Commercial Banks have a great responsibility to assist in economic development of nation as a mediator through coordination with the Central Bank/NRB. The commercial banks can do this only by means of lending and borrowing policies. As all know the main issue of economic development is to increase the investment in the productive sectors. Productive sectors mean such sectors which give some positive returns to the nation and create employment for its society. For this purpose, commercial banks and financial institutions have to invest their fund as much as possible. But before investing in any sectors banks should analyze and research about it properly. Only this is not sufficient for the commercial banks, after investment also they should be very clever always about their invested fund, weather the fund has been properly utilized in right place or not. Likewise, stakeholders of the banks also have to be very conscious about the investment of banks; where it has been investing its funds, in which way it has been providing loans, how much secure will be our fund if we invest in that bank, in how much secure sectors the bank has been investing its fund etc.

As above explained that banks have to invest their funds as much as possible. Therefore commercial banks have launched their lending products for borrowers in different forms, so borrowers can take the fund from bank as per their requirement. Such products can be categorized into *Personal Lending* and *Corporate Lending*. The Personal lending and Corporate lending also can be further classified. Among the different products of bank, this study is based on the 'Personal Lending'.

Actually, bank means not any place of producing money; it is just a place of managing money. So, generally banks are engaged in two types of activities 'one on each side of the Balance Sheet; 'Funds borrowing as Deposits' and 'Lending' it.

1.1.1 History and Evolution of Banking

The word "Bank", some believe that, it originated from the Latin word "Bancus" which means a 'Bench'. Similarly, some believe that it originated from the French word "Banque" and some to Italian word "Banca" all meaning a bench. Some have stronger belief that it originated from the German word "Banck" which means the collective fund. Ancient money dealers used to deal on a bench. Sometimes when the money dealers failed to meet the depositor's claim, the depositors used to break the dealer's bench from which the word "Bankruptcy" seems to be derived.

However, first of all Lombards introduced banking practice to England, who were originally from the plains of Lombardy of Northern Italy. These Lombards brought this business to the city of London and their home, the Lombard Street, which is still the center of British Banking. After a century the Lombards were eventually bankrupted because they lent their fund to king who didn't return them.

After the Lombards, The Goldsmiths practiced banking as a sideline to their normal activities in the bullion and jewellery fields. The person who deposited his surplus funds with the Goldsmith became as a Depositor and naturally paid for the privilege of having his money defended this way. The invention of

money was a milestone in the history of economy, and developing the banking habit in people. It has made economic and business activity more precise and efficient. This gave the emergence of non-institutional banking activities. Goldsmith, Merchants and Money Lending were the leader of such unorganized economic and financial transactions. Thus, the Merchants Money Lender and Goldsmith were the ancestors of modern bankers. During the early periods although the banking business was mostly done by private individuals, many countries established public banks either for the purpose of facilitating commerce or to serve the government. The bank of Venice established in 1157, which is supposed to be the most ancient bank.

During 1401, a public bank was established in Barcelona. It used to exchange the money, receive deposits and discounts bill of exchange, both for the citizen and foreigner. During 1407, the bank of Geneva was established. In 1609, the bank of Amsterdam was established. It was established to meet the needs of merchants of the city. The bank also adopted a plan by which depositors receive a kind of certificate entitling them to withdraw their deposit within six months. The most of the European Banks now in existence were found on the model of the Bank of Amsterdam.

1.1.2 Banking history of Nepal: - The banking history of Nepal is so old. In 879/80 A.D. a low cost merchant “Sankhadar Shankhwa” introduced a new era after paying all the debts that existed in the country. It is assumed that the unorganized Lending and Borrowing activities in the form of currency were dated back to ‘Mandev’. He was the first King of Nepal to bring in use of coins for economic activities. The coin is called “Mananka”. Later it was called “Gunanka”, “Baishanab”, “Pashupati” etc. were also brought in practice but the date were not printed in the coins.

In 1877 A.D. Prime Minister Ranoddip Singh introduced many financial and economic reforms in Nepal. The “Tejarath Adda” was established at that time. The main purpose of establishing this “Tejarath Adda” was to provide credit facilities to the general public at a very concessional interest rate on the basis of

collateral of Gold and Silver. Later on its services were extended out of Kathmandu valley.

Prior to the establishment of Nepal Bank Ltd., people relied on borrowings from the corrupt moneylenders, who charged very high interest rates and added other dues. Therefore, with the cooperation of Imperial Bank of India, Nepal Bank Ltd. (NBL) came into existence in 19... under the Nepal Bank Act 1937. In the beginning NBL played a dual role of Commercial bank and Central bank until the establishment of Nepal Rastra Bank (NRB) in 26 April, 1956, it carried all the functions of a central bank.

1.1.3 History of Commercial Banks in Nepal

Until 1984, the Nepalese financial sectors were dominated by the above two commercial banks. Commercial Banking Act 1974 was amended in 1984 to increase competition among commercial banks which made a provision for private sectors to enter into the banking line. As a result, Nepal Arab Bank Ltd. (Nabil Bank) was established on July 12, 1984, with the partnership of Dubai Bank Ltd., Dubai. (Shrestha, M S: 2007: 3), it was the first joint venture bank of Nepal in the form of a commercial bank.

Banks operating their business with the objective of earning profits are commercial banks. Commercial banks group spread fund and channel it to the productive sector for productive use. Commercial banks can be of various types such as Deposit Banks, Saving Banks, Industrial Banks, Investment Bank, Megha Bank, Exim Banks etc.

There are 26 Commercial Banks, 59 Development Banks, and 90 Financial Institutions in Nepal. The list of commercial banks has been presented as follows;

Table – 1.1

List of Licensed Commercial Banks

August 19, 2009

S.No.	Name	Established Date	Head Office
1.	Nepal Bank Limited	1937.11.15	Dharmapath, Kathmandu
2.	Rastriya Banijya Bank	1966.01.23	Singhadurbar Plaza, Kathmandu
3.	Nabil Bank Limited	1984.07.16	Kamaladhi, Kathmandu
4.	Nepal Investment Bank Limited	1986.02.27	Durbar Marga, Kathmandu
5.	Standard Chartered Bank Nepal Limited	1987.01.30	Naya Baneshwar, Kathmandu
6.	Himalayan Bank Limited	1993.01.18	Thamel, Kathmandu
7.	Nepal Bangladesh Bank Limited	1993.06.05	Naya Baneshwar, Kathmandu
8.	Nepal SBI Bank Limited	1993.07.07	Hattisar, Kathmandu
9.	Everest Bank Limited	1994.10.18	Lazimpat, Kathmandu
10.	Bank of Kathmandu	1995.03.12	Kamaladi, Kathmandu
11.	Nepal Credit and Commerce Bank Limited	1996.10.14	Siddharthanagar, Rupandehi
12.	Lumbini Bank Limited	1998.07.17	Narayangadh, Chitwan
13.	Nepal Industrial & Commerce Bank Limited	1998.07.21	Biratnagar, Morang
14.	Machhapuchhre Bank	2000.10.03	Prithvichoch,

	Limited		Pokhara
15.	Development Credit Bank Ltd.	2001.01.23	Kamaladi, Kathmandu
16.	Kumari Bank Limited	2001.04.03	Putali Sadak, Kathmandu
17.	Laxmi Bank Limited	2002.04.03	Adarshanagar, Birgunj
18.	Siddhartha Bank Limited	2002.12.24	Kamaladhi, Kathmandu
19.	Agricultural Development Bank Ltd.	2006.03.16	Ramshahapath, Kathmandu
20.	Global Bank Ltd.	2007.01.02	Birgunj, Parsa
21.	Citizen International Bank Limited	2007.06.21	Kamaladi, Kathmandu
22.	Prime Commercial Bank Ltd.	2007.09.24	New Road, Kathmandu
23.	Sunrise Bank Ltd.	2007.10.12	Gairidhara, Kathmandu
24.	Bank of Asia Nepal Ltd.	2007.10.12	Tripureswor, Kathmandu
25.	NMB Bank Ltd.	1996.11.26	Babarmahal, Kathmandu
26.	KIST Bank Limited	2009	Anamnagar, Kathmandu

(Source: Banking and Financial Statistics of NRB: Mid 2009:49)

1.1.4 Brief Profile of the subjected banks:

Nabil Bank Limited:

“Nabil Bank Limited is the first joint venture bank established in partnership with Dubai Bank Ltd. of Dubai. It was established on 12th July 1984. The bank

had initiated its business with authorized capital of NPR 60 million and paid up capital of NPR 30 million.” (Shrestha, M S: 2007: 34)

Looking back about the history of NABIL; ‘the shares owned by Dubai Bank Ltd. (DBL) were transferred to Emirates Bank International Limited, Dubai (EBILD) by virtue of its annexation with the letter. Later on, EBILD sold its entire 50% equity holding on National Bank Ltd., Bangladesh. (Dhakal, Ajay K: 2008: 5).

NABIL is the first bank introducing the Automatic Teller Machine (ATM) in Nepal through its three valley branches i.e. Kantipath, New Road and Lalitpur. The promoters and their shares in Nabil Bank Limited are as follows; NBL has the share capital of NPR 965 million. The major shareholders of this bank are as follows;

✓	NB (International) Ltd. holds	50%,
✓	General Public holds	30%,
✓	Rastria Bima Sansthan holds	9.67%,
✓	Nepal Industrial Development Corporation holds	6.15%,
✓	other Inaugurated Group holds	3.85%

Source: (Nabil, 2065/66, 13)

Everest Bank Limited (EBL)

Brief Profile

Everest Bank Limited (EBL) started its operations in 1994 with a view and objective of extending professionalized and efficient banking services to various segments of the society. The bank is providing customer-friendly services through its Branch Network. All the branches of the bank are connected through Anywhere Branch Banking System (ABBS), which enables customers for operational transactions from any branches.

With an aim to help Nepalese citizens working abroad, the bank has entered

into arrangements with banks and finance companies in different countries, which enable quick remittance of funds by the Nepalese citizens in countries like UAE, Kuwait, Bahrain, Qatar, Saudi Arabia, Malaysia, Singapore and UK. Bank has set up its representative offices at New Delhi (India) to support Nepalese citizen remitting money and advising banking related services.

EBL's **Joint Venture Partner is the** Punjab National Bank (PNB) of India, the joint venture partner (holding 20% equity in the bank) is the largest nationalized bank in India. With its presence virtually in all the important centers at India, Punjab National Bank offers a wide variety of banking services which include corporate and personal banking, industrial finance, agricultural finance, financing of trade and international banking. Among the clients of the Bank are Indian conglomerates, medium and small industrial units, exporters, non-resident Indians and multinational companies. The large presence and vast resource base have helped the Bank to build strong links with trade and industry.

Awards

) The bank has been conferred with “Bank of the Year 2006, Nepal” by the banker, a publication of financial times, London.

) The bank was bestowed with the “NICCI Excellence award” by Nepal India chamber of commerce for its spectacular performance under finance sector

Pioneering achievements

Recognizing the value of offerings a complete range of services, we have pioneered in extending various customer friendly products such as Home Loan, Education Loan, EBL Flexi Loan, EBL Property Plus (Future Lease Rental), Home Equity Loan, Vehicle Loan, Loan Against Share, Loan Against Life Insurance Policy and Loan for Professionals.

EBL was one of the first bank to introduce Any Branch Banking System (ABBS) in Nepal.

EBL has introduced Mobile Vehicle Banking system to serve the segment deprived of proper banking facilities through its Birtamod Branch, which is the first of its kind.

EBL has introduced branchless banking system first time in Nepal to cover unbanked sector of Nepalese society.

EBL is first bank that has launched e-ticketing system in Nepal. EBL customer can buy yeti airlines ticket through internet.

Corporate Vision & Mission:

Vision: To evolve & position the bank as a progressive, cost effective & customer friendly institution providing comprehensive financial and related services.

To integrate the frontiers of technology & serving the various segments of society.

To be committed to excellence in corporate values.

Mission

To provide excellent professional services & improve its position as a leader in the field of financial related services.

To build & maintain a team of motivated and committed workforce with high work ethos.

To use the latest technology aimed at customer satisfaction & act as an effective catalyst for socio-economic developments. (www.ebl.com)

Himalayan Bank Limited (HBL)

Introduction

Himalayan Bank was established in 1993 in joint venture with Habib Bank Limited of Pakistan. Despite the cut-throat competition in the Nepalese Banking sector, Himalayan Bank has been able to maintain a lead in the primary banking activities- Loans and Deposits.

Legacy of Himalayan lives on in an institution that's known throughout Nepal for its innovative approaches to merchandising and customer service. Products such as Premium Savings Account, HBL Proprietary Card and Millionaire Deposit Scheme besides services such as ATMs and Tele-banking were first introduced by HBL. Other financial institutions in the country have been following our lead by introducing similar products and services. Therefore, we stand for the innovations that we bring about in this country to help our Customers besides modernizing the banking sector. With the highest deposit base and loan portfolio amongst private sector banks and extending guarantees to correspondent banks covering exposure of other local banks under our credit standing with foreign correspondent banks, we believe we obviously lead the banking sector of Nepal. The most recent rating of HBL by Bankers' Almanac as country's number 1 Bank easily confirms our claim.

All Branches of HBL are integrated into Globus (developed by Temenos), the single Banking software where the Bank has made substantial investments. This has helped the Bank provide services like 'Any Branch Banking Facility', Internet Banking and SMS Banking. Living up to the expectations and aspirations of the Customers and other stakeholders of being innovative, HBL very recently introduced several new products and services. Millionaire Deposit Scheme, Small Business Enterprises Loan, Pre-paid Visa Card, International Travel Quota Credit Card, Consumer Finance through Credit Card and online TOEFL, SAT, IELTS, etc. fee payment facility are some of the products and services. HBL also has a dedicated offsite 'Disaster Recovery Management System'. Looking at the number of Nepalese workers abroad and their need for

formal money transfer channel; HBL has developed exclusive and proprietary online money transfer software- HimalRemit TM. By deputing our own staff with technical tie-ups with local exchange houses and banks, in the Middle East and Gulf region, HBL is the biggest inward remittance handling Bank in Nepal. All this only reflects that HBL has an outside-in rather than inside-out approach where Customers' needs and wants stand first.

HBL is not only a Bank, It is committed Corporate Citizen

Corporate Social Responsibility (CSR) holds one of the very important aspects of HBL. Being one of the corporate citizens of the country, HBL has always promoted social activities. Many activities that do a common good to the society have been undertaken by HBL in the past and this happens as HBL on an ongoing basis. Significant portion of the sponsorship budget of the Bank is committed towards activities that assist the society as large.

The Bank's Vision:

Himalayan Bank Limited holds of a vision to become a Leading Bank of the country by providing premium products and services to the customers, thus ensuring attractive and substantial returns to the stakeholders of the Bank.

The Bank's Mission:

The Bank's mission is to become preferred provider of quality financial services in the country. There are two components in the mission of the Bank; Preferred Provider and Quality Financial Services; therefore we at HBL believe that the mission will be accomplished only by satisfying these two important components with the Customer at focus. The Bank always strives positioning itself in the hearts and minds of the customers.

The Bank's Objective:

To become the Bank of first choice is the main objective of the Bank.
(www.hbl.com)

1.2 Statement of the problems

All the Commercial banks have been standing to enhance the economic development process of a country. But to be a supportive part in the country's development process is not very easy to the Commercial Banks. They have been facing various problems and challenges at the time of its operation. Such problems are, mainly, rising because of the political environment of the country. Moreover, due to the economic condition of the country, default of borrowers, competition between the financial institutions, and some confused policies of government also have been creating such problems and challenges in the smooth operation of banking transactions. However after liberalization in the economic system banking sectors gets various opportunities.

In the context of Nepal, after liberalization of economy Nepalese banking sectors has got pills of opportunities. They have made different schemes of collection from savers and different product of lending for the borrowers. But there are not only opportunities for the financial institutions; there are lots of threats also for them. As results in past days these kinds of news were published, 'NRB over took the management of the NB Bank Ltd., BOK etc. likewise some news were published about the highest Bad Debts Percentage. These issues come from the lack of knowledge on financial risk, interest rate risk, management risk, business risk, liquidity risk, purchasing risk etc.

This study basically deals with the following issues of the bank;

1. Finding the contribution of Personal Lending in earnings of banks.
2. Comparison of Profitability, Turnover and Credit Risk of NABIL bank, EBL and HBL.
3. Comparison of Deposit, Lending, and income trends of concerned banks
4. Relation between Deposit and Lending.
5. Liquidity position and its effects on lending.
6. Trend of Deposit, Personal-mortgage Lending, and Return on Personal Lending.

1.3 Objectives of the Study

Now, due to the globalization the world has been change into a single market. It has created both- Opportunities and Threats for business organization. Banking sectors also can be away or separate from such rumors. Likewise, the investors into the banks' share and debentures also can not be apart from its impact. The investors always should move their steps so carefully. And it's the duty of any researchers and students to make aware to both; 'Bank' and 'Investor', about their investment and fund. Therefore the main objective of this study is to measure the contribution of Personal Lending in the earnings of sampled banks. The specific objectives are as follows;

1. To analyze the contribution of Personal-Mortgage Lending (PML) in the profit of concerned banks.
2. Comparative study about the Personal-Mortgage Lending, Turnover, Profitability and Credit Risk of sampled banks.
3. To identify the product of personal lending unit (Classification of Personal Lending) of commercial banks.
4. To find out the trend and relationship between Deposit and personal lending.
5. To provide necessary suggestion for future research & improvement of Bank.

1.4 Significance of the Study

From the point of view of public; they always want to invest in such business organization which gives higher returns on against of their investment. Most people are, nowadays, investing their fund in Commercial banks even though they don't have sufficient knowledge about the bank, and day by day the borrowers of the banks also are increasing. To grab this opportunity Commercial Banks, Development Bank and other Financial Institution have been setting up like mushroom. Therefore, I have got a strong significant of this study is to provide some right information to investors and suggestion to

commercial banks about the main part of bank i.e. personal-mortgage lending. Because every banking organization mainly depends upon its lending capacity. If the banking organization be success to invest in right place for right borrowers with proper study then they will get a good returns from their investment, otherwise their investment fall in default or bad debt. As we are reading on newspaper; those banking organization have fallen in default which had acquired the fund or liquidity more than sufficient, and unfortunately they didn't have a complete vision or plan to move it. Therefore all investors need to know about each and every organization's operation where they invest their earning of life. But due to their carelessness all investors are not studying about it, in Nepal, like developed countries. However it's the duty of those people to share such information to all investors who studies about it because one investor's investment has the connection with other investors' investment.

Similarly, if the borrowers get right and proper information about the lending then they should not lose their earning in the form of excess interest expenses. They shouldn't face more difficulties to get such loan for their personal use, to establish small business, to make home, to marry, to send abroad their offspring for their study.

1.5 Limitation of the Study

- 1) As a common problem of all researchers it has been occurred here also; it is very difficult to collect the proper required data. Therefore five years' data, from 2004/05 – 2008/09, has been collected from different sources.
- 2) This study has been conducted of the three Commercial banks only named Nabil Bank Limited, Nepal; Everest Bank Limited, Nepal; and Himalayan Bank Limited, Nepal. Therefore it can't provide the complete information about Personal Lending of entire Commercial Banks.
- 3) All data couldn't collect through primary data source; therefore mainly this study is based on secondary data collection or published annual report of the bank. Moreover some data has been collected from

newspapers, journal, periodicals, and report published by the central bank. Therefore misinterpretation, omissions, misrepresentation may effect to the outcome of this study.

- 4) The time limit was short than its requirement for the study.
- 5) Banks don't provide all the data as per the requirement of this study, due to the competitors.

1.6 Organization of the Study

The present study is divided into five chapters as:

Chapter I - Introduction: This chapter includes general introduction of Commercial Banks & Financial institutions of Nepal and brief description of NABIL, EBL and HBL Bank. It also includes statement of problem, objectives & limitations of the study.

Chapter II – Review of Literature: In this chapter, related books, past research, journals & articles from web sites and newspapers will be reviewed.

Chapter III – Research Methodology: This chapter includes Research design, Data collection's procedures & different tools used.

Chapter IV – Presentation & Analysis of Data: This chapter includes Tabulation, Presentation & Analysis of collected data by using suitable statistical & accounting tools.

Chapter V – Summery, Conclusion and Recommendation: This chapter includes Summary, Conclusion and Recommendation.

Lastly Bibliography & Appendixes will be attached.

CHAPTER – II
REVIEW OF LITERATURE

Conceptual Review

Banks undertaking business with the objective of earning profits are commercial banks. Commercial banks pool scattered fund, and provide it for productive use. Commercial banks can be of various forms such as Deposit Banks, Saving Banks, Industrial Banks, Mixed Banks, Exim Bank etc. Commercial Banks render a variety of services. In the absence of commercial banks, it will be impossible to meet the financial needs of the country. Commercial Bank Act 1974 defines a commercial bank: ‘A commercial banks means bank which deals in exchanging currency accepting deposits, giving loans and doing commercial transactions.

2.1 Review of Books

Loans and Leases: - Loans made are the major assets of the commercial banks that generate the largest flow of revenue income. As the loan are least liquid assets of the bank, granting loans carrying the liquidity risks to most banks. Leases, in other hand, use by the commercial banks as alternatives to loans when the bank allows customers to use physical assets owned by the bank in return for periodic lease payments.

Depending upon the purpose of taking the loan, loans can categorize in many forms like commercial and industrial loans, real estate loan, individual loans, agricultural loans, other loans such as loans to nonbank financial institution, state and local government etc. (Manohar and Rajesh: 2009: 38)

Deposits: - Commercial banks are highly leveraged depository institutions because most of the funds used to finance in assets come from the debt in the form of deposit collection and non-deposit borrowings. Deposit is principal

liability of commercial banks that represents the financial claims by individuals, business and government units against the bank. The depositors enjoy the first priority in the claim against the proceeds from sale of bank's assets at the time of liquidation. The bank accept deposit in following five major categories as: Non-Interest bearing Demand Deposits, Saving Deposits, Negotiable Order of Withdrawal (NOW) A/c, Money Market Deposit A/c and Time Deposit. (Manohar and Rejesh: 2009: 39)

Managing Bank's Profitability: - The profitability is one important aspect of commercial bank. The combination of a bank's assets and liability structure along with its effective operation determines the ultimate profitability of a bank. The profitability of commercial bank can be measure quantitative in relation to the analysis of three important financial ratios- the leverage ratio, the turnover ratio, and the profitability ratio. (Manohar and Rejesh: 2009: 45)

Leverage, Profitability, and Risk: Investment in assets is made with the expectation to have certain return. But the investment always involves risk. In this sense, the risk and return are not separable from one another. Profit expectation also increases with increase in level of risk associated with investment. (Manohar and Rejesh: 2009: 55)

The principal business of commercial banks is to make loans to qualified borrowers. Loans are among the highest yielding assets a bank can add to its portfolio, and they provide the largest portion of most banks' operating revenue.

Banks make loans of reserves to other banks through the federal funds market and to securities dealer through repurchase agreements. For more important in dollar volume, however, are direct loans to businesses and individuals. These loans arise from negotiation between the bank and its customer and result in a written agreement designed to meet the specific credit needs of the customer and the requirements of the bank for adequate security and income.

Commercial banks are also important lenders in the real estate field, supporting the construction of residential and commercial structures. In fact, real estate loans are, by volume, the most important bank loan category. Major types of loans in the real estate category include and real estate credit, conventional government-guaranteed (FHA and VA) single-family residential loans, conventional and government-guaranteed loan on multifamily residences (such as apartments), and mortgage loans on nonfarm commercial properties. Today, commercial banks are the most important source of construction funding in the economy.

One of the most dynamic areas in bank lending today is the making of installment loans to individuals and families, particularly loans secured by a property owner's equity in his or her home (*i.e. home equity loans*. the interest cost of which may be tax deductible to the home owner and borrower.). Home equity loans can be used to finance a college education or to cover a variety of other financial needs not related to housing. Banks also finance the purchase of automobiles, home furnishings, and appliances and provide funds to modernize homes and other properties and to pay for education and travel. There is a growing concern today that consumer loans, particularly of the credit-card variety, have growing economy account for part of this trend. (Peter: 1997: 92)

Commercial banks offer two types of credit facilities namely funded facility and non-funded facility. In the case of funded facilities offered, cash is involved such as in OD facility, Demand Loan, Time Loan, Short Term Loan, Long Tem Loan etc. and in the case of non-funded facility, cash is not involved but only the contingent liabilities increase. LC and Guarantee facility offered by banks are non-funded facilities. (Shrestha: 2007: 177)

Hire Purchase Loan: In the case of Hire Purchase Loan, the article belongs to the owner (bank) and is given on hire to the customer. The hirer (borrower) will pay the owner (bank), the hire money agreed between them by installments

normally on (EMI) i.e. on equal monthly installment basis over a period of time. If the hirer fails to pay any installments due, the owner (financier or bank) will have unrestricted and undisputed right to take over the possession of the article or vehicle given on hire. Banks entertain for vehicles and costly durable goods such as refrigerators and television on hire purchase agreements. Nowadays, machinery and equipment are also being financed under Hire-purchase scheme. (Shrestha: 2007: 179)

Real Estate Loans: A domestic office loans secured by real estate is considered as real estate loans. Generally real estate loans are classified into seven subcategories: Construction and Development Loans, Multifamily residential real estate, Home Equity, 1 to 4 families residential, farmland and other real estate loans. These loans are classified separately because such loans are subject to different risks and regulation in the USA.

Real Estate Loans are amongst the most profitable type of loan at the time of prosperity and it represents the highest percentage of total loans in the commercial banks of the US. It builds up with the assumption that the lease rates and occupancy would quickly rise, and if this does not materialize banks end up with a property that can be disposed off at distress price only. (Shrestha: 2007: 180)

Individual or Consumer Loans: Consumer Loans are extended to individual borrowers. The average size of consumer loans is relatively small. The maturities of such loans are 1 to 4 years. Consumer loans are provided to finance durable goods in hire purchase like car, freeze, washing machine etc. Nowadays banks finance the education, medical care, traveling expenses etc. of individuals. The individual borrower's default risk is high compared to commercial loans. Consumer loans are considered risky because the goods financed through consumer lending cannot be sold in the face value and neither there exists a secondary market for such goods. Hence, the interest rates on such

loans are high in comparison to other types of loans. Consumer loans are normally repaid in installments consisting of principle and interest on EMI basis. As the interest is also paid every month, the actual cost of fund comes to be higher than other loans. (Shrestha: 2007: 181)

Principles of Lending: One of the basic functions of commercial banks is to provide credit. Out of their total income, on an average 60-70% of income consists from lending activities. Such income, based on lending is known as exposure based income because banks are exposed to default risk. In order to mitigate default risk, it would be wise to follow the principles of good lending.

Seven principles of Good Lending: Safety, Liquidity, Purpose, Profitability, Spread, Security and National Interest, Suitability. (Shrestha: 2007: 85)

A sound investment policy of a bank is such that its funds are distributed on different types of assets with good profitability on the one hand and provide maximum safety and security to the depositors and banks on the other hand. Moreover, risk in banking sectors financial trouble, its problem usually spring from significant amounts of loan that have become un-collectable due to mismanagement, illegal manipulation of loan, misguided lending policy or unexpected economic downturn. Therefore, the bank investment policy must be such that it ensures that it is sound and prudent in order to protect public funds. (Vaidhya : 1997: 46/47)

The commercial banks fulfill the credit needs of various sector of the economy including agriculture, industry, commercial and social service sectors. The lending policy of commercial banks is based on the profit maximization of the institution as well as the economic enhancement of the country. (Sunity: 2003: 51/52)

In investment decision expenditure and benefits should be measured in cash. In investment analysis, cash flow is more important than accounting profit. It may

be pointed out of that investment decision affects the firm's value. The firm's value will increase if investments are profitable and add to the shareholders wealth. Thus, investment should be evaluated on the basis of a criterion, which is comfortable with the objective of the shareholders' funds maximization. Investments will all to the shareholders wealth if it yield benefit in excess of the minimum benefits as per the opportunity cost of capital. (Pandy: 1999: 407)

2.2 Review of Journals and Newspaper

“Incentive Effects of Conditional Bank Recapitalization: Lending and Disclosure of Non-Performing Loans”

It is widely believed that one of the main sources of the prolonged economic slump of the Japanese economy in the 1990 is the collapse of asset and real estate prices, which have led to a banking crisis of an unprecedented scale. It is in large part the failure promptly to resolve this banking crisis that has led to a prolonged and massive recession. With a large fraction of non-performing loans, a reduced capital base and substantially lower liquidity the banking sector has dramatically reduced new lending activity and provoked a huge credit crunch.

Other countries have witnessed large scale banking crises in recent years, but what sets the Japanese experience apart is the problem of hidden loan losses and opaque accounting practices as well as the stunning complacency of regulatory authorities. More than in other countries banks have actively sought to hide the extent of their loan losses, so much so that every year financial markets were discovering to their horror that loan losses were substantially higher than anticipated. More than in other countries, regulatory authorities have hesitated and wavered in determining a strategy towards the resolution of the banking crisis, thus prolonging and worsening the crisis. (*Aghion, Bolton and Fries; 2009*)

Personal Loan Guarantees

Before you sign on the dotted line, take some time to understand your liability.

By David Newton | September 16, 2002

Many business owners have concerns regarding how a personal guarantee works when doing a funding deal. It's very important that you seek expert legal advice about the specific laws of your city and state, as this article simply aims to provide an overview of the basic issues related to a personal guarantee.

There are several details to consider, but the main line of reasoning begins with the words "personal" and "guarantee." These words mean what they say, so before putting their signatures on financial documents for the company, entrepreneurs need to consider very carefully the future potential impact these two words could have. The main concern Liability for the obligation agreed to by the firm.

The first word, "personal," refers to you, the individual, the owner of the company. It doesn't refer to your board members, your senior managers or any of your employees. It does not allude to the tax professional or attorney who provides business advice. In the case of a proprietorship, the owner/entrepreneur and the business are one and the same in the eyes of the law. When Mary Owner signs for Mary Owner Services, the line between personal and business is obviously not there. But even in the case of a dba, an LLC or a corporation, the line can also be very hard to find because it's not the company's name on the signature line--it's your name out there all by itself.

The second word, "guarantee," means "a pledge or assurance." Therefore, the term "personal guarantee" translates to you providing your own individual pledge or assurance for an obligation. Depending on the exact wording of your financing documents, you are personally pledging that you will make good on the obligation, even if your form of business organization provides limited liability protection under the law. (Newton: 2002)

Consumer financing in Nepal - Nepal news

BANKS RUSH INTO CONSUMER LENDING

With a low risk factor, **private commercial banks** as well as state- owned banks are jumping on the consumer financing bandwagon and trying to outdo each other with competitive interest rates. Almost all the leading banks, including the **Nepal Bank Ltd. (NBL)** and **Rastriya Banijya Bank (RBB)** have joined the rave by drastically reducing interest rates. While NBL and RBB offers housing loans at 7.5 per cent interest rate, some private commercial banks still charge 8.5 per cent to over 10 percent interest rates on **consumer loans**. Currently, the size of the consumer lending market is estimated at Rs 10 billion, banking officials estimate. However, the market has not been fully exploited. Parshuram Chhetri, chief lending officer at NBL, commented that big investors are losing interests on loans. However, demand for small loans has gone up which is also less risky compared to huge loans. Chhetri said that business confidence among big clients has been low. “The bank’s high liquidity and low interest rates in treasury bills issued by Nepal Rastra Bank (NRB) have also compelled the bank to go for consumer financing at low interests,” opined Chhetri. There is a high risk in **corporate loans**, he said. In consumer loan market, 60 to 64 per cent is occupied by auto, 35 per cent by housing and less than five per cent by the educational sector, said Chhetri. Effective ‘reform’ in RBB helped the bank to move into ‘consumer lending ‘ and compete with private banks, said Bruce Henderson, CEO of RBB. “The bank has reformed areas like lending and recovery, rightsizing staff, quality manpower, reducing non-performing assets (NPA) and computerization,” Henderson said. “Consumers get attracted towards **small loans for housing, automobiles and education**, thanks to low interest rates,” said Henderson. “A recent example is that over 750 people have already registered their names for housing, automobiles and educational loans at the exhibition recently held at Birendra International Convention Centre (BICC) at the RBB stall. “The bank is giving housing loans at the rate of 7.5 per cent interest rate and auto loans at seven per

cent interest rates. Keshav Poudel, manager corporate credit of Everest Bank Ltd. opined that consumer financing constitute 20 per cent of total loans, EBL is the first bank to introduce consumer loans in 2001,” claimed Poudel. Viability for investing in big projects seems dim. But small loans like housing and auto are getting safe and popular, said Poudel. Henderson of RBB said that the bank is opening the window of opportunities for many consumers. It encourages individuals to do business and other purposes and give loans promptly, he said. Chetan Thapa, relationship manager of **Bank of Kathmandu (BOK)** commented that the growth rate in consumer loans is going up. He said that there is a high risk in industrial loans and other big loans but it is safer in the consumer loans sector, coupled with better returns. Thapa said the growth rate in home loans has been 210 per cent, while the growth rate in education loans has been 150 percent for his bank. BOK started consumer financing about four years ago, Thapa said. (The Himalayan Times, March 29:2008)

“We plan to sell 1000 cars this year”

Atul Kumar Dhagat, Head – International Business, Passenger Car Business Unit of India’s Tata Motors Ltd. was in Kathmandu to launch Indica Vista, a new model of car from Tata. Excerpts from a brief interview:

“The norm should be capital adequacy, not paid-up capital”

Sashin Joshi, the CEO of NIC Bank Ltd. and the President of Nepal Bankers’ Association (NBA), shares his views on the latest situation of Nepali banking industry. Excerpts from an interview:

One important recent development in the Nepali banking sector is the gradual increase in the interest rate which is already much higher than in India. What opportunities and threats do you see from this in the Nepali economy?

The increase in interest rates seen recently is purely market driven and is reflective of conditions in the financial sector —— increasing competition and

unabated credit expansion fueled by inflation. But I do not agree that interest rates here are already much higher than in India. Lending rates in India for small businesses/consumer lending is still in the 13% to 15% range while the savings rate is only 5% p.a. while lending rates in Nepal is still between 9% to 11% range with some banks giving as much as 9% on fixed deposits and 5% to 7% on savings deposits in general. The borrowers in Nepal are virtually getting “free money” if one were to factor in inflation which is more than 11 percent. Furthermore, the above rates clearly demonstrate that banks’ margins or interest rate spread is much lower in Nepal compared to India or, for that matter, many other countries. Currently, lending rates in Pakistan, Sri Lanka and Bangladesh are above 15% p.a. reaching up to 20% p.a. and deposit rates are much lower, mostly in the sub-10% p.a. band. (June 2009: [New Business Age](#))

2.3 Review of online Journals/Website

“Mortgage loan qualifications”

When a loan is taken against some fixed property it is called mortgage. Right now we will try to understand the guidelines of mortgage and the options of mortgage. First and foremost thing is to do a complete survey of the kind of loans you could qualify for, and the requirements for it. This gives a perfect picture in front of you. That includes the kind of loan you could be eligible for, the do's and don'ts for mortgage loan, credit repair, FHA loan qualification, VA loan *qualification*, mortgage underwriting process etc.

When you talk of mortgage loan you must be aware of lot of terms like, *mortgage loan approval*, mortgage pre approval loan qualification, and pre qualification. You can not get confused with these terms and get mislead. It is very important to understand before you go for it.

Mortgage pre approval: As the name says, it is pre approval based on the information submitted before the verification. Now let's see the mortgage approval guidelines.

After the documentation is submitted the file goes to mortgage underwriter who again verifies the information. The underwriter sees each and every information carefully, and if necessary he may even ask for some more documents to strengthen the file. When the underwriter is satisfied you will get the approval of the loan by the lender. But this is not the time to go and spend the money, because the loan has been sanctioned but not yet credited. So do not take any other loan after asking for one mortgage, or even if your bank statement shows some instability, the loan can be immediately cancelled.

Now let us see some of important measures to be taken to decrease the down payment as well as the interest.

- 1) Credit guidelines
- 2) Debit to income ratio
- 3) Down payment or equity

These are some of the places where you could work on to qualify to a particular loan, as well as get to pay fewer down payments and the interest.

Credit guide lines: this is nothing but your credit scores. You must always work on it because as the thumb rule goes, the higher the score, the less risk and so less rate of interest and fewer down payments.

Debt to income ratio: this is the main tool underwriters use to calculate whether a borrower can qualify a loan or not, and if qualifies what would be his down payment and rate of interest.

They mainly depend on two points:

a) House expense to income ratio: which is (principal, interest, taxes and insurance) divided by your gross income.

b) Total monthly obligations to income ratio: which is gross monthly pay including *mortgage* divided by your gross income.

So the trick is to understand what is included and what is not included, and then show what can do not show what need not be shown. While doing this you have to be very careful. If the underwriter gets to know there was some mischief done with the details shown the loan can get cancelled. At times if one lender refuses to give then the rest also do not approve the loan.

Mode of payment for down payment: the lender at times will also be interested to know from where you would be paying your down payment. If it is from your income or bank balance he will have no problem, but if you are another loan for paying down payment then he will definitely refuse your loan.

These are some of the attributes to qualify for a *mortgage*. There are lot of other attributes which a lender would like to see and then decide whether to give a loan or not. So before applying for a loan keep all these attributes in mind and then go for it. (www.novinite.com)

New Zealand home loans

The real estate in *New Zealand* has seen vast improvements over the years and there have been huge demands for properties in New Zealand. The financial institutions have got a lot of success and it is helping the people to fulfill the dream of owning a house in New Zealand. The loans come in great packages with great services, process and also tools that will help in offering some financial assistance.

The repayment period for the loans are also relaxed that help in easy repayment of the loan amount. The loans offer great flexibility and also freedom and help in providing financial assistance. The loans are designed to give financial assistance and also allow you to make some savings. The *home loans* also help in helping you to achieve your financial goals. The home loans are competitive and they are delivered through great expertise and from experienced financial institutions.

Benefits of a home loan

New Zealand is a sort of unexplored territory and in the recent years it has attracted the attention of the world for its beauty and exotic locations. The price rates of the real estate in New Zealand have increased considerably. The home loans help you to make the down payments on the property and it helps you to avoid any extra financial pressure. The loans will help in saving money and the loans are designed into different models to suit the needs of different people.

One of the most popular home loans is the **mortgage loans** with fixed rates. These loans come with a fixed interest rate and it is a good option for people who want a longer repayment period with lower interest rates. The loan amount will depend on the type of loan that is taken by the borrower. The principle of repayment of the loans will vary for different home loans. The variable home loans will have variable interest rates and it will vary during the course of the loan.

Guidelines of the loan

A normal *home loan* will give at least 95% of the property value most likely a residential property. These types of loans will require insurance and also an application fees while applying for the loan. The loans will also require a registered valuation and the loan should be used only to purchase standard properties like apartments, single houses etc. The loans will have a monthly payment that should be paid regularly.

Any lapse in the payment will result in payment penalties or an increase in the interest rates. Online banking is also possible now that allows you to easily apply for a loan and also follow the loan process closely. It also helps in saving a lot of time and helps in avoiding in long queues to make the payments. A lot of lenders have their own website where you have the option to make the loan payments. Most of the home loans allow you to apply for a loan online. The processing and approval of the loan is quick. A person should make proper research before going for any particular loan. Studying about *home loans* can help you to get the best deal. (www.novinite.com)

Nepali online Journals:

Table No. – 2.1

Car loans in Nepal
<p>Auto loans This Nepal Bank loan is provided for:</p> <ul style="list-style-type: none"> - Purchase of new vehicles - Purchase of old / used vehicles (For Private use only) - Swapping (For Private and Commercial use). Some of criteria for taking auto-loans are as follows; -The loan is provided to Nepalese Citizens only. -This is provided to any salaried and self-employed individuals and companies. <p>Car finance by Nabil bank</p> <p>We are committed to provide finance for purchase of your vehicles - be it for personal or commercial purpose. Please step into one of our branches and ride home in your new car</p> <p>Vehicle loans by CEFI</p> <p>Loans to finance heavy commercial vehicles, Private Car, Jeep, Pickup, and taxis</p> <p>car loans</p>
Motor loans

Motor and car loans

Financing cars, vehicles for private use by the Bank of Kathmandu

Other loans**Education loan by the Nepal Bank****Foreign employment loan**

Financing eligible individuals recommended by the Nepal Government going abroad on a pre arranged employment through a recognized employment agency

(Source: www.suryasun.com)

2.4 Review of News Published by NRB

07-01-2010:

Banks in Nepal have revised their lending rates upward in the range of 2.5 to 3.5 percentage points amid long-running liquidity crunch and enforcement of new lending policy by Nepal Rastra Bank.

15-12-2009:

With the commercial banks mulling over hiking interest rates on lending, life could be tougher for those seeking loan from the banks. Since interest rate on deposits is increasing, there is pressure on the banks to increase interest in lending rates.

11-08-2009:

Everest Bank Limited has stated that it earned a net profit of Rs 624 million in 2008/09 fiscal year, which is 38 percent rise over previous year's profit. The operating profit during the year touched Rs 1.06 billion, compared to Rs 818.2 million of the previous year. Its deposits increased by 39 percent and loans grew by 30 percent during the period.

16-3-2009

Himalayan Bank Ltd chairman Manoj Bahadur Shrestha on Sunday inaugurated the bank's 20th branch in Chabahil at Chucchepati. Speaking on the occasion, bank CEO Ashoke SJB Rana said that in the first seven months of the current fiscal year, the bank's deposit base had grown to above NPR 32.14 billion and loan portfolio was over NPR 22.46 billion. It also reduced its NPA level to 1.84 per cent. "HBL has channeled remittance inflow worth's \$312 million as of Magh end," he said.

13-2-2009

Himalayan Bank Ltd inaugurated its 19th branch in **Palpa** on Thursday. The bank has reduced its NPA to 1.84 per cent from 2.36 per cent. The deposit base of the bank has also grown to above NPR 32.45 billion and the loan portfolio is over NPR 21.35 billion.

19-1-2009:

Himalayan Bank Ltd completed 16 years of its establishment. The bank registered a deposit of NPR 32.46 billion and loan of NPR 21.42 billion till January 13, with an operating profit of NPR 598 million. The bank's net profit during the fiscal year 2007-08 was NPR 635.9 million.

5-1-2009:

Himalayan Bank Ltd opened an 18th branch office in Itahari on Sunday. The bank deposit rose to over NPR 32.79 billion and loan portfolio to over NPR 21.31 billion. During the first five months of the current fiscal year. It registered operating profit of NPR 450.3 million. It has been able to make inflow of NPR 10 billion remittance as on December 15. (www.loans.com.np)

2.5 Work Experience

During my six months working period with the Nabil bank limited I got to learn lots of things over there. As I started my job in Nabil from 26 March, 2009 I got a chance to work under the Personal Lending Unit (PLU) of Nabil bank at

Newroad branch for Educational Loan of Australia, then after 2 months I got another chance to learn and work for Hire Purchase Loan (Vehicle Loan) at Lalitpur branch, and finally I got the chance to work for Mortgage, Education and Hire Purchase Loan at Maharajgunj branch, Kathmandu. PLU of Nabil issues the loan for individuals only against of their security/properties and incomes. The features and process of the Personal Lending was as follows;

Personal Lending
Overview Housing Finance Auto Finance Personal Finance Education Loan
Overview
<p>We, at personal lending unit located at Lalitpur Branch, are committed to provide you with top-notch services when it comes to your personal financial needs. Whether you need to buy your dream house or your fast car, need to mortgage your house for money for any reason or need funds for household items, you are more than welcome. Please step in and feel the difference for your personal financial needs.</p>

(Source: www.nabilbank.com)

Home Loan

Home loan is given to purchase any new land, land and building on the basis of the borrower's income and collateral. In the home loan the collateral is assumed to the same land which the borrower purchases from seller. For this purpose customers have to fulfill some requirement. They should bring all the required documents which have been quoted in the 'Checklist' in the last page of Application form. Sample of check list:

Table No. - 2.2

Housing Loan feature

HOUSING LOAN			
Features:			
Rate of Interest	10.5% p.a.	-	5 years
	11.00% p.a.	-	8 years
	11.50% p.a.	-	15 years
	12.50% p.a.	-	20 years
Financing	Up to 70% of collateral value		
Moratorium Period	Max 18 months or construction period whichever is earlier		
Charges:			
	<ul style="list-style-type: none"> ▪ 1% Service Charge on loan amount ▪ NPR 3,500/- as Documentation Fee ▪ Valuator's Fee separately to the Valuator ▪ Insurance Policy of building (wherever applicable) ▪ Mortgage Fee (at Land Revenue Office as per the Govt. rules) ▪ Prepayment allowed only after 1 yr. with 1% Charge. 		
Required Documents:			
	<ul style="list-style-type: none"> ▪ Photos (2 for applicant & co-applicant, 1 for guarantor/s) ▪ Copy Citizenship ▪ Copy of Bank a/c statement 		
Income Source paper/Certificate			
Valuation Report -from Bank's Valuer			
Property Documents			
	<ul style="list-style-type: none"> ▪ Lalpurja & Rajinama (Source Document) ▪ Malpot Receipt latest ▪ House Tax Receipt (wherever applicable) ▪ Approved House Map+ Ijajat & Nirman Sampanna ▪ Blue Print (Naapi Naksa)+ Trace Map ▪ Four Boundary Disclosure (Char Killa Pramanit) 		
*Purpose of borrowing			

Housing loan products also have been divided into other different parts; Personal loan for *Purchasing Land, Purchasing Land & Building, Construction of new house, Renovation of existing house etc.*

Financing structures: -

Purchasing land- Min NPR 300,000/- to max 70% of the Distress Value of the proposed land to be mortgaged.

Purchasing Land & Building- Min NPR 300,000/- to max 70% of the Distress Value of the proposed Land & Building to be mortgaged.

Construction and Renovation- min NPR 300,000/- to max 70% of estimated cost for construction and renovation.

Auto Loan

Auto loan also has been divided into different parts i) New Private Vehicle, ii) New Commercial Vehicle, iii) Used Private vehicle and iv) Used Commercial Vehicle.

i) New Private Vehicle: - These are such kinds of vehicles which are purchased to ride personally or used for personal use, which are registered in the red number plate. About the new private vehicle; NBL finances upto 80% - 90% in different loan tenures. The sample of the Auto loan feature and requirement is as follows;

Table No. – 2.3

Auto Loan feature (private)

AUTO LOAN	
Features: (Private New)	
Rate of Interest	10%- 11% p.a.
Financing	Up to 80% of Purchased price
Max. Loan Tenure	8 years
Charges:	
▪ 1% Service Charge on loan amount	
▪ CIC Fee -standard	
▪ Insurance Policy of Vehicle	
▪ Prepayment allowed only after 1 yr. with 1% Charge.	
Required Documents:	
▪ Quotation of Dealer	
▪ Photos (2 for applicant & co-applicant, 1 for guarantor/s)	
▪ Copy Citizenship	
▪ Copy of Bank a/c statement	
Income Source paper /Certificate	
Property Documents	
Copy of Lalpurja	

ii) New Commercial Vehicle: - these are such kinds of vehicles which are purchased for commercial purpose to generate money running in different route. It is registered in black plate with white letters or in white plate with black letters. The sample of the Auto loan feature and requirement is as follows;

Table No. – 2.4

Auto Loan feature (commercial)

AUTO LOAN	
Features: (Commercial New)	
Rate of Interest	11%- 12% p.a.
Financing	Up to 80% of Purchased price
Loan Tenure	min 5 years – max 8 years
Charges:	
<ul style="list-style-type: none">▪ 1% Service Charge on loan amount▪ CIC Fee -standard▪ Insurance Policy of Vehicle▪ Prepayment allowed only after 1 yr. with 1% Charge.	
Required Documents:	
<ul style="list-style-type: none">▪ 2 years old blue book registered in the name of borrower.▪ Route permit or letter of transportation committee for traveler vehicles.▪ Quotation of Dealer for Chasis (if any)▪ Quotation of body builder (if any)▪ Photos (2 for applicant & co-applicant, 1 for guarantor/s)▪ Copy Citizenship.▪ Copy of Bank a/c statement.	
Income Source paper /Certificate	
Property Documents	
Copy of Lalpurja	

iii) Private Used Vehicle: - these are such types of vehicles which are purchased from another people for personal use, means these are not fresh vehicle purchased from dealer. These can be purchased from *friends, relatives* and *others* who have already used it. In the case of private used vehicles NBL normally finances for maximum 4 years but not exceeding 7 years from the registration date of the vehicle in Nepal. Suppose; 2001 model's vehicle can't be financed because it's already been 8 years, but the 2003 model's vehicle can be finance for 1 year because its registration has become 6 years already (7 years - 6 years = 1 yr). It also has the same feature as other new private vehicles except *interest rate* and *loan tenure*. It has 1% to 2% higher interest rate and maximum loan tenure is 4 years.

iv) Commercial used vehicle: - these vehicles are such types of vehicles which have been using by people for commercial purpose and it's been purchased by another person for the same purpose. It also has the same feature as the commercial new vehicles except the *loan tenure* and *interest rate*, and for such

vehicles NBL finances for max 4 years and not exceeding 7 years from the date of its registration. In this loan also the interest rate comes to be 1% to 2% higher than other normal commercial new vehicles.

Note: - here used vehicle means anyone such vehicle which has been once already purchased from the dealer.

Mortgage Loan: -

Mortgage loan has the same features as the Housing loan. Its requirements also are same as the HL. The land and building can collateral. The only difference in between the HL and ML is the purpose of the loan borrowing. This loan can be proposed for any legal reason; for *marriage, business, study, settlement of personal borrowings, to go abroad, treatment etc.* One sample feature/ check list of the ML;

Educational Loan

This is also one type of Mortgage Loan especially for Australia. This product has been designed especial after a specific recommendation of Australian High Commission (AHC) for Nepal. AHC has selected two financial institutions from Nepal for this purpose they are NBL and SBI Bank Limited of Nepal. In NBL there is not any such specific product about Education except than this. People can take mortgage loan for educational purpose but not under any such specific educational product. And the excess amount of the Australian educational loan can't use for any other purpose it should use only for the study in the Australia in the same purposed subjects.

Personal over Draft (OD)

Personal over draft (OD) is such kinds of loan in which the customers only pay the interest monthly, quarterly or as quoted by the bank, and it can be settled at any time as the customers have enough money to repay. OD is issued only for *Good Repeat* and *prime* customers. Prime means; that has not been charged any

penalties, no over dues of previous loan, has regular payment of installments. OD has the certain limit of maximum NPR 25 lakhs or 50% of the collateral (Land & Building) which one is lower.

Note: - the Housing, Mortgage, Auto loan have some limit, in the case of NBL personal lending unit PLU) can approve up to NPR 0.3 million to NPR 5 million, and more than this PLU should approve it from CEO or head office.

It provides such loan up to 70% of the collateral's *distress value*. Here the collateral means the Land and Building of the borrowers. Distress value = 30% of 'Government rate of land' + 70% of 'Market rate of land'.

Steps in Lending Process

- a) Application and all the required documents for the Loan
- b) Site visit and Interview with customer
- c) Collection of service charges and fees
- d) Documentation
- e) Approving file
- f) Mortgage of Land & Building
- g) Disbursement

2.6 Review of Unpublished Masters' Thesis

There are a few Master's Degree studies in Nepal which have conducted research about the Personal Lending under Retail banking done by M.B.A. and M.B.S. students. However we can get lots of researches about the "credit" and "Investment" management of commercial banks, some of them have been summarized as below:

2.6.1 Dhruba Raj Neupane's study

In his study about A study on lending policy and its implication of commercial banks in Nepal (A comparative study of Nabil Bank, Everest Bank and NIC

Bank) in 2009, with the data of 2003/04 to 2007/08, the objective of the study was as follows;

-) To study the lending process of the banks.
-) To find out the proportion of lending over the deposit of the bank.
-) To find out the proportion of investment in different sectors.
-) To recommend for the proper efficiency of banks on the basis of findings.

He has listed his major findings as follows;

- On the basis of better performance of the client, bank can provides reduction on interest rate or rebate to its prime client and provides certain facility. On the other hand if negligence arises from the client, bank can charge penal interest and those clients are forced for timely repayment of borrowings.
- Nature of loan has been designed considering the nature of project and business.
- Different interest rate is charged to the prime client and ordinary client. Prime clients are those clients who have regular relation with the bank.
- The interest rates charged by the commercial banks range from 9% to 13% which is quite lower than when we look at the past records, the interest rates charged by the commercial banks were as high as 20% and by private lenders the rate was 36%. In the past interest rates on the deposit amount was 13% to 15%. Today highest interest rate on deposit is about 4.5%. The spread rate is 7% to 9% which is above the standard of NRB directives.

2.6.2 Mukesh Khanal's study

The study with the title of Investment Policy of Joint Venture Banks in Nepal a Case Study of Nepal Bangladesh Bank in 2003 have the main objectives as follows;

-) To highlight the overall investment pattern of NB Bank.

-) To analyze the liquidity, asset management efficiency, profitability, risk and growth position of NB Bank with respect to investment pattern.
-) To examine the fund mobilization and investment policy of NB Bank through off-balance sheet and on balance sheet activities.
-) To analyze deposit utilization and its relationship with total investment and net profit of bank.
-) To provide the suggestion for improving the investment policy of NB Bank on the basis of findings of the analysis.

2.6.3 Ajay Kumar Dhakal's study

The study about the Investment Analysis of Joint Venture Banks in Nepal (with special Reference to NABIL, HBL, and SCBNL)” of Ajay Kumar Dhakal in 2008 with the data of 2002/03 to 2006/07 was the study about the commercial joint venture banks of Nepal. His main objectives of this study was as follows:

- To analyze the percentage of investment made by HBL, SCBNL and NABIL Bank Ltd. and compare this with the total investment made by commercial banks.
- To identify investment sector of Nabil Bank Ltd., SCBNL and HBL.
- To evaluate the liquidity assets management efficiency, profitability and risk position of Nabil Bank Ltd. in comparison to HBL and SCBNL.
- To study the relationship between investment and deposit of the banks.

To recommend the policies to be adopted by the sample organization based on the financial analysis for its future development.

Major findings of the study were as follows;

- From the analysis of current ratio it is found that the mean of ratio of NABIL is higher than that of SCBNL and HBL. It means NABIL has maintained the higher liquidity.
- The mean ratio of cash and bank balance to current assets of NABIL is lower than SCBNL and HBL. It states that cash and bank balance in liquidity position of NABIL is lower than other two banks.

- The mean of Loan and Advances to current assets of NABIL bank is higher than HBL and slightly lower than SCBNL. The ratio of NABIL is more consistent than SCBNL and less consistent than HBL.
- The mean ratio of Loan and Advances to total deposit of NABIL is higher than that of SCBNL and HBL. The ratio of NABIL is more stable than SCBNL and less than HBL.
- From his study; NABIL bank has become comparatively successful in its on balance sheet operation is compared to SCBNL and HBL.
- The mean ratio of total interest earned to total outside assets of NABIL bank is higher than HBL and slightly lower than SCBNL.
- From the study the profitability ratio of NABIL is comparatively in higher position than that of SCBNL and HBL.
- NABIL bank has maintained high growth ratios on total deposit, loan & advances, and total investment but it has moderate position on net profit.
- Net profit of all three banks have in increasing trend.

2.6.4 Dharma Raj Adhikari's study

The study of Credit Management of Nepal-Bangladesh Bank Limited was carried out by Dharma Raj Adhikari in 2007, which was a research about the credit management of single commercial. He analyzed the data of these respective banks from fiscal year 1998/99 to 2004/05. The main objective of the study can be stated as follows;

- To know the volume of contribution made by NB bank in credit and advances.
- To analyze trend of deposit utilization towards loan and advances and net profit.

Major findings of that study are as follows;

- More than 72% of total deposit of NB Bank is utilized in Credit and Advances. Correlation of coefficient of NB Bank shows that there is high degree of correlation between credit & advances and total deposit i.e. 0.978. Total credit and advances is almost 148% of fixed deposits.

NB bank has almost 63% of total assets in the form of credit and advances.

- Performance assets to total assets ratio of NB Bank is decreasing regularly in the research period. In the research period of five years, the ratio of NB Bank has fallen by 7%.
- Overdue credit ratio of NB bank in the research period in average is almost 13%.
- As the total debt to equity ratio and other leverage ratio shows that bank is slowly forwarding towards to low capital gearing ratio.
- The profit ratio of NB Bank is decreasing in the research period.

2.6.5 Prem Bahadur Shahi's Study

The study about Investment policy of commercial banks in Nepal carried out by Prem Bdr. Shahi in 1999 with the data of 1993/94 to 1998/99, and the objective of that study have summarized here under;

- To evaluate the liquidity, assets management efficiency and the profitability and risk position of Nepal bank limited to the joint venture banks.
- To discuss fund mobilization and investment policy of Nepal bank limited in respect to its fees based off-balance sheet transaction and fund based on-balance sheet transaction on comparison to the joint venture banks.
- To find out the empirical relationship between various important variables i.e. deposits, loan and advances, investment, net profit etc. and compare them with the joint venture banks.
- To analyze the deposit utilization trend and its projection for next five years of the Nepal bank limited and compare it with that of the joint venture banks.
- To provide a package of workable suggestion and possible guidelines to improve investment policy of Nepal bank limited and the joint venture

banks based on the findings of the analysis, for the improvement of financial performance of Nepal bank limited in future.

The research findings of the study;

- The liquidity position of NBL is comparatively better than the JVBs. Highly fluctuating liquidity position shows that the bank has not formulated any stable policy. It can be concluded that NBL has more portions of current assets as loan and advances but less portion as investment on govt. securities.
- The mean ratio of loan and advances to total deposit of NBL is slightly lower than that of the JVBs.
- Portfolio position of NBL is comparatively not better than the JVBs. It indicates that NBL must maintain its high profit margin in future.

2.6.6 Lila Prasad Ojaha's Study

Lila Prasad Ojaha has conducted a study on Lending Practices: A Study of NABIL Bank Ltd., SCBNL and HBL with the major objectives of;

- To determine the liquidity position, the impact of deposit in liquidity and its effect on lending practices.
- To measure the bank's lending strength.
- To analyze the portfolio behaviour of lending and measuring the ratio and volume of loans and advances made in agriculture, priority and productive sector.
- To measure the lending performances in quality, efficiency and its contribution in total income.

The major findings of the study are as follows;

- The measurement of liquidity has revealed that the mean current ratio of all the three banks is not widely varied. All of them are capable in discharging their current liability by current assets.
- The measurement of lending strength in relative terms has revealed that the total liability to total assets of SCBNL has the highest ratio.

- The ratio of investment to investment and loan & advances has measured the total portion of investment on total of investment and loans & advances. The mean ratio among the banks does not have deviated significantly.
- The loan & advances and investment to deposit ratio has shown that NABIL Bank Ltd. has deployed the highest proportion of its total deposits in earning activities. This is the indicative of that in fund mobilizing activities NABIL Bank Ltd. is significantly better.
- The portfolio analysis of has revealed that the flow of loans and advances in agricultural sector is lowest priority sector among these commercial banks but the contribution of all banks in industrial sectors is appreciable.
- The lending in commercial purpose is highest in case of NABIL bank ltd. in the comparison of SCBNL.
- The mean ratio of interest income to total income has concluded that the contribution of interest income in total income is higher in case of HBL in the comparison of SCBNL.

2.7 Research Gap

The purpose of this research is different from the studies conducted before. In previous studies had been made about the entire credit department of commercial banks not specifying separately like Personal Lending, Business Lending etc. Therefore, this study has been carried out to find the contribution of Personal Lending Unit of Commercial banks in the entire profit of that bank. Moreover, it is to study and compare the deposit, lending, profitability and turnover trend of NABIL bank, EBL and HBL, likewise it has been conducted to find out the trend and relationship between deposits and personal-mortgage lending (margin covered by the Personal Lending Unit for lending from deposit), to identify the product of personal-mortgage lending (Classification of Personal-mortgage Lending),

CHAPTER – III
RESEARCH METHODOLOGY

Introduction

A research methodology defines what the activity of research is, how to proceed, how to measure progress, and what constitutes success.

The technique or way which is applied in the research process is called *Research method*. In another words, that method which is applied by the researcher to solve the research problems is known as *Research Method*. The research problems are studied and observed systematically through the research method. (Joshi: 2007:26)

According to the Oxford Advance Lerner’s Dictionary, Research means – to study something carefully and try to discover new facts about it, and methodology means – a set of methods and principals used to perform a particular activity. So as per the Oxford Dictionary, research methodology means, ‘the set of methods and principals which are used to perform some particular activities to discover new facts about the subject matter’. (Oxford Dictionary: 2005: 963/1290)

A research methodology helps us to find out accuracy, validity and suitability. It refers to the various sequential steps to be adopted by a researcher in studying a problem with certain objectives in view. The justification on the present study cannot be obtained without help of proper research methodology. Therefore, we can say this; the research methodology is a systematic technique to solve the research problem.

For the purpose of achieving the objectives of the study, the following methodology has been projected;

1. Research Design
2. Nature and Sources of Data

3. Population and Sample
4. Presentation and Analysis of Data
5. Tools for Analysis

3.1 RESEARCH DESIGN

According to Kerlinger, “Research Design is the plan structure and strategy of investigations conceived so as to obtain answers to research question and to control variance.”

According to Cook, “A research design is the arrangement of condition for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure.” (Joshi: 2007: 39)

The descriptive research techniques have been applied for the lending of PLU of those three joint venture banks, and some statistical and financial tools have been adopted to examine facts.

3.2 NATURE AND SOURCES OF DATA

Generally there are two sources of data collection i.e. **Primary Data Source** and **Secondary Data Source**. But this study has been mainly conducted on the basis of secondary data sources to analyze and compare about personal lending of concerned commercial banks. The data of the different financial and statistical variables related in this topic have been collected basically from annual reports and financial statements of concerned banks. Moreover this, other additional data and information are obtained from the following sources;

- Annual reports of concerned banks
- Web sites of concerned banks
- Newspapers & Magazines

3.3 POPULATION AND SAMPLE

There are 26 commercial banks all over the Nepal, and most of them stocks have traded actively in the stock market. All the commercial banks are population for this study; however 3 commercial banks have been selected as a

sample banks for this study, which have been selected on these bases; Nabil Bank is the first commercial joint venture bank of Nepal, Everest bank has the joint venture with India's Panjab National bank with which country the economy of Nepal is mostly dependent, and Himalayan bank is the bank established by Rana family of Nepal.

The population banks are as follows;

Table No. – 3.1

List of Licensed Commercial Banks

S.No.	Name	Established Date	Head Office
1.	Nepal Bank Limited	1937.11.15	Dharmapath, Kathmandu
2.	Rastriya Banijya Bank	1966.01.23	Singhadurbar Plaza, Kathmandu
3.	Nabil Bank Limited	1984.07.16	Kamaladhi, Kathmandu
4.	Nepal Investment Bank Limited	1986.02.27	Durbar Marga, Kathmandu
5.	Standard Chartered Bank Nepal Limited	1987.01.30	Naya Baneshwar, Kathmandu
6.	Himalayan Bank Limited	1993.01.18	Thamel, Kathmandu
7.	Nepal Bangladesh Bank Limited	1993.06.05	Naya Baneshwar, Kathmandu
8.	Nepal SBI Bank Limited	1993.07.07	Hattisar, Kathmandu
9.	Everest Bank Limited	1994.10.18	Lazimpat, Kathmandu
10.	Bank of Kathmandu	1995.03.12	Kamaladi, Kathmandu
11.	Nepal Credit and Commerce Bank Limited	1996.10.14	Siddharthanagar, Rupandehi

12.	Lumbini Bank Limited	1998.07.17	Narayangadh, Chitwan
13.	Nepal Industrial & Commerce Bank Limited	1998.07.21	Biratnagar, Morang
14.	Machhapuchhre Bank Limited	2000.10.03	Prithvichoch, Pokhara
15.	Development Credit Bank Ltd.	2001.01.23	Kamaladi, Kathmandu
16.	Kumari Bank Limited	2001.04.03	Putali Sadak, Kathmandu
17.	Laxmi Bank Limited	2002.04.03	Adarshanagar, Birgunj
18.	Siddhartha Bank Limited	2002.12.24	Kamaladhi, Kathmandu
19.	Agricultural Development Bank Ltd.	2006.03.16	Ramshahapath, Kathmandu
20.	Global Bank Ltd.	2007.01.02	Birgunj, Parsa
21.	Citizen International Bank Limited	2007.06.21	Kamaladi, Kathmandu
22.	Prime Commercial Bank Ltd.	2007.09.24	New Road, Kathmandu
23.	Sunrise Bank Ltd.	2007.10.12	Gairidhara, Kathmandu
24.	Bank of Asia Nepal Ltd.	2007.10.12	Tripureswor, Kathmandu
25.	NMB Bank Ltd.	1996.11.26	Babarmahal, Kathmandu
26.	KIST Bank Limited	2009	Anamnagar, Kathmandu

(Source: Banking and Financial Statistics of NRB: Mid 2009:49)

Out of the 26 commercial banks the **sample banks** are as follows;

2. NABIL Bank Limited (NABIL)
2. Everest Bank Limited (EBL)
2. Himalayan Bank Limited (HBL)

3.4 DATA ANALYSIS TOOLS

The work of data analyzing is a very tough job. Data analyses do not give the answer, itself, of the research questions. The meaning of data analysis is to

manage, classify, arrange and summarize to the collected data for getting answers at the time of research. For these, we use some financial tools and statistical tools as per the requirement of subject matter.

3.4.1 Financial Tools for Data Analysis

Leverage Ratio:

Leverage ratio reveals the extent to which a bank relies on debt. Any bank with higher leverage ratio indicates a more riskiness in its position. It is because the interest payment on debt is fixed but the earning of the bank fluctuates. (Manohar and Rejesh: 2009: 45/46)

) Debt-to-assets (D/A) ratio

This ratio shows the portion of assets that the bank finances with debt. Lower debt to asset ratio means that the bank has used lesser debt amount and more equity to finance its assets.

$$\text{Debt-to-Assets Ratio (Debt Ratio)} = \frac{\text{Total Debt}}{\text{Total Assets}}$$

) Debt-to-equity (D/E) ratio

This ratio shows the relationship between the firm's debt and equity financing. It measures number of times of equity consisting the debt capital.

$$\text{Debt-to-Equity (D/E Ratio)} = \frac{\text{Total Debt}}{\text{Total Equity}}$$

Turnover Ratio

Turnover ratio measures the efficiency with which a bank uses its assets to generate profits. This ratio gives the answer of question of how effectively the bank is utilizing its available assets to generate income.

1. **Total assets turnover ratio:** - the final asset management ratio, the total assets turnover ratio, measure this turnover of all of the firm's assets. It is calculated by dividing sales by total assets.

Formula:

$$\begin{aligned} \text{Assets Turnover Ratio (ATR)} &= \frac{\text{Operating Income}}{\text{Total Assets}} \\ &= \frac{\text{Interest Income} + \text{Non Interest Income}}{\text{Total Assets}} \end{aligned}$$

2. **Fixed assets turnover ratio**: - this ratio measures how effectively the firm uses its plant and equipment to help generate sales. It is the ratio of sales/incomes to net fixed assets.

Fixed assets turnover ratio is calculated by dividing Sales by Net Fixed assets.

Formula:

$$\text{Fixed assets turnover ratio} \times \frac{\text{Sales}}{\text{Total fixed assets}}$$

Profitability Ratios

Managing Bank Profitability:

Managing Bank's Profitability: - The profitability is one important aspect of commercial bank. The combination of a bank's assets and liability structure along with its effective operation determines the ultimate profitability of a bank. The profitability of commercial bank can be measure quantitative in relation to the analysis of three important financial ratios- the leverage ratio, the turnover ratio, and the profitability ratio.

This ratio can view into two different ways – measuring profitability in relation to operating income and measuring profitability in relation to investment.

➤ **Profitability in Relation to Operating Income:**

Profit Margin

$$\text{Profit Margin} = \frac{\text{Net Income}}{\text{Operating Income or Revenue}}$$

Gross Profit Margin: The gross profit margin looks at cost of goods sold as a percentage of sales. This ratio looks at how well a firm controls the cost of its inventory and the manufacturing of its products and subsequently passes on the

costs to its customers. The larger the gross profit margin, the better for the company. The calculation is: **Gross Profit/Net Sales×100**. Both terms of the equation come from the bank's income statement.

Gross Profit Margin = Gross Profit/Revenues

➤ **Profitability in Relation to Investment:**

) **Net Interest Margin**

Net interest margin is a performance metric that examines how successful a firm's investment decisions are compared to its debt situations. A negative value denotes that the firm did not make an optimal decision, because interest expenses were greater than the amount of returns generated by investments.

Calculated as:

$$\begin{aligned} \text{Net Interest Margin} &= \frac{\text{Net Interest Income}}{\text{Interest Earning Assets}} \\ &= \frac{\text{Interest Income} - \text{Interest Expense}}{\text{Securities Investment} \Gamma \text{ Loans}} \end{aligned}$$

) **Net Non-Interest Margin**

This is the relationship in between the income from Net non-interest income and interest earning assets, income from service charges of bank is known as non-interest income.

Calculated as:

$$\begin{aligned} \text{Net Non Interest Margin} &= \frac{\text{Net Non Interest Income}}{\text{Interest Earning Assets}} \\ &= \frac{\text{Non - Interest Income} - \text{Non - Interest Expense}}{\text{Securities Investment} \Gamma \text{ Loans}} \end{aligned}$$

) **Interest Rate Spread**

An interest rate spread specifically refers to the difference in interest rates, also called yield, of two related rates. The differences reflected in an interest rate spread can be based on fluctuations in currencies, perceptions of risk and inflation expectations, among other factors.

$$\text{Spread} = \frac{\text{Interest Income}}{\text{Interest - Earning Assets}} - \frac{\text{Interest Expenses}}{\text{Interest - Paying Liabilities}}$$

) **Return on Assets (ROA)**

Return on assets ratio measures the net income that the bank is able to generate from total assets investment. This ratio is an indicator of managerial efficiency to measure whether a bank manager is able to convert the bank's assets into net earning or not.

ROA show the profitability of Bank's Assets, and EM show about leverage of bank.

$$\text{ROA} = \frac{\text{Net Income (NI)}}{\text{Total Assets (TA)}}$$

) **Return on Equity (ROE)**

In this analysis Equity covers to the amount contributed by the owner's side. The equity capital consists: preferred stock, common stock, additional paid-in-capital (Surplus), retained earnings.

$$\text{ROE} = \frac{\text{Net Income (NI)}}{\text{Average Equity (AE)}}$$

Where,

ROE = Return on Equity

NI = Net Income

AE = Average Equity

J **Personal-Mortgage Lending's (PML) return**

PML includes such amount of studied bank which has been lent to individual borrowers. They have taken it for their personal use like for study, business, vehicle purchase, residential house purchase etc. It is the calculation of all incomes from that money which has lent to individual borrowers on the basis of their properties and income. Normally individuals take loan from banks for the study, to run their own business, to purchase house and car, to get marry. It generates interest and service charges for banks as their income.

Formula:

$$\begin{aligned}\text{Return on PML} &= \frac{\text{Income from PML}}{\text{Personal - Mortgage Loan}} \\ &= \frac{\text{Service Charge } \Gamma \text{ Interest}}{\text{Personal - Mortgage Loan}}\end{aligned}$$

Risk Ratios

Risk taking is the prime dealing of each business organization like banks, mfg. co etc. Risk means uncertainty, which lies in the transaction of investment management of banks or others. These ratios indicate about the amount of risk associated with the various banking operations, which ultimately influences the bank investment policy.

The following ratios are calculated to measure the level of risk associated with banks daily operation.

Types of Risk

1. Credit Risk
2. Liquidity Risk

1. Credit Risk Ratio

) 'Total Loan and Advance' to Total Assets

Credit risk ratio helps to ensure the possibility of loan non-repayment or the possibility of loan to go into default. This ratio is calculated by dividing the Total Loan and Advances by Total Assets of the organization.

Formula

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

) 'Personal-Mortgage Loan' to Total Assets Ratio

This ratio indicates the relationship of 'personal lending on basis of mortgage' to total assets.

Formula

$$\text{Personal-Mortgage Loan to Total Assets ratio} = \frac{\text{Personal-Mortgage Loan}}{\text{Total Assets}}$$

) Personal-Mortgage Loan to Total Deposit Ratio: - this is the ratio in between loan amount invested out from total deposits to borrowers for short term or long term. This implies the utilization of firm's fixed deposits of on lending to consumers.

Formula:

$$\text{Personal - Mortgage to Total Fixed Deposit} = \frac{\text{Personal - mortgage Loan}}{\text{Total Fixed Deposits}}$$

) Personal-Mortgage Loan to Fixed Deposit Ratio: - this is the ratio in between loan amount invested out of fixed deposits to borrowers for short term or long term. This implies the utilization of firm's fixed deposits of on lending to consumers.

Formula:

$$\text{Personal - Mortgage to Total Fixed Deposit X} \frac{\text{Personal - mortgage Loan}}{\text{Total Fixed Deposits}}$$

) **Personal-Mortgage Loan to Saving Deposit Ratio:** - this is the ratio in between loan amount invested out of saving deposits to borrowers for short term or long term. This implies the utilization of firm's saving deposits of on lending to consumers.

Formula:

$$\text{Personal - mortgage to total Saving Deposit X} \frac{\text{Personal - mortgage Loan}}{\text{Total Saving Deposits}}$$

2. Liquidity Risk Ratio

Liquidity risk ratio measures the level of risk related with the liquidity assets i.e. Cash and Bank balance that are in the bank for the purpose of satisfying the depositors' demand for cash. Higher ratio expresses about the lower liquidity risk, which is calculated in this way;

Formula

$$\text{Liquidity Risk Ratio} = \frac{\text{Total Cash and Bank Balance}}{\text{Total Deposit}}$$

3.4.2 Statistical Tools used

Some important statistical tools, in this study, have been used to analyze and interpret the personal and mortgage lending of concern banks. Similarly, statistical tools help us to find out the trends of financial position of the concerned firms, and to analyze about the relationship between variables which helps to the firms/banks to make appropriate investment policy regarding to profit maximization and deposit collection, fund utilization through providing loan & advances. Some statistical tools which are used in this study are as follows;

1. **Co-efficient of correlation** : The correlation coefficient determines the relationship between two properties. This analysis identifies and interprets the

relationship between the two or more variables. In the case of highly correlated variables, the effect on one variable may have effect on other correlated variable. When two elements have zero correlation with each other they are unrelated on anyway and have zero variance. Positive correlation implies positive covariance. Karl-person's coefficient of correlation has been used to find out the relationship between the following variables:

- a. Co-efficient of correlation between deposit and Total Loan & Advance
- b. Co-efficient of correlation between deposit and Personal-mortgage lending.
- c. Co-efficient of correlation between total outside assets and net profit

2. **Trend Analysis:** this topic analyzes about the trend of deposit, personal mortgage loan and net profit of NABIL, EBL and HBL and makes the forecast for the next five years. Under this we can get following sub-topic as follows;

- a. Trend analysis of total deposit
- b. Trend analysis of total personal-mortgage loan
- c. Trend analysis of net profit.

6) **Test of Hypothesis:** Testing of hypothesis is one of the most important aspects of decision making. It consists of decision rules required for drawing probabilistic inferences about the population parameters. It often involves deciding at any given point of time whether a given population parameter is the same as before, as claimed or has changed. (Sharma and Chaudhary : 2064 : 229)

The objective of this test is to test significance regarding the parameters of the population on the basis of sample drawn from the population. This test has been conducted on the ratio Personal-Mortgage Lending to Total Deposit of sampled banks.

CHAPTER – IV

DATA PRESENTATION AND ANALYSIS

4.1 Introduction

The valuation "report" is one of the most important parts of the evaluation. It is the official record of the assessment. For many people it is the *only* part of the evaluation that is seen. But a good evaluation "report" answers some or all of the evaluation questions.

This chapter includes data collection from various sources and which are presented and analyzed to measure the various dimensions of the study and the major findings of the study are presented systematically. The word *data* refers to a collection of observations, experience, results of experiments, set of premises or happenings over a given period of time.

Effective presentation of useful findings is the ultimate goal of formative and summative evaluation. To this end quantitative, statistical analysis of numeric data as well as interpretive analysis of qualitative data, and we maintain cutting edge software and computing facilities to support these activities. All these sources of information are integrated into carefully prepared reports on program, including executive summaries, detailed interpretive discussions, and concise Figures, graphs, tables, and other graphic displays of important findings.

Often, policy makers must make decisions critical to the continued funding of important programs based on relatively brief reviews of program information. For this reason, accurate and engaging presentation of these findings is of great concern to program managers and policy makers alike. This study has been conducted to providing accurate, independent analysis that is technically sound but produced primarily for a non-technical audience. I am also happy to supply reports that include complete documentation of technical details.

4.2 Data Analysis & Presentation on the basis of Financial Tools:

4.2.1 Leverage Ratio:

Leverage ratio reveals the extent to which a bank relies on debt. Any bank with higher leverage ratio indicates a more riskiness in its position. It is because the interest payment on debt is fixed but the earning of the bank fluctuates. (Manohar and Rejesh: 2009: 45/46)

) Debt-to-assets (D/A) ratio

This ratio shows the portion of assets that the bank finances with debt. Lower debt to asset ratio means that the bank has used lesser debt amount and more equity to finance its assets.

Formula:

$$\text{Debt-to-Assets Ratio (D/A Ratio)} = \frac{\text{Total Debt}}{\text{Total Assets}}$$

Table No. – 4.1

Debt to Assets Ratios

(Rs. in million)

Year	NABIL			EBL			HBL		
	TD	TA	Debt Ratio	TD	TA	Debt Ratio	TD	TA	Debt Ratio
2004/05	11548.68	17186.33	0.67	9232.93	11732.52	0.79	19688.86	27844.69	0.71
2005/06	16356.82	22329.97	0.73	12780.67	15959.28	0.80	21479.29	29460.39	0.73
2006/07	20466.75	27253.39	0.75	16556.19	21432.57	0.77	24083.81	33519.14	0.72
2007/08	27787.49	37132.76	0.75	21460.12	27149.34	0.79	27356.56	36175.53	0.76
2008/09	33350.69	43867.40	0.76	28738.32	36916.85	0.78	31411.46	39320.32	0.80
		Mean	0.73		Mean	0.79		Mean	0.74

(Source: Annual Report of NABIL, EBL and HBL)

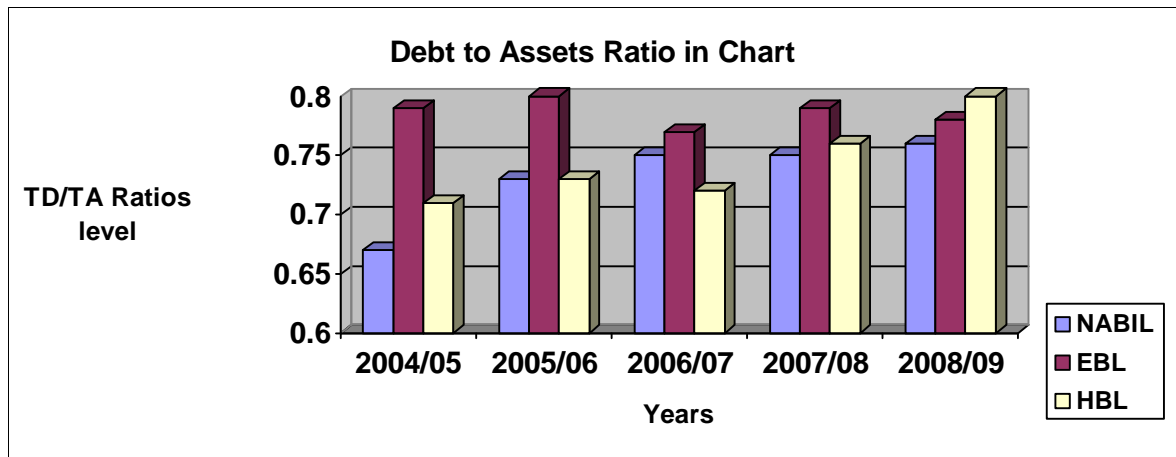
In the above table; TD means Total Debt and TA means total assets.

- The D/A Ratio of NABIL bank is 0.67 in 2004/05, 0.73 in 2005/06, 0.75 in 2006/07 and 2007/08, and its 0.76 in 2008/09.
- The D/A Ratio of EBL is 0.79 in 2004/05, 0.80 in 2005/06, 0.77 in 2006/07, 0.79 in 2007/08 and its 0.78 in 2008/09.

- The D/A Ratio of HBL is 0.71 in 2004/05, 0.73 in 2005/06, 0.72 in 2006/07, 0.76 in 2007/08 and its 0.80 in 2008/09.

Figure no. – 4.1

Comparison of Debt to Assets Ratios between NABIL, EBL and HBL



- From the above calculation, it has been found that the EBL had been operating being more dependants on debt amount than NABIL and HBL in 2004/05 to 2007/08, but it in 2008/09 EBL decreased its dependency upon the debt than previous year but HBL increased it more than previous year.
- The trend of using fund from debt is in increasing trend in NABIL and HBL, whereas in EBL is in decreasing trend. As a result HBL has used it upto 80% total liabilities. However EBL has decreased the debt using ratio, but still it is high.
- To be higher Debt ratio is more risky for shareholders, because it's sure to give interest to lenders but it is not sure to receive interest from borrowers.

) Debt-to-equity (D/E) ratio

This ratio shows the relationship between the firm's debt and equity financing. It measures number of times of equity consisting the debt capital.

Formula:

$$\text{Debt-to-Equity (D/E Ratio)} = \frac{\text{Total Debt}}{\text{Total Equity}}$$

Table No. – 4.2

Debt to Equity Ratios

(Rs. in million)

Year	NABIL			EBL			HBL		
	TD	TE	Equity Ratio	TD	TE	Equity Ratio	TD	TE	Equity Ratio
2004/05	11548.68	1657.64	6.97	9232.93	832.62	11.09	19688.86	1541.75	12.77
2005/06	16356.82	1874.99	8.72	12780.67	962.81	13.27	21479.29	1766.18	12.16
2006/07	20466.75	2057.05	9.95	16556.19	1201.52	13.78	24083.81	2146.50	11.22
2007/08	27787.49	2437.18	11.40	21460.12	1921.24	11.17	27356.56	2512.99	10.89
2008/09	33350.69	3130.24	10.65	28738.32	2203.63	13.04	31411.46	3119.88	10.07
		Mean	9.54		Mean	12.47		Mean	11.42

(Source: Annual Report of NABIL, EBL and HBL)

In the above calculation;

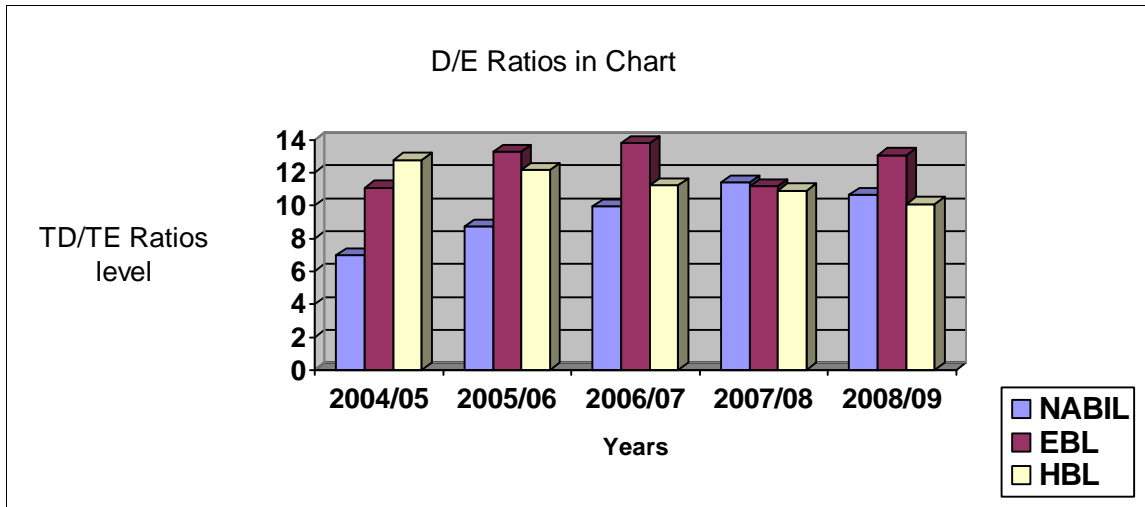
TE = Total Equity

TD = Total Debt of Banks

- These ratios are presented in times form, and as above described this ratio says about the outside liabilities from owners' total fund. And, it expresses the same information as the D/A ratios.
- NABIL bank has 6.97×, 8.72×, 9.95×, 11.40× and 10.65×; D/E Ratios in the year 2004, 05, 06, 07, 08 and 09. Likewise EBL has 11.09×, 13.27×, 13.78×, 11.17× and 13.04×; and HBL has 12.77×, 12.16×, 11.22×, 10.89× and 10.07× in the same studied years.

Figure no. – 4.2

Comparison of Debt Equity Ratio between NABIL, EBL and HBL



- In the above calculation NABIL has increasing trend of D/E ratio in between 2004/05 to 2007/08, but it has slightly decreased in 2008/09. Likewise, EBL has fluctuated trend, whereas the D/E ratio of HBL is in decreasing trend. So according to the trend of 2004/05 to 2008/09 we can assume that the NABIL bank is slowly going to be risky, but comparing with EBL and HBL, on the basis of percentage, NABIL is safe.

) Equity Multiplier (EM)

EM use to measure the value of assets funded with every rupee of equity capital. It says about how many times of equity is the total asset of the bank. Higher values of equity multiplier indicate that the bank is using the more debt/leverage capital.

$$EM = \frac{\text{Total Assets(TA)}}{\text{Total Equity (TE)}}$$

Table No. – 4.3

Calculation of EM of NABIL, EBL and HBL

(Rs. in million)

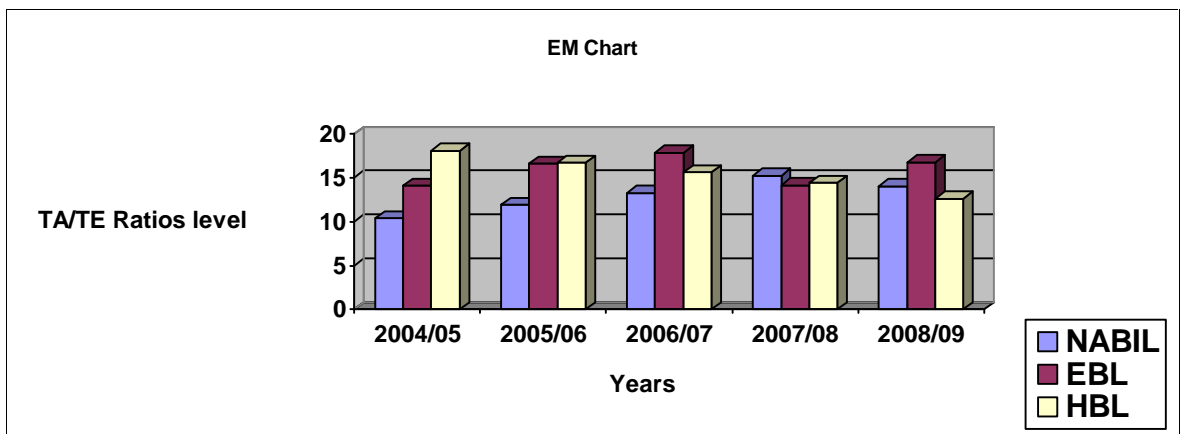
Year	NABIL			EBL			HBL		
	TA	TE	EM	TA	TE	EM	TA	TE	EM
2004/05	17186.33	1657.64	10.37	11732.52	832.62	14.0911	27844.69	1541.75	18.06
2005/06	22329.97	1874.99	11.91	15959.28	962.81	16.5758	29460.39	1766.18	16.68
2006/07	27253.39	2057.05	13.25	21432.57	1201.52	17.838	33519.14	2146.50	15.62
2007/08	37132.76	2437.18	15.24	27149.34	1921.24	14.1312	36175.53	2512.99	14.40
2008/09	43867.40	3130.241	14.01	36916.85	2203.63	16.7528	39320.32	3119.88	12.60
		Mean	12.96		Mean	15.88		Mean	15.47

(Source: Annual Report of NABIL, EBL and HBL)

- From the above table we can find out that the NABIL has increased the percentage of using debt capital instead of equity each year upto 2007/08, and slightly decreased in 2008/09. EBL also has increasing trend to utilize the debt capital. But HBL has decreased the utilization of debt capital.

Figure no. – 4.3

Comparison of Equity Multiplier (EM) between NABIL, EBL and HBL



- In the comparative analysis; the EM of NABIL is low in the comparison of EBL and HBL in 2004/05 to 2006/07 but in increasing trend.
- EBL has increasing-decreasing or fluctuating EM, but in final year 2008/09 it has increased the use of debt capital than NABIL and HBL.

4.2.2 Turnover Ratio

Turnover ratio measures the efficiency with which a bank uses its assets to generate profits. This ratio gives the answer of question of how effectively the bank is utilizing its available assets to generate income.

1. **Total assets turnover ratio:** - Asset turnover measures a firm's efficiency at using its assets in generating sales or revenue - the higher the number the better. the final asset management ratio, the total assets turnover ratio, measure this turnover of all of the firm's assets. It is calculated by dividing sales by total assets.

Formula:

$$\begin{aligned} \text{Assets Turnover Ratio (ATR)} &= \frac{\text{Operating Income (OI)}}{\text{Total Assets (TA)}} \\ &= \frac{\text{Interest Income} \Gamma \text{ Non Interest Income}}{\text{Total Assets}} \end{aligned}$$

Table No. – 4.4

Assets Turnover Ratios (ATR)

(Rs. in million)

Year	NABIL			EBL			HBL		
	OI	TA	ATR	OI	TA	ATR	OI	TA	ATR
2004/05	796.42	17186.33	0.05	277.83	11732.52	0.02	451.80	27844.69	0.02
2005/06	953.27	22329.97	0.04	377.20	15959.28	0.02	684.09	29460.39	0.02
2006/07	1037.61	27253.39	0.04	487.97	21432.57	0.02	688.89	33519.14	0.02
2007/08	1670.43	37132.76	0.04	718.83	27149.34	0.03	954.95	36175.53	0.03
2008/09	2220.98	43867.40	0.05	972.95	36916.85	0.03	1159.95	39320.32	0.03
		Mean	0.04		Mean	0.02		Mean	0.02

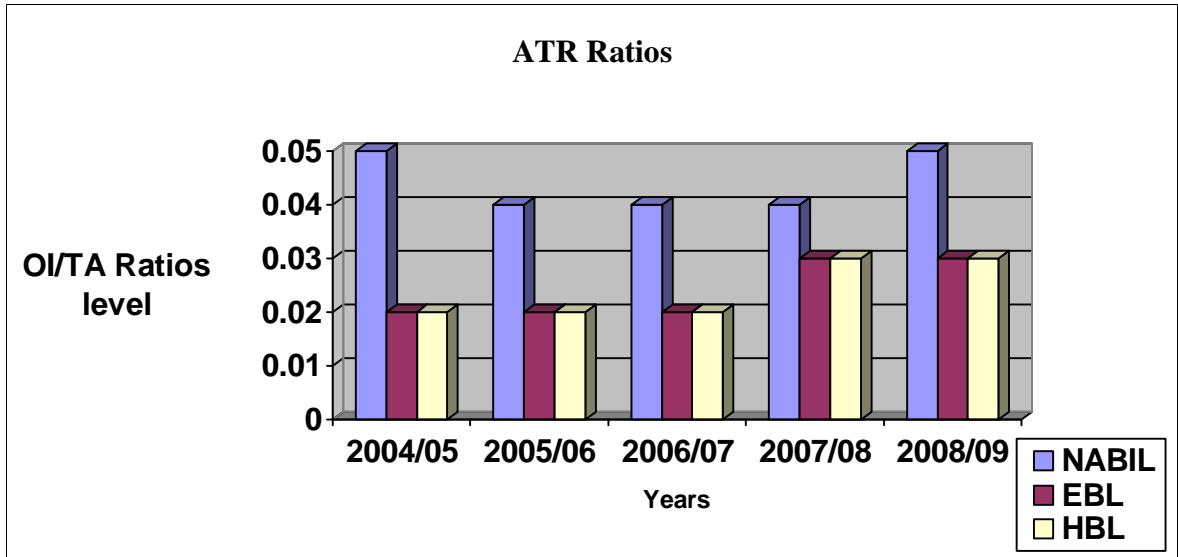
(Source: Annual Report of NABIL, EBL and HBL)

- ATR of NABIL bank is 0.05 in 2004/05, 0.04 in 2005/06 to 2007/08, and again its 0.05 in 2008/09.
- ATR of EBL in 2004/05 to 2006/07 is 0.02 and 0.03 is in 2007/08 to 2008/09.

- ATR of HBL in 2004/05 to 2006/07 is 0.02 and 0.03 is in 2007/08 to 2008/09.

Figure no. – 4.4

Comparison of ATR in between NABIL, EBL and HBL



- The assets turnover ratio (ATR) of NABIL bank is higher than the EBL and HBL i.e 4%, 5% whereas EBL and HBL has 2% and 3%.
- ATR of EBL and HBL is equal in all years i.e. 2% in 2004/05 to 2006/07 and 3% in 2007/08 and 2008/09.
- It shows that the NABIL bank has utilized its assets more properly than the EBL and HBL.

2. **Fixed assets turnover ratio:** - this ratio measures how effectively the firm uses its fixed assets to help generate incomes. It is the ratio of sales/ incomes to net fixed assets.

Fixed assets turnover ratio is calculated by dividing Sales by Net Fixed assets.

Formula:

$$\text{Fixed assets turnover ratio (FATR)} \times \frac{\text{Sales}}{\text{Total fixed assets}}$$

Table No. – 4.5

Fixed Assets Turnover (FAT) Ratios

(Rs. in million)

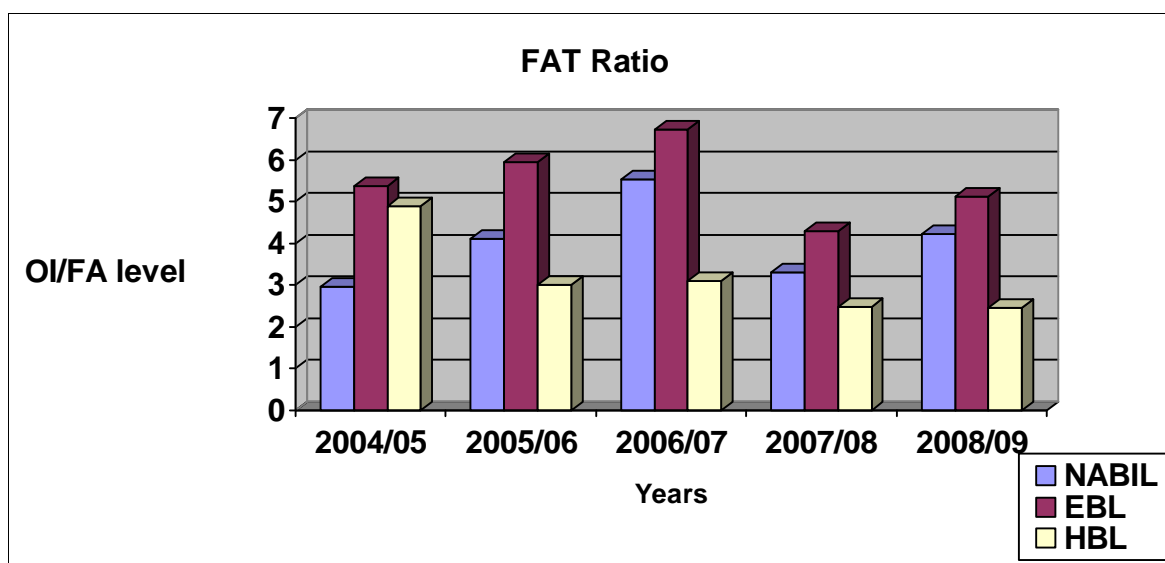
Year	NABIL			EBL			HBL		
	Sales	TFA	FAT ratio	Sales	TFA	FAT ratio	Sales	TFA	FAT ratio
2004/05	1068.75	361.24	2.96	719.30	134.07	5.37	1446.47	295.82	4.89
2005/06	1310.00	319.09	4.11	903.41	152.09	5.94	1626.47	540.82	3.01
2006/07	1587.76	286.90	5.53	1144.41	170.10	6.73	1775.58	574.06	3.09
2007/08	1978.70	598.04	3.31	1548.66	360.51	4.30	1963.65	795.31	2.47
2008/09	2798.49	660.99	4.23	2186.81	427.16	5.12	2342.20	952.20	2.46
		Mean	4.03		Mean	5.49		Mean	3.18

(Source: Annual Report of NABIL, EBL and HBL)

- FAT ratio of NABIL is 2.96 in 2004/05, 4.11 in 2005/06, 5.53 in 2006/07, 3.31 in 2007/08 and 4.23 in 2008/09.
- FAT ratio of EBL is 5.37 in 2004/05, 5.94 in 2005/06, 6.73 in 2006/07, 4.30 in 2007/08 and 5.12 in 2008/09.
- FAT ratio of HBL is 4.89 in 2004/05, 3.01 in 2005/06, 3.09 in 2006/07, 2.47 in 2007/08 and 2.46 in 2008/09.

Figure no. – 4.5

Comparison of Fixed Assets Turnover (FAT) Ratios



- In the term of utilization of fixed assets EBL has used its FA more properly than NABIL and HBL, which ratio is in the range of 5% to 6% whereas NABIL has used its FA in the range of 2% to 4%, and HBL has the in the range of 2% to 3%.
- In the form of FATR; EBL is in highest position, NABIL is in second position and HBL in last position among the studied concerned banks.

4.2.3 Profitability Ratios

This ratio can view into two different ways – measuring profitability in relation to operating income and measuring profitability in relation to investment.

➤ Profitability in Relation to Operating Income:

Profit Margin

$$\text{Profit Margin (PM)} = \frac{\text{Net Income (NI)}}{\text{Operating Income or Revenue}}$$

Table No. – 4.6

Profit Margin (PM)

(Rs. in million)

Year	NABIL			EBL			HBL		
	NI	OI	PM	NI	OI	PM	NI	OI	PM
2004/05	520.11	1068.75	0.49	168.21	719.30	0.23	308.28	1446.47	0.21
2005/06	635.26	1310.00	0.48	237.29	903.41	0.26	457.46	1626.47	0.28
2006/07	673.96	1587.76	0.42	296.41	1144.41	0.26	491.82	1775.58	0.28
2007/08	746.47	1978.70	0.38	451.22	1548.66	0.29	635.87	1963.65	0.32
2008/09	1031.05	2798.49	0.37	638.73	2186.81	0.29	752.83	2342.20	0.32
		Mean	0.43		Mean	0.27		Mean	0.28

Source: Annual Report of NABIL, EBL and HBL)

Where,

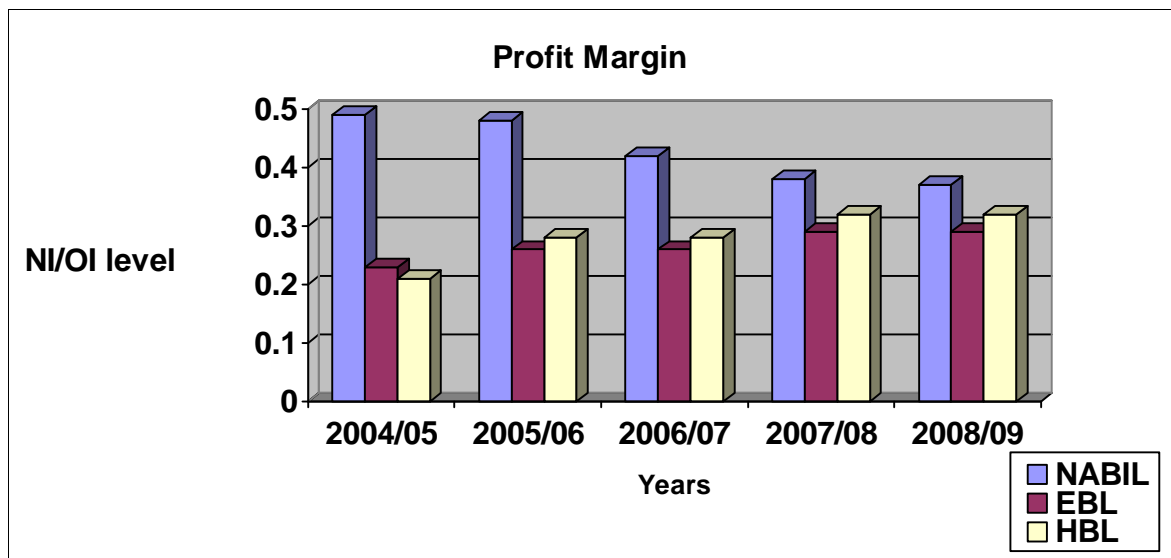
NI = Net Income or Net Profit

OI = Operating Income

- PM of NABIL bank is 0.49 in 2004/05, 0.48 in 2005/06, 0.42 in 2006/07, 0.38 in 2007/08 and 0.37 in 2008/09.
- PM of EBL is 0.23 in 2004/05, 0.26 in 2005/06, 0.26 in 2006/07, 0.29 in 2007/08 and 0.29 in 2008/09.
- PM of HBL is 0.21 in 2004/05, 0.28 in 2005/06, 0.28 in 2006/07, 0.32 in 2007/08 and 0.32 in 2008/09.

Figure no. – 4.6

Comparison of Profit Margin (PM) in between NABIL, EBL and HBL



- Above study and Figure shows that the NABIL bank has controlled its expenses more than EBL and HBL in early years. But in recent NABIL has loosed its control over operating expenses.
- Comparing the PM of EBL and HBL, we can explain that EBL has less control over its operating expenses than HBL, and even than NABIL.

➤ **Profitability in Relation to Investment:**

) **Net Interest Margin**

Net interest margin is a performance metric that examines how successful a firm's investment decisions are compared to its debt situations. A negative value denotes that the firm did not make an optimal decision, because interest

expenses were greater than the amount of returns generated by investments.

Calculated as:

$$\text{Net Interest Margin} = \frac{\text{Net Interest Income (NII)}}{\text{Interest Earning Assets}}$$

$$= \frac{\text{Interest Income} - \text{Interest Expense}}{\text{Securities Investment (SI)} + \text{Loans (L)}}$$

Table No. – 4.7

Net Interest Margin (NIM)

(Rs. in million)

Year	NABIL			EBL			HBL		
	NII	SI + L	NIM	NII	SI + L	NIM	NII	SI + L	NIM
2004/05	825.20	14861.70	0.06	419.73	9747.60	0.04	884.50	24116.86	0.04
2005/06	952.84	19101.08	0.05	502.01	14001.82	0.04	977.63	25531.59	0.04
2006/07	1032.05	24491.09	0.04	627.24	18648.40	0.03	1008.17	29804.00	0.03
2007/08	1220.26	31304.82	0.04	916.05	23398.64	0.04	1139.90	32837.70	0.03
2008/09	1645.21	38416.31	0.04	1173.94	29833.15	0.04	1407.42	33503.85	0.04
		Mean	0.05		Mean	0.04		Mean	0.04

(Source: Annual Report of NABIL, EBL and HBL)

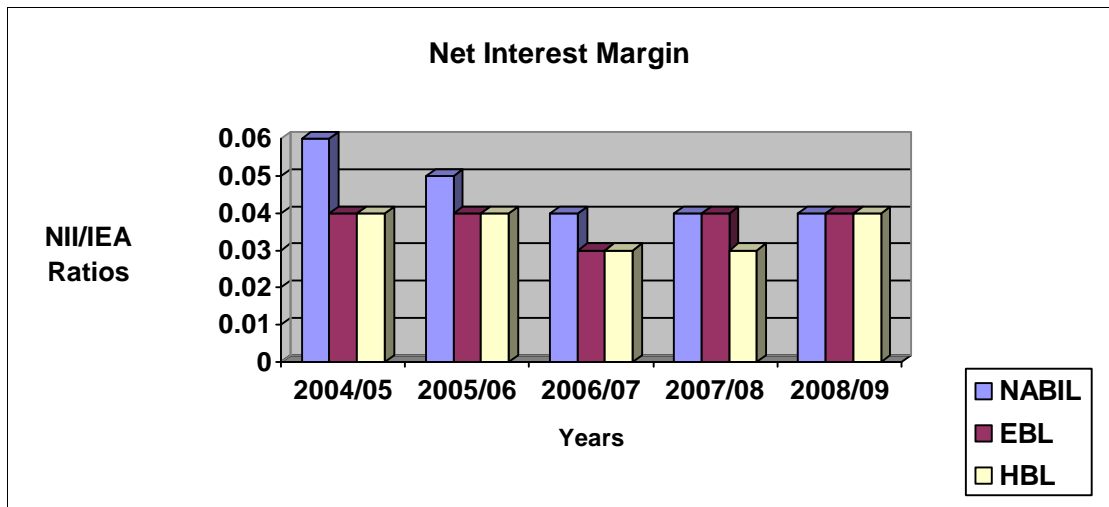
Where,

Net interest earning assets = Securities Investment (SI) + Loan (L) i.e. SI + L.

- NIM of NABIL is 6% in 2004/05, 5% in 2005/06, 4% in 2006/07, 4% in 2007/08 and 4% in 2008/09.
- NIM of EBL is 4% in 2004/05, 4% in 2005/06, 3% in 2006/07, 4% in 2007/08 and 4% in 2008/09.
- NIM of HBL is 4% in 2004/05, 4% in 2005/06, 3% in 2006/07, 3% in 2007/08 and 4% in 2008/09.

Figure no. – 4.7

Comparison of Net Interest Margin of NABIL, EBL and HBL



- NIM of NABIL seems comparatively high in 2004/05 to 2006/07 than EBL and HBL, whereas it's equal to EBL in 2007/08 and equal with EBL and HBL in 2008/09.
- NIM of EBL and HBL seems equal in 2004/05 to 2006/07, whereas EBL has high NIM in 2007/08 in the comparison of HBL, but in 2008/09 its equal with all other banks.

) **Net Non-Interest Margin**

This is the relationship in between the income from Net non-interest income and interest earning assets, income from service charges of bank is known as non-interest income.

Calculated as:

$$\text{Net Non Interest Margin (NNIM)} = \frac{\text{Net Non Interest Income}}{\text{Interest Earning Assets}}$$

$$= \frac{\text{Non - Interest Income} - \text{Non - Interest Expense}}{\text{Securities Investment} \Gamma \text{ Loans}}$$

Table No. – 4.8
Net Non Interest Margin

(Rs. in million)

Year	NABIL			EBL			HBL		
	NNII	IEA	NNIM	NNII	IEA	NNIM	NNII	IEA	NNIM
2004/05	410.80	14861.70	0.03	134.41	9747.60	0.01	314.21	24116.86	0.01
2005/06	433.48	19101.08	0.02	163.10	14001.82	0.01	414.89	25531.59	0.02
2006/07	494.12	24491.09	0.02	494.12	18648.40	0.03	72.79	29804.00	0.00
2007/08	514.24	31304.82	0.02	279.37	23398.64	0.01	414.68	32837.70	0.01
2008/09	621.49	38416.31	0.02	370.48	29833.15	0.01	574.46	33503.85	0.02
		Mean	0.02		Mean	0.02		Mean	0.01

(Source: Annual Report of NABIL, EBL and HBL)

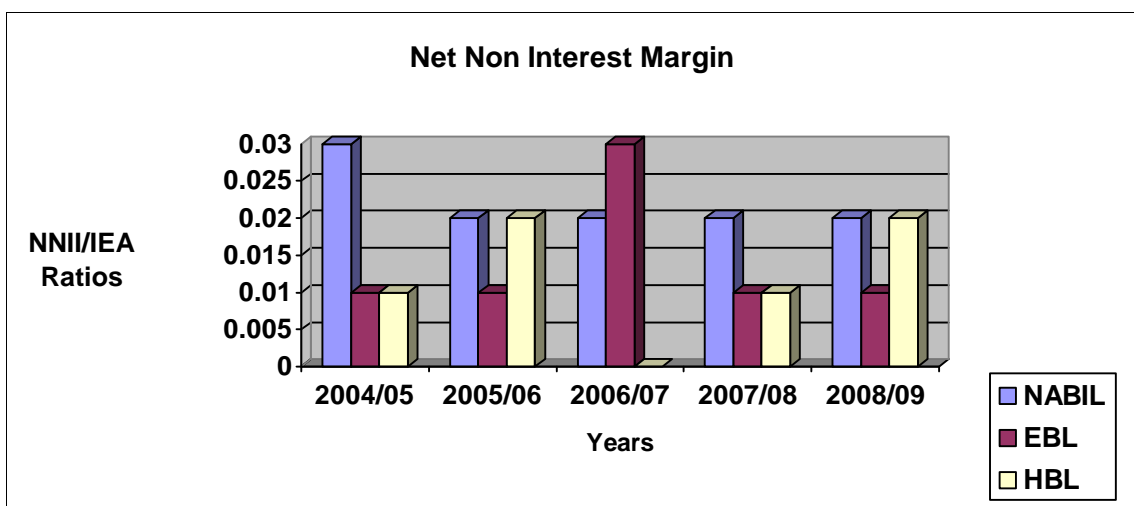
Where,

IEA = Interest Earning Assets, which includes Deposits in Banks / Financial Institutions, Investment and Loan, Advance & Bill Purchased

- NNIM of NABIL is 3% in 2004/05 and then its 2% in following years.
- NNIM of EBL is 1% in 2004/05, 2005/06, 2007/08 and 2008/09, whereas its 3% in 2006/07.
- NNIM of HBL is 1% in 2004/05 & 2007/08 whereas its 2% in 2005/06 & 2008/09, but it's nearly 0% in 2006/07 because of loss on extra ordinary activities.

Figure no. – 4.8

Comparison of NNIM of NABIL, EBL and HBL



- NABIL bank's 'Net Non Interest Margin is constant in the comparison of EBL and HBL.

- In 2004/05 NABIL has higher NNIM than others, and EBL has the same in 2006/07.
- EBL and HBL has equal NNIM in 2004/05 and 2007/08, whereas NABIL and HBL has equal in 2005/06 and 2008/09.

J Interest Rate Spread

An interest rate spread specifically refers to the difference in interest rates, also called yield, of two related rates. The differences reflected in an interest rate spread can be based on fluctuations in currencies, perceptions of risk and inflation expectations, among other factors (details in Appendix – II).

Formula:

Interest Rate Spread=

$$\frac{\text{Interest Income (II)}}{\text{Interest Earning Assets (IEA)}} - \frac{\text{Interest Expenses (IE)}}{\text{Interest Paying Liabilities (IPL)}}$$

Table No. – 4.9

Interest Rate Spread

(Rs. in million)

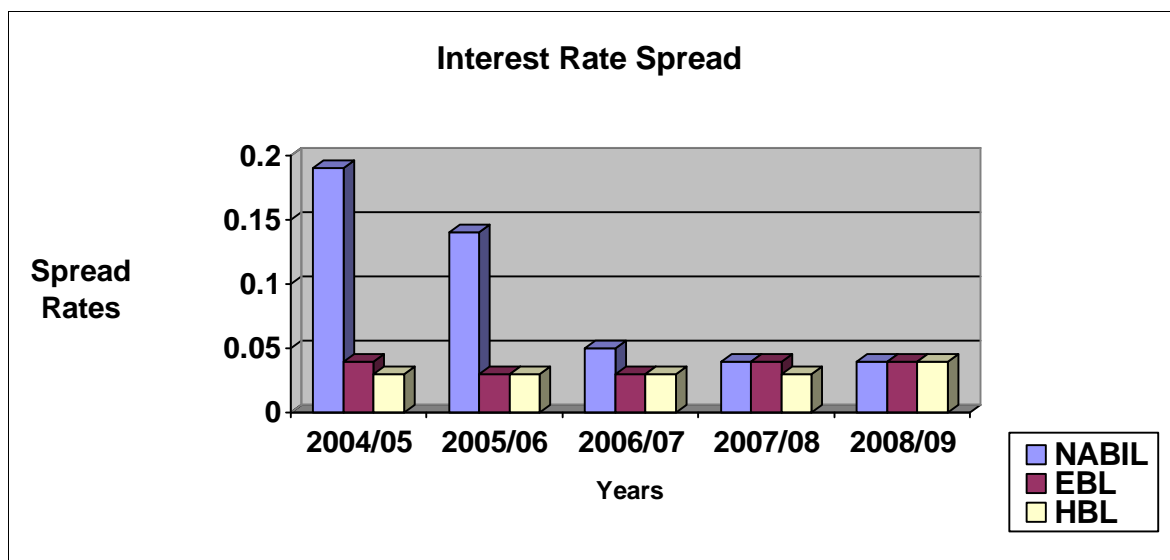
Year	NABIL					EBL				
	II	IEA	IE	IPL	Spread	II	IEA	IE	IPL	Spread
2004/05	1068.75	5143.96	243.544	11463.26	0.19	719.30	9747.60	299.57	9215.15	0.04
2005/06	1310.00	7913.43	357.161	16244.21	0.14	903.41	14001.82	401.40	12764.87	0.03
2006/07	1587.76	24507.09	555.71	43809.03	0.05	1144.41	18648.40	517.17	16529.41	0.03
2007/08	1978.70	31304.82	758.436	27787.49	0.04	1548.66	23398.64	632.61	21410.68	0.04
2008/09	2798.49	38416.31	1153.28	33350.69	0.04	2186.81	29833.15	1012.87	28738.32	0.04
				mean	0.09				mean	0.04
	HBL									
	II	IEA	IE	IPL	Spread					
2004/05	1446.47	24116.86	561.96	19688.86	0.03					
2005/06	1626.47	25531.59	648.84	21479.29	0.03					
2006/07	1775.58	29804.00	767.41	24679.78	0.03					
2007/08	1963.65	32837.70	823.74	27273.39	0.03					
2008/09	2342.20	33503.85	934.78	31297.95	0.04					
				mean	0.03					

(Source: Annual Report of NABIL, EBL and HBL)

- Interest rate spread of NABIL bank is 0.19 in 2004/05, 0.14 in 2005/06, 0.05 in 2006/07, 0.04 in 2007/08 and 0.04 in 2008/09.
- The spread of EBL is 0.04 in 2004/05, 0.03 in 2005/06, 0.03 in 2006/07, 0.04 in 2007/08 and 0.04 in 2008/09.
- The spread of HBL is 0.03 in 2004/05, 0.03 in 2005/06, 0.03 in 2006/07, 0.03 in 2007/08 and 0.04 in 2008/09.

Figure no. – 4.9

Comparison of Interest Rate Spread between NABIL, EBL and HBL



- In 2004/05 and 2005/06 the NABIL bank’s interest rate spread is very high than EBL and HBL because NABIL bank has not issued any bonds in these years but EBL and HBL has issued bonds of high amount.
- In 2006/07 EBL and HBL has the same spread, but still NABIL has high spread than others.
- In 2008/09 all those banks (NABIL, EBL and HBL) has same interest rate spread.

J) Return on Equity (ROE) Analysis

In this analysis Equity covers to the amount contributed by the owner's side. The equity capital consists: preferred stock, common stock, additional paid-in-capital (Surplus), retained earnings.

Formula:

$$\text{ROE} = \frac{\text{Net Income (NI)}}{\text{Average Equity (AE)}}$$

Table No.-4.10

Calculation of ROE of NABIL, EBL and HBL

(Rs. in million)

Year	NABIL			EBL			HBL		
	NI	AE	ROE	NI	AE	ROE	NI	AE	ROE
2004/05	520.11	1657.64	0.31	168.21	832.62	0.20	308.28	1541.75	0.20
2005/06	635.26	1874.99	0.34	237.29	962.81	0.25	457.46	1766.18	0.26
2006/07	673.96	2057.05	0.33	296.41	1201.52	0.25	491.82	2146.50	0.23
2007/08	746.47	2437.18	0.31	451.22	1921.24	0.23	635.87	2512.99	0.25
2008/09	1031.05	3130.241	0.33	638.73	2203.63	0.29	752.83	3119.88	0.24
		Mean	0.32		Mean	0.24		Mean	0.24

(Source: Annual Report of NABIL, EBL and HBL)

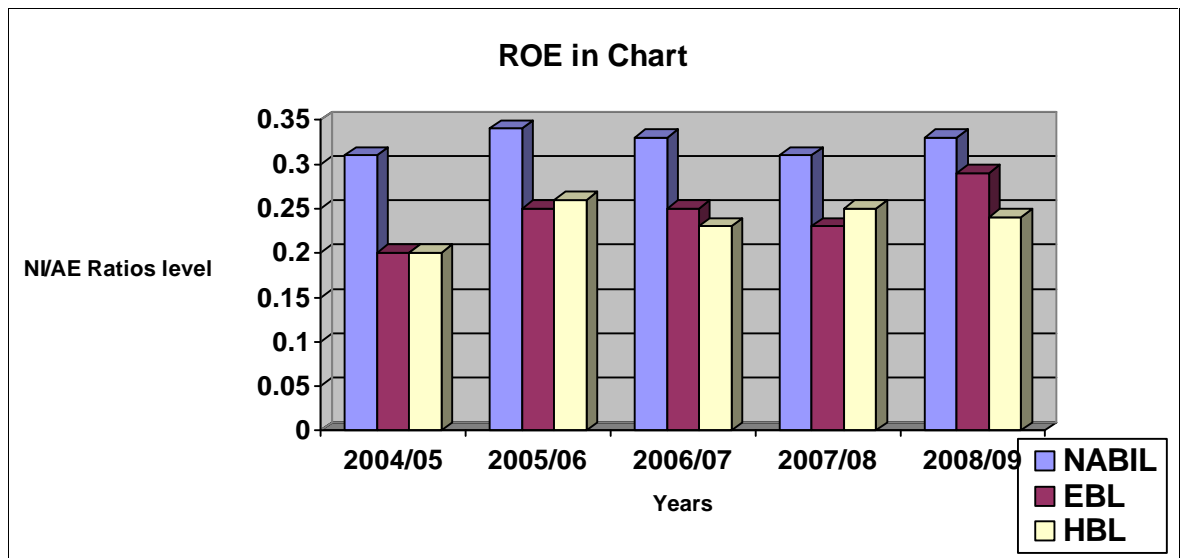
All the data has been put into Microsoft Excel to get result by easy calculation. Here, **NI** is the *Net Income* of studied banks which have been divided by **AE** i.e. *Average Equity* to find out the **ROE** i.e. *return on equity*.

- ROE of NABIL is 0.31 in 2004/05, 0.34 in 2005/06, 0.33 in 2006/07, 0.31 in 2007/08 and 0.33 in 2008/09.
- ROE of EBL is 0.20 in 2004/05, 0.25 in 2005/06, 0.25 in 2006/07, 0.23 in 2007/08 and 0.29 in 2008/09.

- ROE of HBL is 0.20 in 2004/05, 0.26 in 2005/06, 0.23 in 2006/07, 0.25 in 2007/08 and 0.24 in 2008/09.

Figure no. – 4.10

Comparison of ROE of NABIL, EBL and HBL



- In the comparative analysis of the NABIL, EBL and HBL bank limited about the ROE, we can get that the NABIL bank has high return on equity in all year among 2004/05 to 2008/09 in the comparison of EBL and HBL. About the ROE of EBL and HBL, their ROE also is in fluctuation trend means up & down.

- If we see the trend of ROE in different years, of a single bank, then the above table, about NABIL bank, exhibits up & down trend. In 2004/05 to 2005/06 it has increased, whether in 2006/07 and 2007/08 it has decreased, and at last in 2008/09 it has again increased.

J Return on Assets (ROA)

Return on assets ratio measures the net income that the bank is able to generate from total assets investment. This ratio is an indicator of managerial efficiency to measure whether a bank manager is able to convert the bank's assets into net earning or not.

ROA show the profitability of Bank's Assets, and EM show about leverage of bank.

Formula:

$$ROA = \frac{\text{Net Income(NI)}}{\text{Total Assets (TA)}}$$

Table No.- 4.11

Calculation of ROA of NABIL, EBL and HBL

(Rs. in million)

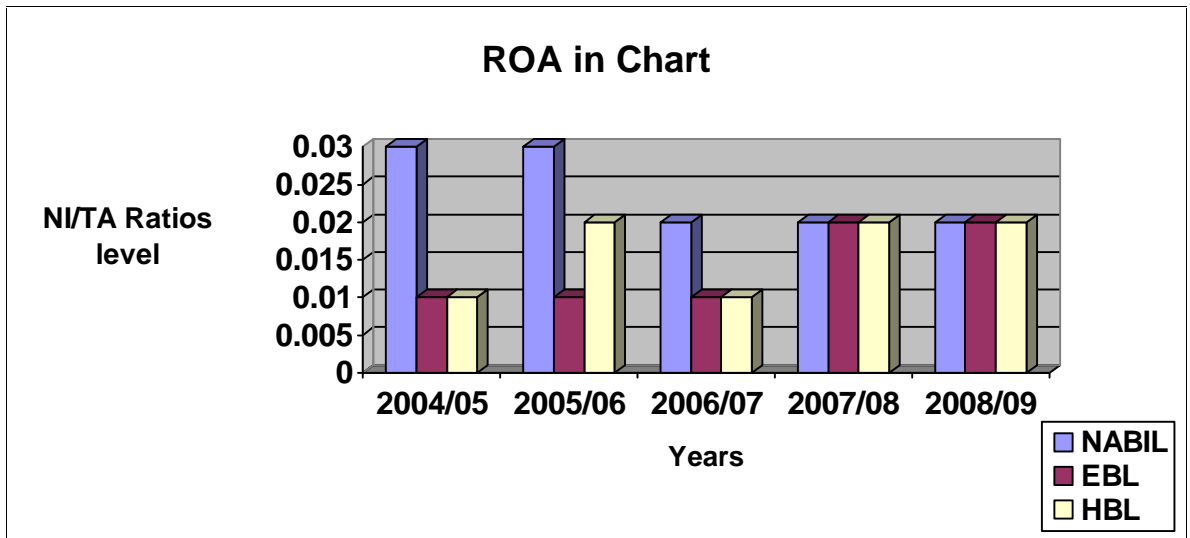
Year	NABIL			EBL			HBL		
	NI	TA	ROA	NI	TA	ROA	NI	TA	ROA
2004/05	520.11	17186.33	0.03	168.21	11732.52	0.01	308.28	27844.69	0.01
2005/06	635.26	22329.97	0.03	237.29	15959.28	0.01	457.46	29460.39	0.02
2006/07	673.96	27253.39	0.02	296.41	21432.57	0.01	491.82	33519.14	0.01
2007/08	746.47	37132.76	0.02	451.22	27149.34	0.02	635.87	36175.53	0.02
2008/09	1031.05	43867.40	0.02	638.73	36916.85	0.02	752.83	39320.32	0.02

(Source: Annual Report of NABIL, EBL and HBL)

- ROA of NABIL bank in 2004/05 to 2005/06 is 3%, whereas it is 2% in the following years.
- ROA of EBL is 1% in 2004/05 to 2006/07, which has increased to 2% in 2007/08 and 2008/09.
- ROA of HBL is 1% in 2004/05, 2% in 2005/06, 1% in 2006/07, and 2% in 2007/08 and 2008/09.

Figure no. – 4.11

Comparison of ROA of NABIL, EBL and HBL



From the above analysis we can find out that:

- The NABIL bank has the higher Return on assets of 0.03 in 2004/05 and 2005/06 in the comparison of EBL with 0.02 ROA and HBL with 0.02 ROA.
- In 2004/05 EBL and HBL has equal ROA, in 2005/06 HBL has higher ROA than EBL
- In 2006/07 NABIL bank has higher ROA than EBL and HBL, but EBL and HBL has equal again.
- In 2007/08 and 2008/09 all those three banks have equal ROA.

J Return on Personal-Mortgage Lending (PML)

It is the calculation of all incomes from that money which has lent to individual borrowers on the basis of their properties and income. It generates interest and service charges for banks as their income (details in Appendix – III).

Formula:

$$\text{Return on PML} = \frac{\text{Income from PML}}{\text{Personal - Mortgage Loan}}$$

$$= \frac{\text{Service Charge } \Gamma \text{ Interest}}{\text{Personal - Mortgage Loan}}$$

Table No.- 4.12

Calculation of IPML to PML ratio returns of NABIL, EBL and HBL

(Rs. in million)

Year	NABIL			EBL			HBL		
	IPML	PML	IPML/ PML	IPML	PML	IPML/P ML	IPML	PML	IPML/P ML
2004/05	94.65	1032.15	0.09	59.12	647.59	0.09	107.24	1118.21	0.10
2005/06	162.70	1599.81	0.10	109.52	1108.53	0.10	164.83	1565.29	0.11
2006/07	260.92	2445.35	0.11	207.36	2055.08	0.10	232.07	2158.75	0.11
2007/08	465.91	4266.60	0.11	286.22	3667.82	0.08	295.98	2942.18	0.10
2008/09	869.00	6996.81	0.12	681.71	6353.32	0.11	515.22	4445.41	0.12
		Mean	0.11		Mean	0.10		Mean	0.11

(Source: Annual Report of NABIL, EBL and HBL)

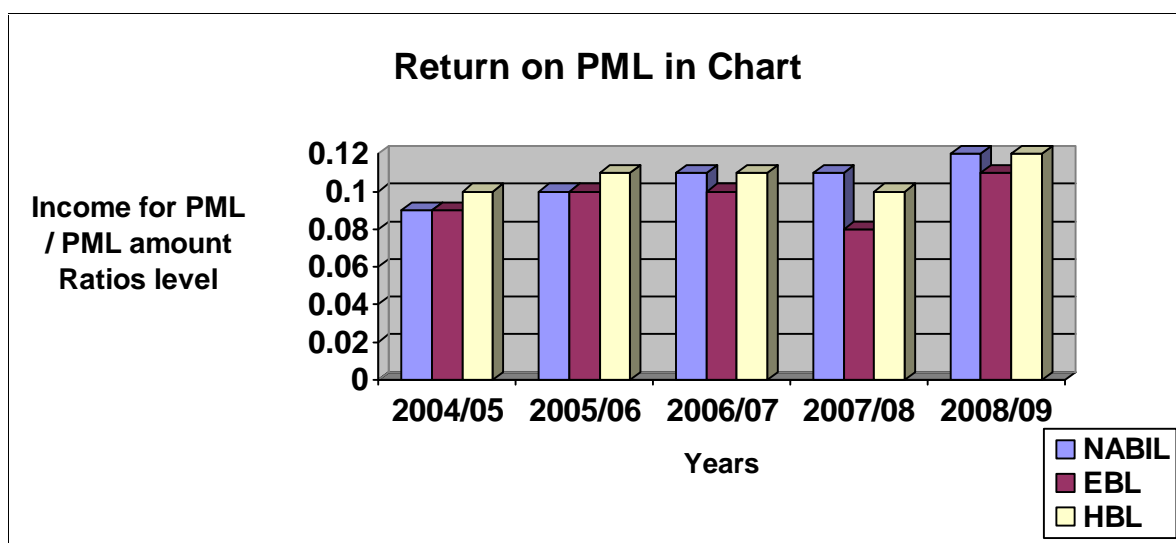
Where,

IPML = Income from Personal-Mortgage Lending

- IPML to PML of NABIL bank is 9% in 2004/05, 10% in 2005/06, 11% in 2006/07 and 2007/08, and 12% in 2008/09.
- IPML to PML of EBL is 9% in 2004/05, 10% in 2005/06 and 2006/07, 8% in 2007/08, and 11% in 2008/09.
- IPML to PML of HBL is 10% in 2004/05, 11% in 2005/06 and 2006/07, 10% in 2007/08, and 12% in 2008/09.

Figure no. – 4.12

Comparison of Return on PML of NABIL, EBL and HBL



- From the above table we can find out that the HBL has high return on its Personal-Mortgage lending than NABIL bank and EBL in 2004/05 and 2005/06, which is equal with NABIL bank in 2006/07 and 2008/09.
- In 2004/05 EBL and NABIL has equal ratio of return on their PML.
- NABIL bank has high return on its PML in 2007/08 than others two banks.

Table No.- 4.13

Calculation of PML contribution into Operating Income of NABIL, EBL and HBL

(Rs. in million)

Year	NABIL			EBL			HBL		
	IPML	OI	IPML/OI	IPML	OI	IPML/OI	IPML	OI	IPML/OI
2004/05	94.65	1068.75	0.09	59.12	719.30	0.08	59.20	1446.47	0.04
2005/06	162.70	1310.00	0.12	109.52	903.41	0.12	109.64	1626.47	0.07
2006/07	260.92	1587.76	0.16	207.36	1144.41	0.18	207.54	1775.58	0.12
2007/08	465.91	1978.70	0.24	386.22	1548.66	0.25	386.47	1963.65	0.20
2008/09	869.00	2798.49	0.31	681.71	2186.81	0.31	682.02	2342.20	0.29
		Mean	0.18		Mean	0.19		Mean	0.14

(Source: Annual Report of NABIL, EBL and HBL)

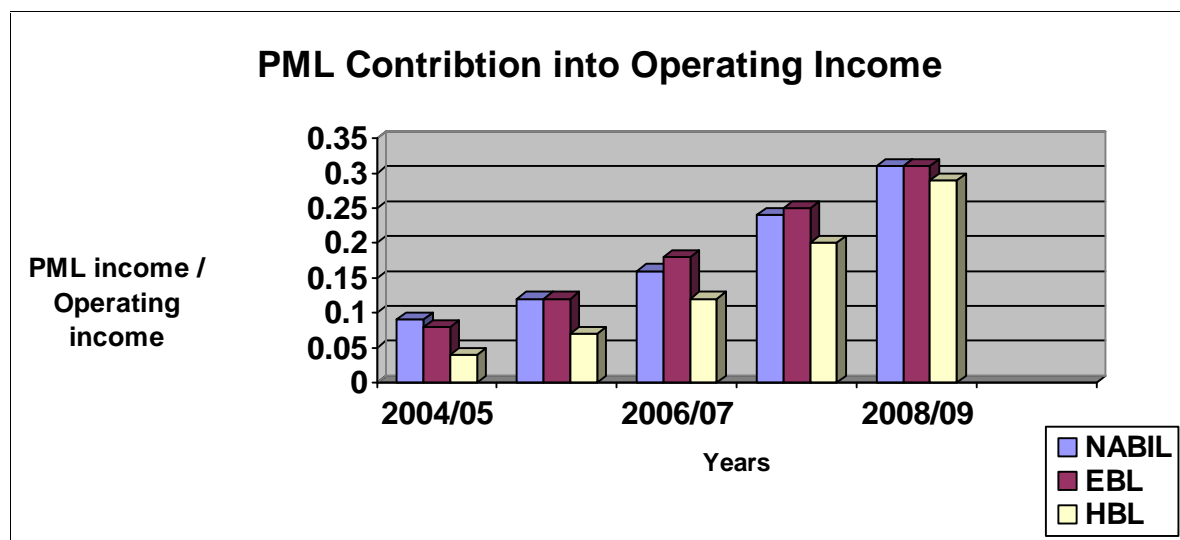
Where,

IPML = Income from Personal-Mortgage Lending

- IPML to PML of NABIL bank is 9% in 2004/05, 12% in 2005/06, 16% in 2006/07, 24% in 2007/08, and 31% in 2008/09
- IPML to PML of EBL is 8% in 2004/05, 12% in 2005/06, 18% in 2006/07, 25% in 2007/08, and 31% in 2008/09.
- Likewise, HBL's IPML to PML ratio is 4% in 2004/05, 7% in 2005/06, 12% in 2006/07, 20% in 2007/08, and 29% in 2008/09.

Figure no. – 4.13

Comparison of PML contribution into Operating Income of NABIL, EBL and HBL



- From the above table for comparative study we can find out that the PLU of NABIL bank has highly contributed in 2004/05 to its total operating income than EBL and HBL. But in 2005/06 NABIL and EBL has equal contribution to its total income; however it's higher than the HBL's contribution to its total income.

- The PLU of EBL has highly contributed to its total income in 2006/07 and 2007/08, but in 2008/09 its again equal with NABIL bank.

4.2.4 Risk Analysis

1. Credit Risk Ratio:

) Total Loan and Advances to Total Assets Ratio

Credit risk ratio helps to ensure the possibility of loan non-repayment or the possibility of loan to go into default. This ratio is calculated by dividing the Total Loan and Advances by Total Assets of the organization.

Formula:

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

Table No.- 4.14

CRR of NABIL, EBL and HBL

(Rs. in million)

Year	NABIL			EBL			HBL		
	TLA	TA	CRR	TLA	TA	CRR	TLA	TA	CRR
2004/05	10586.17	17064.08	0.62	7618.67	11732.52	0.65	12424.52	27844.69	0.45
2005/06	12922.54	22329.97	0.58	9801.31	15959.28	0.61	14642.56	29460.39	0.50
2006/07	15545.78	27253.39	0.57	13664.08	21432.57	0.64	16998.00	33519.14	0.51
2007/08	21365.05	37132.76	0.58	18339.09	27149.34	0.68	19497.52	36175.53	0.54
2008/09	27589.93	43867.40	0.63	23884.67	36916.85	0.65	24793.16	39320.32	0.63
		Mean	0.59		Mean	0.64		Mean	0.52

(Source: Annual Report of NABIL, EBL and HBL)

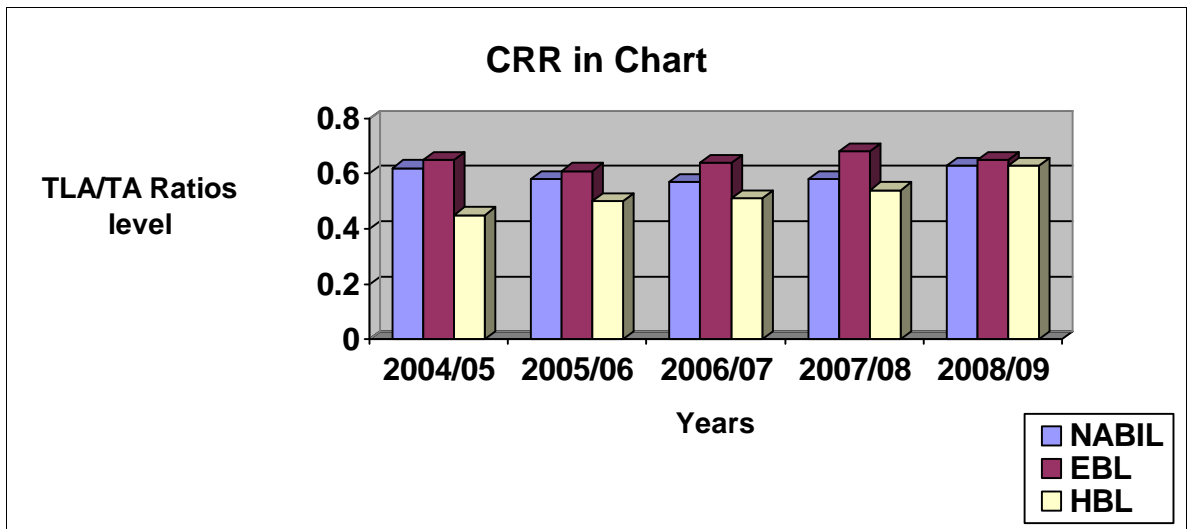
Where,

TLA = Total Loan and Advances

- CRR of NABIL is 0.62 in 2004/05, which is 0.58 in 2005/06 and 2007/08, whereas it is 0.57 in 2006/07 and 0.63 in 2008/09.
- CRR of EBL is 0.65 in 2004/05 and 2008/09, and it's 0.61 in 2005/06, 0.64 in 2006/07, and 0.68 in 2007/08.
- CRR of HBL is 0.45 in 2004/05, 0.50 in 2005/06, 0.51 in 2006/07, 0.54 in 2007/08 and 0.63 in 2008/09.

Figure no. – 4.14

Comparison of CRR of NABIL, EBL and HBL



- In the comparative study about the CRR; we can get high risk ratio of EBL in all studied years with the comparison of NABIL bank and HBL.
- In the comparison of NABIL bank and HBL; NABIL bank has the higher CRR than HBL

) **Personal-Mortgage lending (PML) to Total Assets (TA) Ratio:**

This ratio indicates the relationship of 'personal lending on basis of mortgage' to total assets.

Note: - Personal-Mortgage Loan, in this study, included such loan which has been issued against of the securities or assets for individuals. Additionally it has

Formula:

$$\text{Personal - Mortgage Lending to Total Assets ratio} = \frac{\text{Personal - Mortgage Loan T}}{\text{Total Assets}}$$

Table No. – 4.15

Personal-Mortgage Lending (PML) to Total Assets (TA) Ratios

(Rs. in million)

Year	NABIL			EBL			HBL		
	PML	TA	PML to TA ratio	PML	TA	PML to TA ratio	PML	TA	PML to TA ratio
2004/05	1032.15	17186.33	0.06	647.59	11732.52	0.06	1118.21	27844.69	0.04
2005/06	1599.81	22329.97	0.07	1108.53	15959.28	0.07	1565.29	29460.39	0.05
2006/07	2445.35	27253.39	0.09	2055.08	21432.57	0.10	2158.75	33519.14	0.06
2007/08	4266.60	37132.76	0.11	3667.82	27149.34	0.14	2942.18	36175.53	0.08
2008/09	6996.81	43867.40	0.16	6353.32	36916.85	0.17	4445.41	39320.32	0.11
		Mean	0.10		Mean	0.11		Mean	0.07

(Source: Annual Report of NABIL, EBL and HBL)

Where,

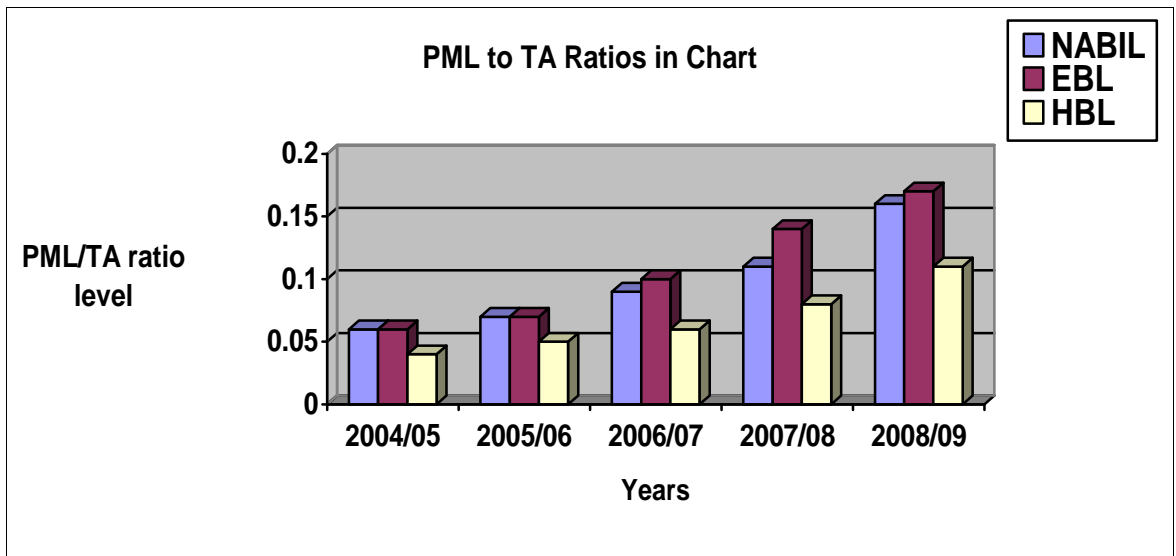
PML = Personal-Mortgage Loan amount

TA = Total Assets

- PML to TA ratio of NABIL is 12% in 2004/05, 15% in 2005/06, 18% in 2006/07, 21% in 2007/08 and 30% in 2008/09.
- PMP to TA ratio of EBL is 13% in 2004/05, 16% in 2005/06, 23% in 2006/07, 26% in 2007/08, and 34% in 2008/09.
- PMP to TA ratio of HBL is 9% in 2004/05, 12% in 2005/06, 14% in 2006/07, 19% in 2007/08 and 26% in 2008/09.

Figure no. – 4.15

Comparison of PML to TA of NABIL, EBL and HBL



- In the comparative study about the over all Personal-Mortgage Lending (PML), the EBL has high PML to TA ratio than NABIL and HBL, which is in increasing trend each year. But in 2004/05 and 2005/06 EBL and NABIL has equal ratios.
- The PML and TA ratio of NABIL is second highest among the concerned banks. And HBL has invested in PML slightly few than EBL and NABIL bank.

2. Liquidity Risk Ratio

Liquidity risk ratio measures the level of risk related with the liquidity assets i.e. Cash and Bank balance that are in the bank for the purpose of satisfying the depositors' demand for cash. Higher ratio expresses about the lower liquidity risk, which is calculated in this way;

Formula:

$$\text{Liquidity Risk Ratio} = \frac{\text{Total Cash and Bank Balance}}{\text{Total Deposit}}$$

Table No. – 4.16

**Total Cash & Bank Balance (TCBB) to Total Deposit (TD) Ratios
Of NABIL, EBL and HBL Bank**

(Rs. in million)

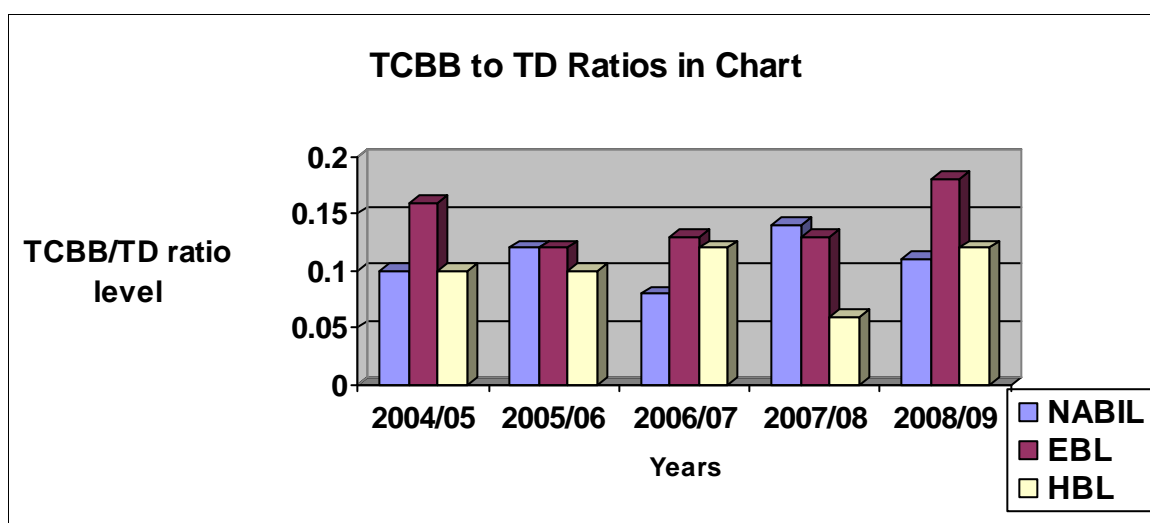
Year	NABIL			EBL			HBL		
	TCBB	TD	TCBB to TD ratio	TCBB	TD	TCBB to TD ratio	TCBB	TD	TCBB to TD ratio
2004/05	1427.81	14586.61	0.10	1619.99	10097.69	0.16	2455.55	24814.01	0.10
2005/06	2365.14	19347.40	0.12	1619.93	13802.44	0.12	2722.63	26490.85	0.10
2006/07	1963.36	23342.29	0.08	2391.42	18186.25	0.13	3467.36	30048.42	0.12
2007/08	4623.50	31915.05	0.14	3013.97	23976.30	0.13	1966.67	31842.79	0.06
2008/09	3925.40	37348.26	0.11	6164.37	33322.95	0.18	4219.32	34681.35	0.12
		Mean	0.11		Mean	0.14		Mean	0.10

(Source: Annual Report of NABIL, EBL and HBL)

- NABIL has lent to its borrowers upto 73% of its total deposit in 2004/05, which has decreased in to 67% in 2005/06 to 207/08, but again it has increased to 74% in 2008/09.
- EBL has used its total deposit upto 75% on lending to its borrowers in 2004/05, 71% in 2005/06, 75% in 2006/07, 76% in 2007/08 and 72% in 2008/09.
- HBL has used its total deposit upto 50% in 2004/05, 55% in 2005/06, 57% in 2006/07, 61% in 2007/08 and 71% in 2008/09.

Figure no. – 4.16

Comparison of TCBB to TD Ratios of NABIL, EBL and HBL Bank



) Personal-Mortgage Loan (PML) to Total Deposit (TD) Ratio:

This is the ratio in between loan amount invested out from total deposits to borrowers for short term or long term. This implies the utilization of firm's fixed deposits of on lending to consumers.

Formula:

$$\text{Personal-Mortgage to Total Deposit X} \frac{\text{Personal-mortgage Loan}}{\text{Total Deposits}}$$

Table No. – 4.17

Personal-Mortgage Lending to Total Deposit Ratio

(Rs. in million)

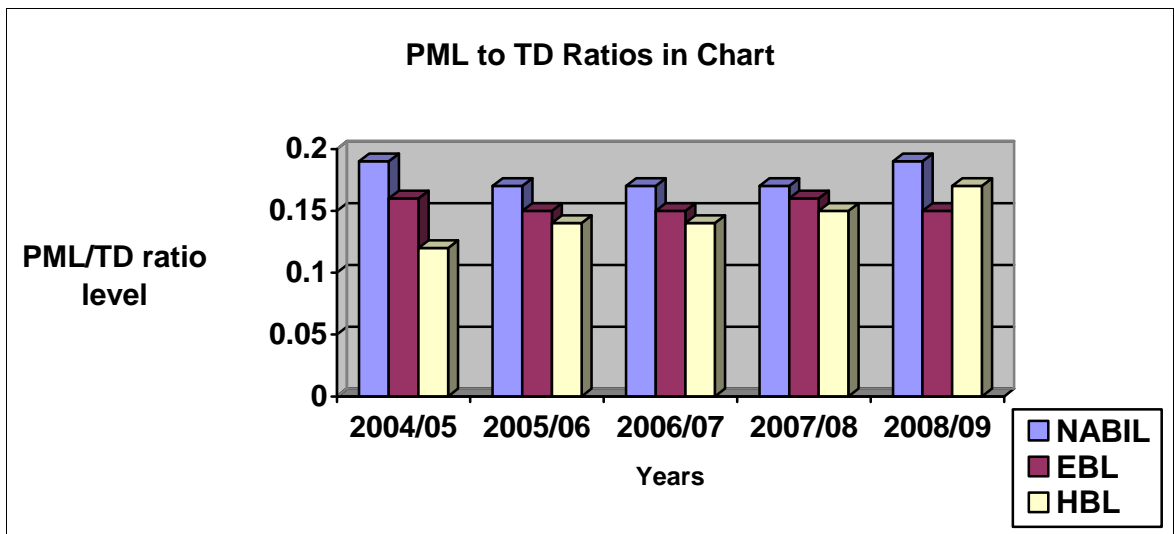
Year	NABIL			EBL			HBL		
	PML	TD	PML to TD	PML	TD	PML to TD	PML	TD	PML to TD
2004/05	2736.68	14586.61	0.19	1580.02	10097.69	0.16	3093.77	24814.01	0.12
2005/06	3319.70	19347.40	0.17	2027.25	13802.44	0.15	3625.25	26490.85	0.14
2006/07	3975.76	23342.29	0.17	2816.54	18186.25	0.15	4092.56	30048.42	0.14
2007/08	5439.87	31915.05	0.17	3767.29	23976.30	0.16	4641.31	31842.79	0.15
2008/09	6999.75	37348.26	0.19	4893.91	33322.95	0.15	5869.49	34681.35	0.17
		Mean	0.18		Mean	0.15		Mean	0.14

(Source: Annual Report of NABIL, EBL and HBL)

- PML to TD ratio of NABIL bank is 0.19 in 2004/05 which has slowly decreased in the following years i.e. 0.17 in 2005/06 to 2007/08 and it's again 0.19 in 2008/09.
- PML to TD ratio of EBL is 0.16 in 2004/05, 0.15 in 2005/06 to 2006/07, it's 0.16 in 2007/08, and again its 0.15 in 2008/09.
- PML to TD ratio of HBL is 0.12 in 2004/05, 0.14 in 2005/06 and 2006/07, 0.15 in 2007/08 and 0.17 in 2008/09.
- PML to TD mean ratios of those three banks are as follows; 0.18, 0.15 and 0.14 respectively.

Figure no. – 4.17

Comparison of Personal-Mortgage Lending to Total Deposit ratios



- In all years the NABIL bank has higher PML to TD ratio than EBL and HBL.
- EBL is in the second position up to 2007/08 from the point of view of lending from total deposit, but in 2008/09 HBL has taken the second position about it.

) **Personal-Mortgage Loan (PML) to Fixed Deposit (FD) Ratio:**

This is the ratio in between loan amount invested out of fixed deposits to borrowers for short term or long term. This implies the utilization of firm's fixed deposits of on lending to consumers.

Formula:

$$\text{Personal - Mortgage to Total Fixed Deposit} \times \frac{\text{Personal - mortgage Loan}}{\text{Total Fixed Deposits}}$$

Table No. – 4.18

Personal-Mortgage Lending to Fixed Deposit Ratio

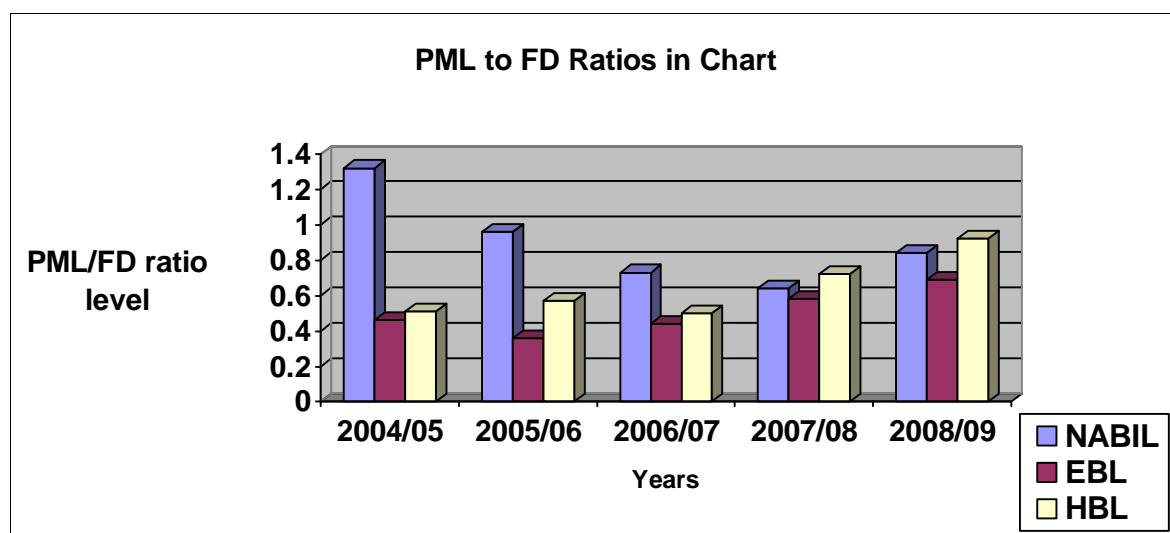
(Rs. in million)

Year	NABIL			EBL			HBL		
	PML	FD	PML to FD	PML	FD	PML to FD	PML	FD	PML to FD
2004/05	2736.68	2078.54	1.32	1580.02	3404	0.46	3093.77	6107.4	0.51
2005/06	3319.70	3449.09	0.96	2027.25	5627	0.36	3625.25	6350.2	0.57
2006/07	3975.76	5435.19	0.73	2816.54	6446	0.44	4092.56	8201.1	0.50
2007/08	5439.87	8464.09	0.64	3767.29	6446	0.58	4641.31	6423.9	0.72
2008/09	6999.75	8310.71	0.84	4893.91	7050	0.69	5869.49	6377.1	0.92
		Mean	0.90		Mean	0.51		Mean	0.64

(Source: Annual Report of NABIL, EBL and HBL)

- PML to FD ratio of NABIL bank is 1.32 in 2004/05 which has slowly decreased in the following years i.e. 0.96 in 2005/06, 0.73 in 2006/07, 0.64 in 2007/08 and 0.84 in 2008/09.
- PML to FD ratio of EBL is 0.46 in 2004/05, 0.36 in 2005/06, 0.44 in 2006/07, 0.58 in 2007/08 and 0.69 in 2008/09.
- PML to FD ratio of HBL is 0.51 in 2004/05, 0.57 in 2005/06, 0.50 in 2006/07, 0.72 in 2007/08 and 0.92 in 2008/09.

Figure no. – 4.18

Comparison of Personal-Mortgage Lending to Fixed Deposit ratios

- In 2004/05 to 2005/06 NABIL bank has higher PML to FD ratio than EBL and HBL, but in 2007/08 and 2008/09 the HBL has higher PML to FD ratio than NABIL and HBL.
- But NABIL bank has higher PML to FD ratio in 2007/08 and 2008/09 than EBL.

J) **Personal-Mortgage Loan (PML) to Saving Deposit (SD) Ratio:** - this is the ratio in between loan amount invested out of saving deposits to borrowers for short term or long term. This implies the utilization of firm's saving deposits of on lending to consumers.

Formula:

$$\text{Personal - mortgage to total Saving Deposit} \times \frac{\text{Personal - mortgage Loan}}{\text{Total Saving Deposits}}$$

Table No. – 4.19

Personal-Mortgage Loan to Saving Deposit Ratio

(Rs. in million)

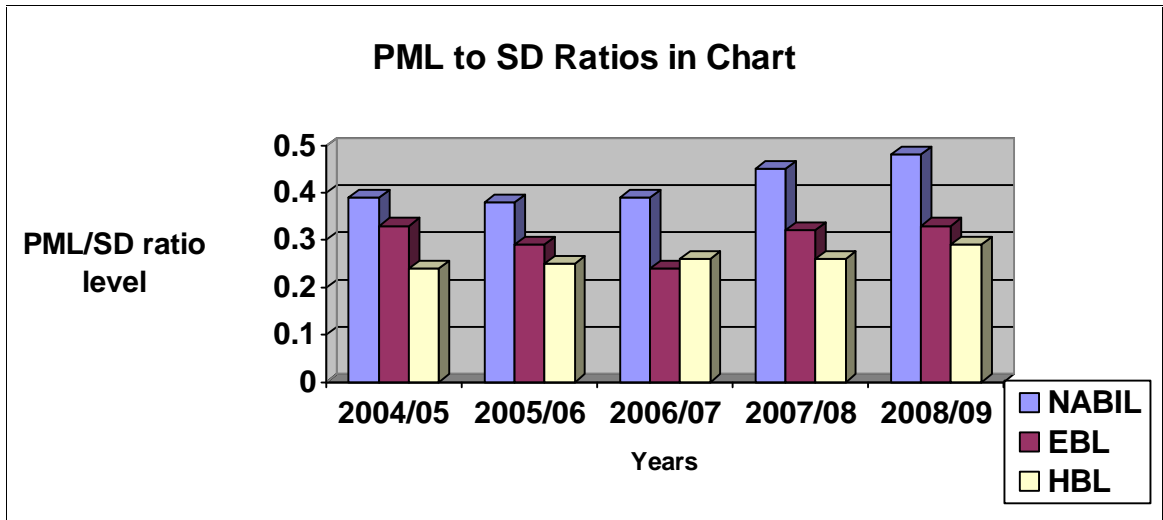
Year	NABIL			EBL			HBL		
	PML	SD	PML to SD Ratio	PML	SD	PML to SD Ratio	PML	SD	PML to SD Ratio
2004/05	2736.68	7026.33	0.39	1580.02	4806.83	0.33	3093.77	12852.41	0.24
2005/06	3319.70	8770.76	0.38	2027.25	6929.22	0.29	3625.25	14582.86	0.25
2006/07	3975.76	10187.35	0.39	2816.54	11883.86	0.24	4092.56	15784.77	0.26
2007/08	5439.87	12159.97	0.45	3767.29	11883.86	0.32	4641.31	17972.44	0.26
2008/09	6999.75	14620.41	0.48	4893.91	14782.33	0.33	5869.49	20061.05	0.29
		Mean	0.42		Mean	0.30		Mean	0.26

(Source: Annual Report of NABIL, EBL and HBL)

- PML to SD ratio of NABIL bank is 39% in 2004/05 and 2006/07, which is 38% in 2005/06, 45% in 2007/08, and 48% in 2008/09.
- PML to SD ratio of EBL is 33% in 2004/05 and 2008/09, which is 29% in 2005/06, 24% in 2006/07, and 32% in 2007/08.
- PML to SD ratio of HBL is 24% in 2004/05, 25% in 2005/06, 26% in 2006/07 and 2007/08, and 29% in 2008/09.

Figure no. – 19

Comparison of PML to SD



- PML to SD ratio of NABIL bank is higher than all other two banks.
- We can find out that EBL also has higher PML to SD ratio than HBL, except in 2006/07.
- NABIL bank has the increasing trend of utilizing the saving deposit for personal lending against of mortgages.
- HBL has nearly constant trend of PML to SD in previous years, whereas it has increased its percentage in following years.

4.3 Data Analysis & Presentation on the basis of Statistical Tools:

Under this heading some important statistical tools have been used, such as co-efficient of correlation analysis between deposit and PML, Deposit and Total loan, PML and Assets, Assets and Net Profit to analyze and interpret the personal and mortgage lending of concern banks. Similarly, test of hypothesis are used to achieve the objective of the study.

4.3.1 Co-efficient of correlation : Under this subtopic, the Karl Person's co-efficient of correlation is used to find out the relationship between deposit and personal-mortgage loan, deposit and total loan, and Assets and Net Profit.

a. Co-efficient of correlation between deposit and total loan:

It is clear that any kinds of banking lending depend upon deposit of customers. Higher the duration of deposit, higher the bankers' ability to provide loan to borrowers. In other words if bank has not acquired sufficient deposits then it can't lend big amount to its borrowers, which is very important source of income because bank is not any manufacturing company.

Theoretically and practically such loan (lent amount) will be secure which has sufficient securities/mortgage and which can be returned in as short period of time as possible. Sometimes lending is made from the fund raised from other sources. In such situation investment is not dependent upon deposit only. Co-efficient of correlation between deposit and loan & advances measures the degree of relationship between these two variables.

The details calculation of the co-efficient of correlation between deposits and Loan & Advances has been presented in Appendix – IV

Table No. – 4.20

Correlation between Total Deposit and Total Loan & Advances

(Rs. in million)

Evaluation Criteria				
Banks	r	r^2	P.Er	6P.Er
NABIL	0.99	0.9801	0.0060	0.0360
EBL	1.00	0.9940	0.0018	0.0100
HBL	0.98	0.9565	0.0130	0.0787

From the above table, all those three banks' co-efficient of correlation between total deposit and Loan & Advances show positive correlation.

NABIL bank's Loan and Advances has 0.99 co-efficient of correlation with its deposit. Mainly, EBL's co-efficient of correlation of Deposit and Loan & Advances is perfectly positive which i.e. +1. HBL's Deposit and Loan & Advances also has positive relationship.

In the comparison of all banks HBL has slightly less correlation in between the Deposit and Loan & Advances, and EBL has highest positive correlation.

b. Co-efficient of correlation between deposit and personal-mortgage loan (PML).

Co-efficient of correlation (r) between deposit and PML measure the degree of relationship in between the two variables. Here, deposit is independent variables and PML is dependent variables. The main objective of computing co-efficient of correlation between deposit and PML is to find out whether deposit has been significantly used for PML and Loan or not (details in Appendix – V).

Table No. – 4.21

Correlation between Total Deposit and Personal-Mortgage Lending

(Rs. in million)

Evaluation Criteria				
Banks	r	r^2	P.Er	6P.Er
NABIL	0.97	0.9409	0.0180	0.1070
EBL	1.00	0.9920	0.0024	0.0140
HBL	0.97	0.9332	0.0300	0.1800

From the above table, we can find out that, all those there banks' co-efficient of correlation between Total Deposit and PML shows positive relation.

NABIL bank's PML has 0.97 co-efficient of correlation with its deposit. Mainly, EBL's co-efficient of correlation of Deposit and PML is again perfectly positive which i.e. +1. NABIL and HBL's have equal positive relationship between Deposit and PML.

c. Co-efficient of correlation between Total Assets (TA) and Net Profit (NP).

Co-efficient of correlation (r) between TA and NP measure the degree of relationship in between the two variables. Here, TA is independent variable and

NP is dependent variable. The main objective of computing co-efficient of correlation between TA and NP is to find out whether assets have been significantly utilized for earning profit or not (details in Appendix – VI).

Table No. – 4.22

Correlation between Total Assets and Net Profit

(Rs. in million)

Evaluation Criterions				
Banks	r	r^2	P.Er	6P.Er
NABIL	0.94	0.8836	0.0760	0.4600
EBL	1.00	0.9940	0.0018	0.0100
HBL	0.98	0.9565	0.0042	0.0260

From the above table, we can find out that, all those there banks' co-efficient of correlation between TA and NP shows positive relation.

NABIL bank's co-efficient of correlation between TA and NP is +0.94. EBL co-efficient of correlation between TA and NP is +1, which is again perfectly correlated. HBL co-efficient of correlation between TA and NP is +0.98.

Comparatively, EBL's TA and NP are highly correlated with each other then NABIL and HBL.

4.3.2 Trend Analysis

Trend Analysis: this topic analyzes about the trend of deposit, personal mortgage loan and net profit of NABIL, EBL and HBL and makes the forecast for the next five years. Under this we can get following sub-topic as follows;

a. Trend analysis of total deposit:

The following table No. - 4.23 shows the trend value of Total Deposit collection of NABIL bank, EBL and HBL for trend value of ten years from 2004/05 to 2013/14 (details Appendix – VII)

Table No. – 4.23

Trend of Total Deposit collection

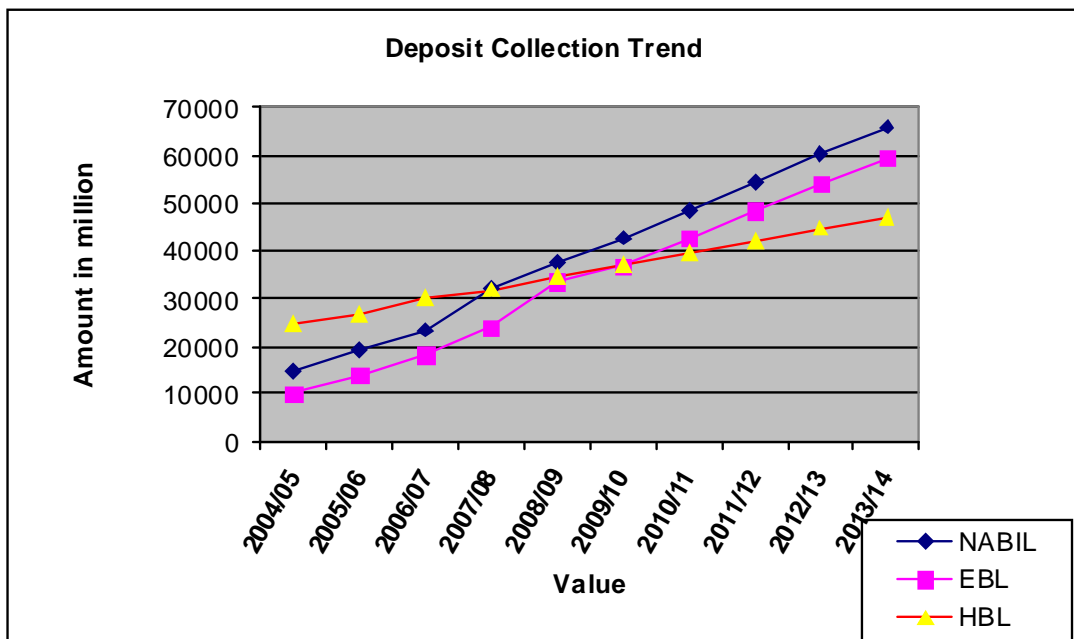
(Rs. in million)

Year	Trend values of NABIL	Trend values of EBL	Trend values of HBL
2004/05	14586.61	10097.69	24814.01
2005/06	19347.40	13802.44	26490.85
2006/07	23342.29	18186.25	30048.42
2007/08	31915.05	23976.30	31842.79
2008/09	37348.26	33322.95	34681.35
2009/10	42735.20	36864.46	37101.37
2010/11	48544.30	42526.90	39610.00
2011/12	54353.39	48189.34	42118.63
2012/13	60162.49	53851.78	44627.26
2013/14	65971.58	59514.22	47135.89

(Source: Annual Report of NABIL, EBL and HBL)

Figure no. - 4.20

Trend of Deposit Collection of NABIL, EBL and HBL



- The above table shows the total deposit of NABIL, EBL, and HBL is in the increasing trend. Other thing remained the same then the total deposit of NABIL bank will be Rs. 65,971.58 million in July 2014. Likewise, the

total deposit of EBL will be Rs. 59,514.22 million in July 2014. Similarly, HBL will have of Rs. 47,135.89 million total deposits in July 2014.

- If we see comparatively; NABIL bank has increased its total deposit more aggressively than others. EBL also has in increasing trend of total deposit, whereas HBL is nearly constant or slow growth in the collection of total deposit.

b. Trend analysis of total personal-mortgage loan (PML):

Table No. - 4.24 shows the trend value of Personal-Mortgage Lending of NABIL bank, EBL and HBL for trend value of ten years from 2004/05 to 2013/14 (details Appendix – VIII)

Table No. – 4.24

Trend Value of Total Personal-Mortgage Lending (PML)

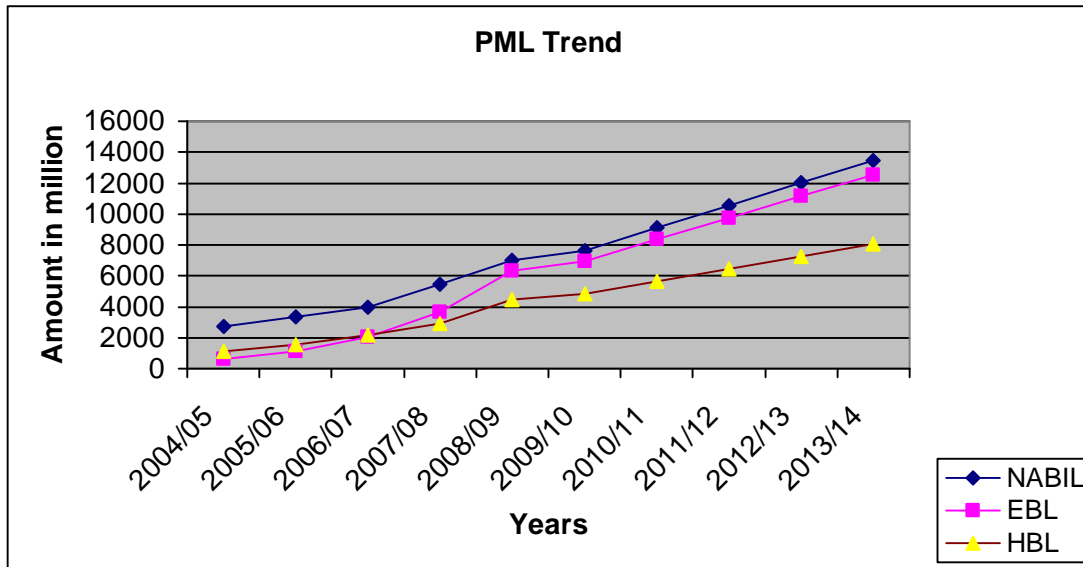
(Rs. in million)

Year	NABIL	EBL	HBL
2004/05	2736.68	647.59	1118.21
2005/06	3319.70	1108.53	1565.29
2006/07	3975.76	2055.08	2158.75
2007/08	5439.87	3667.82	2942.18
2008/09	6999.75	6353.32	4445.41
2009/10	7646.97	6957.69	4855.36
2010/11	9106.58	8354.77	5658.49
2011/12	10566.19	9751.84	6461.62
2012/13	12025.80	11148.92	7264.75
2013/14	13485.41	12545.99	8067.88

(Source: Annual Report of NABIL, EBL and HBL)

Figure no. - 4.21

Trend of Personal Mortgage Lending of NABIL, EBL and HBL



- From the above table we can find out that from the beginning studied year NABIL bank has invested in personal borrowers more than EBL and HBL. If other things remained same then NABIL bank will invest Rs. 13,485.41 million in the year 2013/14. Similarly EBL will invest Rs. 12,545.99 million in the year 2013/14. Likewise, HBL will invest Rs. 8,067.88 million in the year 20114.
- In the beginning year i.e. 2004/05 to 2005/06 HBL has highly invested than EBL but in later on EBL take over in PML to HBL. If the EBL goes in the same trend then definitely it will leave down to NABIL too after certain years because its growth rate in lending is higher than NABIL and HBL.

c. Trend analysis of Income form Personal-Mortgage Lending (IPML):

the table no. 4.25 shows the trend of return on PML of NABIL bank, EBL and HBL in different years from 2004/05 to 2013/14 (details in Appendix – IX).

Table No. – 4.25

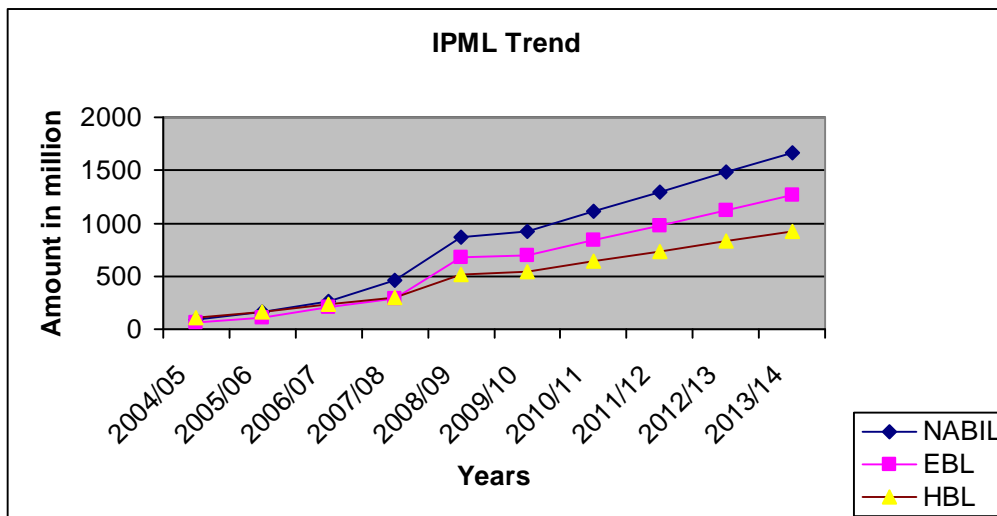
Trend Value of IPML

(Rs. in million)

Year	NABIL	EBL	HBL
2004/05	94.65	59.12	107.24
2005/06	162.70	109.52	164.83
2006/07	260.92	207.36	232.07
2007/08	465.91	286.22	295.98
2008/09	869.00	681.71	515.22
2009/10	926.21	695.36	547.20
2010/11	1111.40	837.55	641.91
2011/12	1296.59	979.74	736.62
2012/13	1481.78	1121.93	831.33
2013/14	1666.97	1264.12	926.05

Figure 4.21

Comparison of IPML Trend of NABIL, EBL and HBL



- The above table shows that the income from personal mortgage lending (IPML) of HBL is higher in 2004/05 and 2005/06 than other two banks NABIL and EBL. After that NABIL bank has been earning highest return from personal mortgage lending than HBL and EBL till the studied year.
- From the above table we can find out more; up to 2007/08 the HBL has higher return than EBL, but from 2008/09 and coming days the EBL's IPML trend seems higher than HBL, however its lower than of NABIL.

4.3.3 Test of Hypothesis

Test of Hypothesis: in this topic has been tried to test significance regarding the parameters of the population on the basis of sample drawn from the population. This test has been conducted on the various ratios related with the banking business. Generally, following steps are followed for the test of hypothesis.

1. Formulating hypothesis;
 - i. Null Hypothesis
 - ii. Alternative Hypothesis
2. Computing the test statistics
3. Fixing the level of significance
4. Finding critical region
5. Deciding two-tailed or one-tailed test
6. Making decision

In the following lines some of hypothesis test are calculated and decision has been made.

The hypothesis test can be done through Z-test, t-test, F-test, ANOVA test and Chi Square test model. If population standard deviation is unknown for large sample size, we use its unbiased estimate provided by the sample standard deviations and the Z score test can be applied. But if the sample size is small and population standard deviation is unknown, in that case the Z-score test is not appropriate. Therefore for the small sample size the t-test model is used hereunder. Because, due to some limitations other hypothesis methods can't be used.

T-test:

T-test methodology of hypothesis is used for testing of hypothesis of equality between two means. To deal with small samples ($n < 30$) and compute the mean for each sample and then plot the frequency distribution of these means, the

resulting sampling distribution would be t-test. On this study sample are taken only for five years about the Personal-Mortgage Lending to Total deposit.

Assumption:

- i. The parent population(s) from which the sample(s) is/are drawn is/are normally distributed.
 - ii. The sample(s) is/are random and independent of each other.
 - iii. The population standard deviation (σ) is unknown.
- a. Test of hypothesis: t-test on Personal-Mortgage Lending to Total deposit ratio of NABIL and EBL, (details in Appendix – X).

Null hypothesis H_0 : $\mu_1 = \mu_2$. That is, the Personal-Mortgage Lending to Total deposit ratios of NABIL and EBL are not significantly different with each other.

Alternative hypothesis H_1 : $\mu_1 \neq \mu_2$ (Two tailed test). That is, there is significant difference in Personal-Mortgage Lending to Total deposit ratios of NABIL and EBL.

Test statistic: Under H_0 , the test statistic is

$$t = (\bar{X}_1 - \bar{X}_2) \div (S_1^2(1/n_1 + 1/n_2)) \text{ with } \dots \text{ d.f.} = n_1 + n_2 - 2$$

where,

$$S_1^2 = [1/(n_1 + n_2 - 2)] [(X_1 - \bar{X}_1)^2 + (X_2 - \bar{X}_2)^2]$$

$$\text{Or, } S_1^2 = \frac{1}{n_1 + n_2 - 2} \sum (x_1^2 + x_2^2)$$

Table No. 4.26

Calculation of Standar Deviation (S^2) of NABIL and EBL

Year	NABIL			EBL		
	X_1	x_1	x_1^2	X_2	x_2	x_2^2
2004/05	7.00	-4.40	19.36	6.00	-5.80	33.64
2005/06	8.00	-3.40	11.56	8.00	-3.80	14.44
2006/07	10.00	-1.40	1.96	11.00	-0.80	0.64
2007/08	13.00	1.60	2.56	15.00	3.20	10.24
2008/09	19.00	7.60	57.76	19.00	7.20	51.84
n = 5	$\Sigma X_1 = 57$		$\Sigma x_1^2 = 93.20$	$\Sigma X_2 = 59$		$\Sigma x_2^2 = 110.80$

$$n_1 = 5, n_2 = 5$$

$$\bar{X}_1 = \frac{\Sigma X_1}{n} = \frac{57}{5} = 11.4, \bar{X}_2 = \frac{\Sigma X_2}{n} = \frac{59}{5} = 11.80$$

$$x_1 = X_1 - \bar{X}_1, x_2 = X_2 - \bar{X}_2$$

$$\begin{aligned} S_1^2 &= [1/(n_1 + n_2 - 2)] [(\Sigma x_1^2) + (\Sigma x_2^2)] \\ &= [1/(5+5-2)] [93.20 + 110.80] \\ &= 2.90 \end{aligned}$$

$$t = (\bar{X}_1 - \bar{X}_2) \div (S_1^2(1/n_1 + 1/n_2)) \text{ with } \dots \text{ d.f.} = n_1 + n_2 - 2$$

$$\begin{aligned} t &= (11.4 - 11.80) / (2.90(1/5 + 1/5)) \\ &= -0.40 / 1.077 \\ &= -0.37 \end{aligned}$$

Hence, $|t| = 0.37$

$$\text{Degree of freedom} = n_1 + n_2 - 2 = 5 + 5 - 2 = 8$$

The tabulated value of t at 5% level of significance for 8 d.f. is 2.306. That is $t_{0.05}(8) = 2.306$.

Conclusion : Since calculated t is less than the tabulated value of t, it is not significant and H_0 is accepted which means there is no significance difference between the Personal-Mortgage Lending to Total deposit ratios of NABIL and EBL.

b. Test of hypothesis on Personal-Mortgage Lending to Total deposit ratio of NABIL and HBL, (details in Appendix – X).

Null hypothesis H_0 : $\mu_1 = \mu_3$. That is, there is not significant difference in Personal-Mortgage Lending to Total deposit ratio of NABIL and EBL with each other.

Alternative hypothesis H_1 : $\mu_1 \neq \mu_3$ (Two tailed test). That is, there is significant difference between the Personal-Mortgage Lending to Total deposit ratios of NABIL and HBL.

Table No. 4.27

Calculation of Standar Deviation (S^2)of NABIL and HBL

Year	NABIL			HBL		
	X_1	x_1	x_1^2	X_2	x_3	x_3^2
2004/05	X_1	x_1	x_1^2	5.00	-1.00	1.00
2005/06	7.00	-4.40	19.36	6.00	0.00	0.00
2006/07	8.00	-3.40	11.56	7.00	1.00	1.00
2007/08	10.00	-1.40	1.96	9.00	3.00	9.00
2008/09	13.00	1.60	2.56	3.00	-3.00	9.00
$n = 5$	$X_1 = 57$		$x_1^2 = 93.20$	$X_3 = 30$		$x_3^2 = 20$

$n_1 = 5, n_3 = 5$

$$\bar{X}_1 = \frac{X_1}{n} = \frac{57}{5} = 11.40, \bar{X}_3 = \frac{X_3}{n} = \frac{30}{5} = 6$$

$$x_1 = X_1 - \bar{X}_1, x_3 = X_3 - \bar{X}_3$$

$$\begin{aligned}
S_2^2 &= [1/(n_1 + n_3 - 2)] [(X_1 - \bar{X}_1)^2 + (X_3 - \bar{X}_3)^2] \\
&= [1/(5+5-2)] [11.40 + 6] \\
&= 2.175
\end{aligned}$$

$$\begin{aligned}
t &= (\bar{X}_1 - \bar{X}_3) \div (S_2^2(1/n_1+1/n_3)) \text{ with } \dots \text{ d.f.} = n_1 + n_2 - 2 \\
&= (11.4 - 6) / (2.175(1/5+1/5)) \\
&= 5.40/0.93 \\
&= 5.79
\end{aligned}$$

Hence, $|t| = 5.79$

$$\text{Degree of freedom} = n_1 + n_3 - 2 = 5 + 5 - 2 = 8$$

The tabulated value of t at 5% level of significance for 8 d.f. is 2.306. That is $t_{0.05}(8) = 2.306$.

Conclusion : Since calculated t is more than the tabulated value of t , it is significant and H_0 is rejected which means there is significance difference between the Personal-Mortgage Lending to Total deposit ratios of NABIL and HBL.

c. Test of hypothesis on Personal-Mortgage Lending to Total deposit ratio of EBL and HBL, (details in Appendix – X).

Null hypothesis H_0 : $\mu_2 = \mu_3$. That is, there is not significant difference in Personal-Mortgage Lending to Total deposit ratio of EBL and HBL with each other.

Alternative hypothesis H_1 : $\mu_2 \neq \mu_3$ (Two tailed test). That is, there is significant difference in Personal-Mortgage Lending to Total deposit ratios of EBL and HBL.

Table No. 4.28

Calculation of Standar Deviation (S^2) of EBL and HBL

Year	EBL			HBL		
	X_2	x_2	x_2^2	X_3	x_3	x_3^2
2004/05	X_2	x_2	x_2^2	X_2	x_3	x_3^2
2005/06	6.00	2.20	4.84	5.00	-1.00	1.00
2006/07	8.00	4.20	17.64	6.00	0.00	0.00
2007/08	11.00	7.20	51.84	7.00	1.00	1.00
2008/09	15.00	11.20	125.44	9.00	3.00	9.00
$n = 5$	$X_2=59$		$x_2^2 = 430.80$	$X_3=30$		$x_3^2 = 20$

$$n_2 = 5, n_3 = 5$$

$$\bar{X}_2 = \frac{X_2}{n} = \frac{59}{5} = 11.8, \bar{X}_3 = \frac{X_3}{n} = \frac{30}{5} = 6$$

$$x_2 = X_2 - \bar{X}_2, x_3 = X_3 - \bar{X}_3$$

$$S_3^2 = [1/(n_2 + n_3 - 2)] [(X_2 - \bar{X}_2)^2 + (X_3 - \bar{X}_3)^2]$$

$$= [1/(5+5-2)] [11.80 + 6]$$

$$= 2.225$$

$$t = (\bar{X}_2 - \bar{X}_3) \div (S_3^2(1/n_2 + 1/n_3)) \text{ with } \dots \text{ d.f.} = n_1 + n_2 - 2$$

$$= (11.8 - 6) / (2.225(1/5 + 1/5))$$

$$= 5.8 / 0.94$$

$$= 6.15$$

where,

n = no. of data observed years

S^2 = standard deviation

t = t-test

\bar{X}_1 = mean

Hence, $|t| = 6.15$

Degree of freedom = $n_1 + n_3 - 2 = 5 + 5 - 2 = 8$

The tabulated value of t at 5% level of significance for 8 d.f. is 2.306. That is $t_{0.05}(8) = 2.306$.

Conclusion : Since calculated t is more than the tabulated value of t, it is significant and H_0 is rejected which means there is significance difference between the Total loan/credit to Total deposit ratios of EBL and HBL.

ANOVA Test:

ANOVA test of Personal-Mortgage Lending to Total Deposit of NABIL, EBL and HBL is as follows:

Null hypothesis $H_0: X_1 = X_2 = X_3$. That is, the means of the various samples do not differ significantly among themselves. In other words, the means of population from which the samples have come is the same.

Alternative hypothesis: $H_1: X_1 \neq X_2 \neq X_3$ (two tailed test). That is, the means of the various samples differ significantly among themselves. In other words, the means of population from which the samples have come is not the same.

Test statistic: under H_0 , the one – way ANOVA F-test statistic is

$$F = \frac{MSC}{MSE}$$

With degree of freedom (k – 1, n – k)

Table No. – 4.29

Calculation of MSC and MSE

X_1	X_2	X_3	$(X_1 - \bar{X}_1)^2$	$(X_2 - \bar{X}_2)^2$	$(X_3 - \bar{X}_3)^2$
19	15	12	1.44	0.04	5.76
17	15	14	0.64	0.04	0.16
17	15	14	0.64	0.04	0.16
17	16	15	0.64	0.64	0.36
19	15	17	1.44	0.04	6.76
89	76	72	5	1	13

NABIL bank's mean sample I, $(\bar{X}_1) = \frac{89}{5} = 17.8$

EBL's mean sample II, $(\bar{X}_2) = \frac{76}{5} = 15.2$

HBL's mean sample II, $(\bar{X}_3) = \frac{72}{5} = 14.4$

Grand mean (mean of the samples mean) = $\bar{\bar{X}} = \frac{\bar{X}_1 \Gamma \bar{X}_2 \Gamma \bar{X}_3}{3}$
 $= \frac{17.8 \Gamma 15.2 \Gamma 14.4}{3}$
 $= 15.80$

SSC = Sum of squares of variation between samples

$= n_j (\bar{X}_j - \bar{\bar{X}})^2$

$= n_1 (\bar{X}_1 - \bar{\bar{X}})^2 + n_2 (\bar{X}_2 - \bar{\bar{X}})^2 + n_3 (\bar{X}_3 - \bar{\bar{X}})^2$

$= 5 (17.8 - 15.80)^2 + 5 (15.2 - 15.80)^2 + 5 (14.4 - 15.80)^2$

$$= 5 \times 4 + 5 \times 0.36 + 5 \times 1.96$$

$$= 20 + 1.8 + 9.80$$

$$= 31.60$$

SSE = sum squares of variation within samples

$$= \sum (X_j - \bar{X}_j)^2$$

$$= (X_1 - \bar{X}_1)^2 + (X_2 - \bar{X}_2)^2 + (X_3 - \bar{X}_3)^2$$

$$= 5 + 1 + 13$$

$$= 19$$

...SST = total sum of squares of variation

$$= SSC + SSE = 31.60 + 19 = 50.60$$

Table No. – 4.30

One – way ANOVA table

Source of variation	Sum of squares (S.S.)	Degree of freedom d.f.	Mean sum of squares (M.S.S.)	F – ratio
Between samples	SSC = 31.60	k – 1 = 3 – 1 = 2	MSC = $\frac{SSC}{k} = \frac{31.60}{2} = 15.80$	F = $\frac{MSC}{MSE}$ = $\frac{15.80}{1.583}$ = 9.98
Within samples (errors)	SSE = 19	n – k = 15 – 3 = 12	MSE = $\frac{SSE}{n - k} = \frac{19}{12} = 1.583$	
Total	SST = 50.60	(n – 1) + (n – k) = 14		

From above ANOVA table, we get

Calculated $F(2, 12) = 9.98$

Tabulated value of F at 5% level of significance for $(2, 12)$ is 19.40

Conclusion: since the calculated value of F is less than the tabulated value of F , it is not significant and H_0 is accepted which means that means of various samples of population do not differ significantly.

4.4 Major Findings of the Study

The main findings of the study are derived on the Comparative study about the Personal-Mortgage Lending of NABIL, EBL and HBL have been described given below.

1. Leverage ratios:

The leverage position of NABIL bank, EBL and HBL reveals that:

- From the comparative study about the debt to assets (D/A) ratio it has been found that EBL has the higher D/A ratio than NABIL bank and HBL up to 2007/08, and HBL has higher D/A ratio than NABIL and EBL in 2008/09.
- The mean D/A ratio of EBL is higher than others two bank i.e. NABIL bank and HBL. The second highest mean D/A ratio is of HBL.
- The mean of Debt/Equity ratio of EBL is higher than NABIL bank and HBL. From the comparative study on figure also we can find out that EBL has high figure than HBL and NABIL. HBL also has higher mean of D/E ratio than NABIL bank.
- Equity multiplier (EM) of EBL is higher than NABIL bank and HBL. HBL is again in second position about the EM also.

- All the above ratios explain about the debt or loan proportion over the total assets.

2. Turnover ratios:

The turnover ratios of NABIL bank, EBL, and HBL reveals that:

- NABIL bank has higher Assets Turnover Ratios (ATR) than EBL and HBL in all years.
- The mean ATR of NABIL bank also is higher than EBL and HBL, whereas EBL and HBL has equal mean of turnover ratio.
- The mean of fixed assets turnover ratio (FATR) of EBL higher than NABIL bank and HBL. NABIL bank has second highest FATR mean among the three banks. All banks' FATR is higher in previous year and has gone to be lower in last years.

3. Profitability ratios:

- The mean of Profit margin of NABIL bank is higher than EBL and HBL. In the profit margin figure also we can get that from beginning of the study NABIL bank profit margin figure in high level than EBL and HBL. Likewise HBL's mean and figure has shown that it has covered second position from the point of view of profit margin.
- The mean net interest margin ratio of NABIL bank is higher than HBL and EBL, whereas EBL and HBL are in equal position.
- The mean net non interest income ratio of NABIL bank and EBL are equal and higher than HBL.
- It means that the NABIL has been generating more income from both interest and non-interest income than EBL and HBL.
- The mean ratio of interest spread also is higher of NABIL bank than EBL and HBL. From this we can say that NABIL bank has utilized its fund efficiently because more positive interest spread means more profit.

- The mean ratio of ROE of NABIL bank is higher than EBL and HBL. Similarly EBL and HBL has equal mean of ROE.
- The return on assets (ROE) ratio of NABIL bank is higher than EBL and HBL.
- The mean ratio of NABIL bank and HBL about the income from Personal-Mortgage Lending is higher and equal than EBL.
- The mean ratio of EBL about the PML contribution over operating income is higher than NABIL bank and HBL. Likewise, NABIL bank is in the second higher position about it. Where PML contributes up to 20% to 30% in operating income of bank.
- From above points we can find out that the NABIL bank has earned high profit from its personal-mortgage lending.

4. Risk Analysis:

- The mean ratio of credit risk of EBL is higher than NABIL bank and HBL. It means that the EBL has high risk. About the risk factor NABIL bank is in second position it has more than 50% credit risk, actually all the concerned banks has more than 50% credit risk.
- The mean ratio of PML to TA of EBL is higher than NABIL bank and HBL. Likewise, NABIL bank is in the second position about this matter.
- In the comparative figure we can find out that the PML to TA risk ratio is growing each year of all banks.
- The mean of Total Cash & Bank Balance (TCBB) to Total Deposit Ratios of EBL is higher than NABIL bank and HBL.
- The mean ratio of PML to FD of NABIL bank is higher than EBL and HBL. It means NABIL bank has used its FD highly for lending to its borrowers than EBL and HBL.
- The mean ratio of PML to SD of NABIL bank is higher than EBL and HBL. It means NABIL bank has used its SD highly than EBL and HBL.

5. Co-efficient of Correlation:

Co-efficient of correlation analysis from the co-efficient of correlation analysis between different variables of NABIL, EBL and HBL, it reveals that:

- The co-efficient of correlation between total deposit and total loan and advances of EBL is highest in the comparison of three studied banks. Likewise, the second highest co-efficient of correlation is NABIL bank's correlation. It means EBL's loan and advance is perfectly dependent over its total deposit.
- EBL has the highest co-efficient of correlation between Total deposit and Personal-mortgage lending among the three banks. It means EBL's personal lending share is perfectly dependent over its total deposit.
- EBL has the highest co-efficient of correlation between total assets and net profit than NABIL bank and HBL.

6. Trend Analysis

- Looking the past trend of deposit collection of NABIL bank, EBL and HBL, and assuming the coming days' trend the NABIL bank will collect more deposit than EBL and HBL. But we can't forget that in the beginning year HBL had high trend of deposit collection.
- The PML trend of NABIL is higher than EBL and HBL from the beginning years to till date i.e. 2008/09 and if other things remain the same then in coming days also NABIL bank will has high trend of investing for personal borrowers.
- The trend of income from personal-mortgage lending (IPML) of NABIL bank is higher than EBL and HBL which is growing with far difference each year.

7. Test of Hypothesis

- Since the calculated value of 't' is less than the tabulated value of t, it is not significant and H_0 is accepted which means that there is no significance difference between the ratio of Personal-Mortgage Lending to Total Deposits of NABIL and EBL.
- But there is significance difference between the Personal-Mortgage Lending to Total Deposits ratio of NABIL and HBL.
- Similarly there is significance difference between the Personal-Mortgage Lending to Total Deposits ratio of EBL and HBL.
- Since the calculated value of F is less than the tabulated value of F, it is not significant and H_0 is accepted which means that means of various samples of population do not differ significantly. Which mean there is no significant different between the mean of PML to TD ratio of sample banks.

8. Products of Personal Lending Unit:

Personal lending unit of each commercial bank has different types of product which as been pointed as follows;

- Auto loan: to purchase the new vehicle for personal use and commercial use in against of same vehicle's mortgage and as per their income.
- Home loan: to purchase new land and house or to build new house over old land, or for renovation of old house.
- Mortgage loan: to do own individual business, for marriage of son & daughter, study etc.
- Educational loan: to send for abroad study to son & daughter like Australia, USA, UK etc. where is asked bank loan paper specially.
- Personal overdraft: to solve a very urgent requirement of prime customers.

CHAPTER – V

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This is the last chapter of this study which is known as Summary, Conclusion and Recommendation, where we summarize to our entire study then make some conclusion on the basis of data analysis and recommend some good suggestion, to the studied entities, developed from the comparative study of various factors.

5.1 Summary

In the chapter – 1 the researcher has tried to explain about the objective of study, background of the study and concerned banks, problems of the study, objectives of the study etc. which are as follows;

In the development of any country the Economic development is most important than others, and for the economic development of any country the commercial banks play a vital role. Commercial banks play a vital role for economic development of a country as they provide huge capital for the development of commerce and industries by lending their collected saving and fixed deposits from public.

Banking in Nepal had been started after establishment of the first commercial banks “Nepal Bank Limited” in 1937.11.15 from government sector. Likewise in 1966.01.23 the Rastriya Banjya Bank was established. But the establishment of NRB i.e. central bank of Nepal in 2013 B.S. was a really significant dimension in the banking history of Nepal.

Joint venture banks are those commercial banks which have been formed by joining two or more enterprises for the same purpose of carrying out specific operation such as investment in commerce and industries. So, the first joint

venture bank of Nepal is NABIL bank, which was established in 1984 by joint investment of Dubai Bank Ltd. and Nepali promoters, because when the government of Nepal adopted the liberal and market oriented economic policy since 1980, then Nepal allowed to foreign banks to be a partner of joint venture banks to operate in Nepal after getting the approval from Nepal Rastra Bank (NRB).

Himalayan Bank Ltd. was established in 1993.01.18 as a third joint venture bank of Nepal with the mutual investment of Habib Bank Limited of Pakistan.

Everest Bank Ltd. was established in 1994.10.18 as a sixth joint venture bank of Nepal with the partnership of Panjab National bank of India.

Most of the researches regarding the banking practices are found normally moving around the principal base again and again rather than filtering the actual situations. Mainly, this study has been concentrated over the personal lending of commercial bank in against of personal borrowers' mortgage capacity and their income. In this process the researcher had consulted with different but related books, booklets, magazine, newspapers, different online journal, articles, interview and inquiry with concerned person of the sample banks as well at the time of research.

This study deals with the contribution of personal-mortgage lending unit of NABIL bank, EBL and HBL in the entire transactions of those banks, e.g. how much has been invested in the personal-mortgage lending out of total loan, how much it (PML) has generated profit out of total operating income, what is the coming days situation etc. The researcher has tried to go through the practical aspects, which has been followed by above sample banks.

Some important banking terms, for which efforts have been made to, clarify the meaning which are frequently used in this study are;

- Deposit
- Loan and Advances
- Lending of commercial bank

In the second chapter the focus has been made on the review of literatures. In this process the researcher had consulted with different but related books, booklets, magazine, newspapers, different online journal, articles books, old thesis etc. where the researcher has observed about the past process of research and its findings.

In the third chapter 'Research Methodology' it has been tried to explain about the tools and techniques of data collection and presentation of collected data after analysis.

In the third chapter have been explained about the financial tools i.e. Leverage ratio (D/A ratio, D/E ratio), turnover ratio (ATR, FATR), profitability ratios, risk ratios. Similarly, about the statistical tools also have been tried to explain i.e. co-efficient of correlation, trend analysis, and test of hypothesis.

In the fourth chapter all the data has been presented in table and for the comparative study it has been presented in figure or chart also. For easiness of data presentation and analysis some calculation has been made in appendix in last. Mainly the data has been collected of five years only and on the basis of collected data all the analysis has been made. This study has been conducted mainly on the basis of secondary data, and to some extent primary data also has been collected through interview with borrowers at the time of working in NABIL bank.

5.2 Conclusion

The leverage position of NABIL bank is lower than EBL and HBL in the comparative study basis. EBL has higher leverage position than NABIL and

HBL in the form of D/A ratio, D/E ratio and EM. It means the EBL has more percentage of debt in its total assets, which is not so good symptoms for stakeholder of the banks because in debt it is certain to pay interest but in lent amount it is not certain to get interest from borrowers. It mean lower the leverage ratios are better for any organization.

The turnover ratios or 'Assets Turnover Ratio' or 'total assets turnover ratio of NABIL bank is higher than EBL and HBL. It shows that the NABIL bank has utilized its total assets for generating profit for bank, but EBL and HBL has not become success to reach in the level of NABIL. It is a very good sing for the stakeholders of NABIL bank, and it should be in continuous grow in upcoming day. EBL and HBL have to increase their ATR in coming days to earn more profit.

Likewise, FATR of EBL is higher than NABIL and HBL, it means EBL has utilized its fixed assets most properly than NABIL bank and HBL, and NABIL bank is in the second position for FATR.

NABIL bank has higher Profit Margin than EBL and HBL; it means NABIL bank has been lending more money to its borrowers with high positive interest spread. HBL is in second position on the basis of Profit margin.

The Net Interest Margin also is higher of NABIL bank than EBL and HBL, its shows about, to some extent, the management skills of bank. But the Net Non Interest Income of NABIL bank and EBL are equal and higher than HBL.

The interest spread of NABIL bank is higher than EBL and HBL, this interest spread is positive. It means NABIL bank has given low interest in its customers' deposit and debt taken from outside, but it charges high interest to its borrowers.

It has been found that the return on equity (ROE) of NABIL bank is higher than EBL and HBL. It shows that the NABIL bank has given high returns or profit to its investors or stakeholders against of their investment than EBL's and HBL's stakeholders. If any bank gives high return to its stakeholders then it fixes the life and credibility of that bank, so to be stable in the competitive market ROE is very important part for commercial banks.

The return on assets (ROA) of NABIL is higher than EBL and HBL. It means NABIL bank has utilized its entire assets more effectively to generate profit than EBL and HBL. But NABIL bank also has utilized its assets more effectively in the beginning years like in 2004/05 to 2006/07, later on it has slowly decreased and has come to be equal with EBL and HBL. This is very strong side of NABIL bank that is in average it has high ROA. If we can't use our assets specially fixed assets properly then we just have to bear depreciation only.

In average the NABIL bank and HBL has been earning high income from their invested loan to their personal borrowers than EBL. Personal borrowers take loan in against of their mortgage and earning capacity because without collateral bank can't provide loan to them. The average contribution of income from personal-mortgage lending (IPML) to total operating income of NABIL bank in last five year is 18%. Similarly EBL has 19% and HBL has 14% contribution of IPML to total operating income. The average return on personal mortgage lending of NABIL bank and HBL is 11%, whereas the EBL has 10%.

The interest rate charged by the commercial banks range from 10% to 16% which is little bit higher than past year, however its quite lower than private lenders' rate of 36% to 42%. The interest in saving account is 3% to 6% nowadays, and the average interest spread rate of NABIL bank is 9%, EBL has 4%, and HBL has 3%.

Liquidity position of EBL is higher in average than NABIL and HBL, which is a good side of EBL to some extent because to be very high liquidity is not so good again, it seems that the organization has not utilized its liquidity properly.

All three banks has been increasing their Total deposit, Total loan and Advances, Personal-Mortgage Lending, Net profit etc. and if all other things remained same then in coming days also it will increase because TD, TLA, PML, NP have some growth each year.

From the above comparative study, it can be concluded than all three banks NABIL bank, EBL and HBL have significant difference between deposit, loan & advances, returns, profit etc. EBL has invested high amount if we compare on the basis of total assets.

5.3 Recommendations:

EBL should control the dependency over debt from outside because in debt it is certain to pay interest but in lent amount it is not certain to get interest from borrowers. HBL also has higher mean leverage ratio, so it would be better to control the high dependency over the debt, for both EBL and HBL in the comparison of NABIL bank. Therefore, EBL and HBL have to increase their share capital issuing stock dividend instead of giving cash dividend, or they can issue the right share to control and reduce the dependency upon debt.

From the point of view of ATR, it is a very good sing for the stakeholders of NABIL bank, and it should be in continuous grow in upcoming day. But EBL and HBL have to increase their ATR means they should use their total assets more efficiently in coming days to earn more profit, otherwise they can lose something in future. But in the sense of FATR the NABIL bank and HBL have to be more conscious to use their fixed assets more than their current utilization

portion. Actually the comparative figure shows the fluctuation about the utilization of fixed assets, but it would be good to be smoothly increasing trend.

HBL and EBL have to control to such factors which effect to its Net interest, it can be from management, likewise controlling operating costs, low positive interest spread etc. Therefore, both banks have to control their operating cost by establishing a strong management.

EBL and HBL should try to give more return to its shareholders, because it will fix, for any organization, the life and credibility of EBL and HBL. Likewise EBL and HBL should utilize their assets more effectively to generate profit. They can invest their fund in new sectors also.

The ROE and ROA of NABIL bank is higher than EBL and HBL its good symptoms for the investors of NABIL bank. It should make continue it in coming days also. But EBL and HBL have to increase their ROE and ROA more in coming days because the investors only see the profit which the banks give to them. In average ROE of NABIL bank is 32% whereas EBL and HBL has only 24%. If EBL and HBL couldn't increase their returns for the shareholders then it will be difficult to survive in the competition market, so they should increase it.

All the three banks (NABIL, EBL and HBL) have to give more priority to invest in again of personal mortgage because it use to be secure, it will have less chances to be default when the bank lent against of personal mortgage. But all the banks have to observe the collateral, and for the observation they shouldn't believe only over the sayings of borrowers the bankers should visit the collaterals themselves. For the income part of the borrowers also the bankers have to observe and visit concerned places- if their incomes are from business or should make inquiry with the employers if their incomes are from salary.

Personal mortgage lending unit should be one very important department of each and every bank because it contributes up to 20% to 30% in operating income of bank. It doesn't only contribute through interest but also through the service charges which is taken at the time of loan application and it comes to be 1% to 2% of total loan once. Therefore bank should attract to personal borrowers.

EBL and HBL have to increase their positive *Interest Spread Rate* if we compare with NABIL bank because the spread use to indentify the intensity of competition among banks in the market. Higher positive interest rate spread shows the successfulness of the bank in collecting the funds at cheaper rate and granting them at higher rate. So to earn higher profit EBL and HBL (actually all banks) have to increase their positive interest rate spread. The higher interest rate spread is not possible for most banks in the time of tough competition, so they should prepare different schemes for depositor and borrowers. , and they have to increase their positive interest spread. However, NRB has indicated to be 3% - 5% the interest spread rate, but still it has not been fixed.

NABIL bank also should search new ideas, policies and principles to keep the constant profit earnings trends in coming days.

All the banks should increase their deposits because without the deposit banks can not lent loan to their borrowers and if they can not lent money then there is no meaning of being existence of bank because they can't earn profit. Deposits and loan & advances are perfectly correlated variables, more deposits more lending and lower deposits lower the lending.

One of the main objectives to operate joint venture banks of Nepal is to boost foreign investment into our country. All the banks, whose about this study has been conducted, have not been success to bring foreign investment or deposits because they does not have any branches in international level, and additionally

they have not such schemes by focusing them. For the investment of such funds we have lots of sectors in Nepal herewith like hydropower, city planning, cement manufacturing, tourism etc. and of-course these are growing profitable field from the point of view of business.

It is fond that commercial banks usually prefer to accept only land and building as the collateral of loan from borrowers. It means that banks are taking higher risk by accepting only single nature of collateral. So it is recommended to the commercial banks to accept other assets also as the collateral or security as well.

In the time of growing competition between commercial banks, they should be customer oriented. There was a time where bankers thought that this is the customer's need to come up to bank, but now it has been changed that trend or culture because it can't work in competitive market. Likewise, in lending sector also needs some new innovations. Most of the people do the same nature's business. This creates the tough competition for those business activity and risk for investor banks. Therefore banks also should provide the technical assistance and financial support to the borrowers.

APPENDIX – I

Calculation of Growth Rate of Total Loan of NABIL, EBL and HBL

Growth rate is calculated;

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

Where,

D_n = Total loan of n^{th} year.

D_0 = Total deposit of initial year

g = growth rate

n = number of year

Calculation of average growth rate of 'Total Loan & Advance' of NABIL bank

For 2004/05 to 2008/09:

$D_{2008/09}$ = Rs. 27589.93 million

$D_{2004/05}$ = Rs. 10586.17 million

n = 5 year

$$D_{2008/09} = D_{2004/05} (1+g)^{5-1}$$

$$\text{Or, } 27589.93 = 10586.17 (1+g)^4$$

$$\text{Or, } 2.306 = (1+g)^4$$

$$\text{Or, } g = (2.306)^{\frac{1}{4}} - 1$$

$$\text{Or, } g = 27\%$$

Calculation of Growth rate in Personal-Mortgage lending each year from 2004/05 to 2008/09;

It is assumed that PML cover 20% of 'Total loan and advances' because one CEO of NIC bank has said in his interview in 2008 that 20% has been invested for individual borrowers out of total loan. Likewise as per

inquiry with the related employee of PLU of NABIL bank they have said the contribution of PLU is 20 – 25 percentages in total loan and advances.

Calculation of rate of PML of NABIL

(Rs. in million)

Fiscal Year	Initial PML %	Avg. Growth rate (%)	New PML %
2004/05	9.75	-	9.75
2005/06	9.75	27.00	12.38
2006/07	12.38	27.00	15.73
2007/08	15.73	27.00	19.97
2008/09	19.97	27.00	25.36

Calculation of PML amount of NABIL Bank

(Rs. in million)

Fiscal Year	Total Loan	% of PML	PML Rs.
2004/05	10586.17	9.75	1032.15
2005/06	12922.54	12.38	1599.81
2006/07	15545.78	15.73	2445.35
2007/08	21365.05	19.97	4266.60
2008/09	27589.93	25.36	6996.81

Calculation of average growth rate of 'Total Loan & Advance' of EBL

For 2004/05 to 2008/09:

$D_{2008/09} = \text{Rs. } 23884.67 \text{ million}$

$D_{2004/05} = \text{Rs. } 7618.67 \text{ million}$

$n = 5 \text{ year}$

$$D_{2008/09} = D_{2004/05} (1+g)^{5-1}$$

$$\text{Or, } 23884.67 = 7618.67 (1+g)^4$$

$$\text{Or, } 3.135 = (1+g)^4$$

$$\text{Or, } g = (3.135)^{\frac{1}{4}} - 1$$

$$\text{Or, } g = 33\%$$

Calculation of rate of PML of EBL

(Rs. in million)

Fiscal Year	Initial PML %	Avg. Growth rate (%)	New PML %
2004/05	8.50	-	8.50
2005/06	8.50	0.33	11.31
2006/07	11.31	0.33	15.04
2007/08	15.04	0.33	20.00
2008/09	20.00	0.33	26.60

Calculation of PML amount of EBL

(Rs. in million)

Fiscal Year	Total Loan	% of PML	PML Rs.
2004/05	7618.67	8.50	647.59
2005/06	9801.31	11.31	1108.53
2006/07	13664.08	15.04	2055.08
2007/08	18339.09	20.00	3667.82
2008/09	23884.67	26.60	6353.32

Calculation of average growth rate of 'Total Loan & Advance' of HBL

For 2004/05 to 2008/09:

$D_{2008/09} = \text{Rs. } 24793.16 \text{ million}$

$D_{2004/05} = \text{Rs. } 12424.52 \text{ million}$

$n = 5 \text{ year}$

$$D_{2008/09} = D_{2004/05} (1+g)^{5-1}$$

$$\text{Or, } 24793.16 = 12424.52(1+g)^4$$

$$\text{Or, } 1.995 = (1+g)^4$$

$$\text{Or, } g = (1.995)^{\frac{1}{4}} - 1$$

$$\text{Or, } g = 18.8\%$$

Calculation of rate of PML of HBL

(Rs. in million)

Fiscal Year	Initial PML %	Avg. Growth rate (%)	New PML %
2004/05	9.00	-	9.00
2005/06	9.00	18.80	10.69
2006/07	10.69	18.80	12.70
2007/08	12.70	18.80	15.09
2008/09	15.09	18.80	17.93

Calculation of PML amount of HBL

(Rs. in million)

Fiscal Year	Total Loan	% of PML	PML Rs.
2004/05	12424.52	9.00	1118.21
2005/06	14642.56	10.69	1565.29
2006/07	16998.00	12.70	2158.75
2007/08	19497.52	15.09	2942.18
2008/09	24793.16	17.93	4445.41

APPENDIX - II

**Calculation of average interest rate of PML in last five years
Of NABIL**

(Rs. in
million)

Fiscal Year	6 months interest rate	Interest rate of Auto Loan	Interest rate of Home Loan	Interest rate of Mortgage Loan	Interest rate of OD Loan	sum of interest rate	average interest rate	Yearly Interest rate
2004/05	1st half	8.50%	7.50%	8.00%	0.00%	24.00%	8.00%	8.17%
	2nd half	9.00%	7.50%	8.50%	0.00%	25.00%	8.33%	
2005/06	1st half	9.00%	8.00%	10.00%	0.00%	27.00%	9.00%	9.17%
	2nd half	9.50%	8.50%	10.00%	0.00%	28.00%	9.33%	
2006/07	1st half	10.00%	8.50%	10.00%	0.00%	28.50%	9.50%	9.67%
	2nd half	10.00%	9.50%	10.00%	0.00%	29.50%	9.83%	
2007/08	1st half	10.50%	8.50%	10.50%	0.00%	29.50%	9.83%	9.92%
	2nd half	11.00%	8.50%	10.50%	0.00%	30.00%	10.00%	
2008/09	1st half	11.50%	10.50%	11.50%	0.00%	33.50%	11.17%	11.42%
	2nd half	12.00%	11.00%	12.00%	0.00%	35.00%	11.67%	

Where,

Sum of interest = interest rate of Auto Loan + Home Loan + Mortgage Loan +
Overdraft (OD) loan.

$$\text{Average interest rate} = \frac{\text{Sum of interest rate}}{\text{No. of PLU products}}$$

No. of PLU products = 4

$$\text{Yearly Interest rate} = \frac{\text{Avg. interest rate of 1st half} + \text{Avg. interest rate of 2nd half}}{2}$$

**Calculation of average interest rate of PML in last five years,
Of EBL**

(Rs. in
million)

Fiscal Year	6 months interest rate	Interest rate of Auto Loan	Interest rate of Home Loan	Interest rate of Mortgage Loan	Interest rate of OD Loan	sum of interest rate	average interest rate	Yearly Interest rate
2004/05	1st half	7.50%	7.75%	8.00%	8.75%	32.00%	8.00%	8.13%
	2nd half	7.50%	8.00%	8.50%	9.00%	33.00%	8.25%	
2005/06	1st half	8.00%	8.25%	9.50%	9.25%	35.00%	8.75%	8.88%
	2nd half	8.50%	8.50%	9.50%	9.50%	36.00%	9.00%	
2006/07	1st half	9.00%	8.75%	8.50%	9.50%	35.75%	8.94%	9.09%
	2nd half	9.50%	9.00%	8.75%	9.75%	37.00%	9.25%	
2007/08	1st half	10.00%	9.00%	9.00%	10.00%	38.00%	9.50%	9.53%
	2nd half	10.00%	9.25%	9.00%	10.00%	38.25%	9.56%	
2008/09	1st half	9.50%	9.25%	9.25%	10.25%	38.25%	9.56%	9.72%
	2nd half	9.75%	9.75%	9.75%	10.25%	39.50%	9.88%	

**Calculation of average interest rate of PML in last five years,
Of HBL**

(Rs. in
million)

Fiscal Year	6 months interest rate	Interest rate of Auto Loan	Interest rate of Home Loan	Interest rate of Mortgage Loan	Interest rate of OD Loan	sum of interest rate	average interest rate	Yearly Interest rate
2004/05	1st half	8.50%	7.50%	8.00%	9.75%	33.75%	8.44%	8.59%
	2nd half	9.00%	7.50%	8.50%	10.00%	35.00%	8.75%	
2005/06	1st half	9.00%	8.00%	10.00%	10.25%	37.25%	9.31%	9.53%
	2nd half	10.00%	8.50%	10.00%	10.50%	39.00%	9.75%	
2006/07	1st half	10.25%	8.50%	10.00%	10.50%	39.25%	9.81%	9.75%
	2nd half	10.25%	9.50%	10.00%	9.00%	38.75%	9.69%	
2007/08	1st half	8.00%	8.50%	10.50%	9.00%	36.00%	9.00%	9.06%
	2nd half	8.50%	8.50%	10.50%	9.00%	36.50%	9.13%	
2008/09	1st half	9.75%	10.50%	11.50%	9.50%	41.25%	10.31%	10.59%
	2nd half	10.75%	11.00%	12.00%	9.75%	43.50%	10.88%	

APPENDIX-III

**Calculation of PML returns in last five years,
Of NABIL**

(Rs. in million)

Fiscal Year	Yearly interest rate	PML Amout	Interest income	rate of service charge	Service Chage in Rs.	Total income
2004/05	8.17%	1032.15	84.33	1.00%	10.32	94.65
2005/06	9.17%	1599.81	146.70	1.00%	16.00	162.70
2006/07	9.67%	2445.35	236.47	1.00%	24.45	260.92
2007/08	9.92%	4266.60	423.25	1.00%	42.67	465.91
2008/09	11.42%	6996.81	799.04	1.00%	69.97	869.00

**Calculation of PML returns in last five years,
Of EBL**

(Rs. in million)

Fiscal Year	Yearly interest rate	PML Amout	Interest income	rate of service charge	Service Chage in Rs.	Total income
2004/05	8.13%	647.59	52.65	1.00%	6.48	59.12
2005/06	8.88%	1108.53	98.44	1.00%	11.09	109.52
2006/07	9.09%	2055.08	186.81	1.00%	20.55	207.36
2007/08	9.53%	3667.82	349.54	1.00%	36.68	386.22
2008/09	9.73%	6353.32	618.18	1.00%	63.53	681.71

**Calculation of PML returns in last five years,
Of HBL**

(Rs. in million)

Fiscal Year	Yearly interest rate	PML Amout	Interest income	rate of service charge	Service Chage in Rs.	Total income
2004/05	8.59%	1118.21	96.05	1.00%	11.18	107.24
2005/06	9.53%	1565.29	149.17	1.00%	15.65	164.83
2006/07	9.75%	2158.75	210.48	1.00%	21.59	232.07
2007/08	9.06%	2942.18	266.56	1.00%	29.42	295.98
2008/09	10.59%	4445.41	470.77	1.00%	44.45	515.22

APPENDIX-IV

**Calculation of Correlation between Deposit and Loan & Advance of
NABIL bank**

(Rs. in million)

Fiscal Year	Loan & Advances (x)	Deposit (y)	$dx = \frac{dx}{(x - \bar{x})}$	dx^2	$dy = \frac{dy}{(y - \bar{y})}$	dy^2	$dx dy$
2004/05	10586.17	14586.61	-7015.73	49220467.43	-10721.31	114946531.00	75217830.24
2005/06	12922.54	19347.40	-4679.36	21896381.93	-5960.52	35527810.59	27891405.66
2006/07	15545.78	23342.29	-2056.12	4227637.68	-1965.64	3863720.95	4041585.37
2007/08	21365.05	31915.05	3763.15	14161320.50	6607.13	43654127.19	24863629.79
2008/09	27589.93	37348.26	9988.03	99760803.21	12040.34	144969666.91	120259263.31
	$\bar{x} =$ 88009.48	$\bar{y} =$ 126539.59	$dx = -0.02$	$dx^2 =$ 189266610.76	$dy = -0.01$	$dy^2 =$ 342961856.65	$dx dy =$ 252273714.37
	$\bar{x} =$ 17601.90	$\bar{y} =$ 25307.918					

$$r_{xy} = \frac{N \sum dx dy}{\sqrt{N \sum dx^2} \sqrt{N \sum dy^2}}$$

$$= \frac{5 | 252273714.37}{\sqrt{5 | 189266610.76} \sqrt{5 | 342961856.65}}$$

$$= \frac{1261368572}{\sqrt{946333053.5} \sqrt{1714809283}}$$

$$= \frac{1261368572}{30762.53 | 41410.26}$$

$$= \frac{1261368572}{1273884235}$$

$$= 0.99$$

Calculation of Probable Error (P.E.):

$$P.E. = 0.6745 \frac{1 Z r^2}{\sqrt{N}}$$

$$= 0.6745 \frac{1 Z 0.99^2}{\sqrt{5}}$$

$$= 0.6745 \times 0.0089$$

$$= 0.006$$

$$6PEr = 6 \times 0.006$$

$$= 0.036$$

$r > 6PE$, therefore co-relation is significant

Calculation of Correlation between Deposit and Loan and Advance of EBL

(Rs. in million)

Fiscal Year	Loan & Advances (x)	Deposit (y)	$dx = \frac{d}{(x - \bar{x})}$	dx^2	$dy = \frac{d}{(y - \bar{y})}$	dy^2	$dx dy$
2004/05	7618.67	10097.69	-7042.89	49602285.47	-9779.44	95637446.71	68875510.40
2005/06	9801.31	13802.44	-4860.25	23622059.22	-6074.69	36901810.00	29524510.86
2006/07	13664.08	18186.25	-997.48	994964.36	-1690.88	2859065.03	1686614.30
2007/08	18339.09	23976.30	3677.53	13524190.13	4099.17	16803178.29	15074792.80
2008/09	23884.67	33322.95	9223.11	85065813.41	13445.82	180789967.91	124012280.35
	$\bar{x} =$ 73307.82	$\bar{y} =$ 99385.63	$dx = 0.02$	$dx^2 =$ 172809312.58	$dy = -0.02$	$dy^2 =$ 332991467.94	$dx dy =$ 239173708.70
	$\bar{x} =$ 14661.56	$\bar{y} =$ 19877.13					

$$\begin{aligned}
 r_{xy} &= \frac{N \sum dx dy}{\sqrt{N \sum dx^2} \sqrt{N \sum dy^2}} \\
 &= \frac{5 \mid 239173708.70 \mid (-0.02 \mid 0.02)}{\sqrt{5 \mid 172809312.58 \mid (0.02)^2} \sqrt{5 \mid 332991467.94 \mid (0.02)^2}} \\
 &= \frac{1195868544}{\sqrt{864046562} \cdot \sqrt{1664957336}} \\
 &= \frac{1195868544}{29394.67 \mid 40803.89} \\
 &= \frac{1195868544}{1199416838} \\
 &= 0.997
 \end{aligned}$$

Calculation of Probable Error (P.E.):

$$\begin{aligned}
 P.E. &= 0.6745 \frac{1Zr^2}{\sqrt{N}} \\
 &= 0.6745 \frac{1Z0.997^2}{\sqrt{5}} \\
 &= 0.6745 \times 0.0027
 \end{aligned}$$

$$= 0.0018$$

$$6PEr = 6 \times 0.0018$$

$$= 0.01$$

$r > 6PE$, therefore co-relation is significant

Calculation of Correlation between Deposit and Loan and Advance of HBL

(Rs. in million)

Fiscal Year	Loan & Advances (x)	Deposit (y)	$dx = (x - \bar{x})$	dx^2	$dy = (y - \bar{y})$	dy^2	$dx dy$
2004/05	12424.52	24814.01	-5246.63	27527126.36	-4761.47	22671587.04	24981666.10
2005/06	14642.56	26490.85	-3028.59	9172363.45	-3084.63	9514936.07	9342079.63
2006/07	16998.00	30048.42	-673.15	453134.96	472.94	223669.41	-318358.96
2007/08	19497.52	31842.79	1826.37	3335627.38	2267.31	5140690.10	4140945.14
2008/09	24793.16	34681.35	7122.01	50722955.22	5105.87	26069857.40	36363996.06
	$\bar{x} =$ 88355.75	$\bar{y} =$ 147877.41	$dx = 0.00$	$dx^2 =$ 91211207.36	$dy = 0.01$	$dy^2 =$ 63620740.01	$dx dy =$ 74510327.96
	$\bar{x} =$ 17671.15	$\bar{y} =$ 29575.48					

$$r_{xy} = \frac{N \sum dx dy}{\sqrt{N \sum dx^2} \sqrt{N \sum dy^2}}$$

$$= \frac{5 \mid 74510327.96}{\sqrt{5 \mid 91211207.36} \sqrt{5 \mid 63620740.01}}$$

$$= \frac{372551639.8}{\sqrt{456056036.8} \sqrt{318103700}}$$

$$= \frac{372551639.8}{21355.47 \mid 17835.46}$$

$$= \frac{372551639.8}{380884670.8}$$

$$= 0.978$$

Calculation of Probable Error (P.E.):

$$P.E. = 0.6745 \frac{1 Z r^2}{\sqrt{N}}$$

$$= 0.6745 \frac{1 Z 0.978^2}{\sqrt{5}}$$

$$= 0.6745 \times 0.0195$$

$$= 0.013$$

$$6PEr = 6 \times 0.013$$

$$= 0.0787$$

$r > 6PE$, therefore co-relation is significant

APPENDIX – V

**Calculation of Correlation between PML and Deposit of NABIL
bank**

(Rs. in million)

Fiscal Year	PML (x)	Deposit (y)	dx = (x - \bar{x})	dx ²	dy = (y - \bar{y})	dy ²	dx dy
2004/05	2117.23	14586.61	-4160.97	17313671.34	-10721.31	114946531.00	44611057.59
2005/06	3282.33	19347.40	-2995.87	8975237.06	-5960.52	35527810.59	17856946.05
2006/07	5015.07	23342.29	-1263.13	1595497.40	-1965.64	3863720.95	2482852.54
2007/08	7945.66	31915.05	1667.46	2780422.85	6607.13	43654127.19	11017119.99
2008/09	13030.73	37348.26	6752.53	45596661.40	12040.34	144969666.91	81302723.30
	x = 31391.02	y = 126539.59	dx = 0.02	dx ² = 76261490.05	dy = -0.01	dy ² = 342961856.65	dx dy = 157270699.46
	\bar{x} = 6278.20	\bar{y} = 25307.918					

$$\begin{aligned}
 r_{xy} &= \frac{N \sum dx dy}{\sqrt{N \sum dx^2} \sqrt{N \sum dy^2}} \\
 &= \frac{5 | 157270699.46 |}{\sqrt{5 | 76261490.05 |} \sqrt{5 | 342961856.65 |}} \\
 &= \frac{786353497.30}{\sqrt{381307450.3} \sqrt{1714809283}} \\
 &= \frac{786353497.30}{19527.1 | 41410.26} \\
 &= \frac{786353497.30}{808622092.8} \\
 &= 0.97
 \end{aligned}$$

Calculation of Probable Error (P.E.):

$$\begin{aligned}
 P.E. &= 0.6745 \frac{1 Z r^2}{\sqrt{N}} \\
 &= 0.6745 \frac{1 Z 0.97^2}{\sqrt{5}} \\
 &= 0.6745 \times 0.0264 \\
 &= 0.018 \\
 6PEr &= 6 \times 0.006
 \end{aligned}$$

$$= 0.107$$

$r > 6PE$, therefore co-relation is significant

Calculation of Correlation between PML and Deposit of EBL

(Rs.
in
millio
n)

Fiscal Year	PML (x)	Deposit (y)	$dx = \frac{dx}{(x - \bar{x})}$	dx^2	$dy = \frac{dy}{(y - \bar{y})}$	dy^2	$dx dy$
2004/05	1523.73	10097.69	-4171.54	17401745.97	-9779.44	95637446.71	40795325.14
2005/06	2607.15	13802.44	-3088.12	9536485.13	-6074.69	36901810.00	18759359.33
2006/07	4834.35	18186.25	-860.92	741183.25	-1690.88	2859065.03	1455709.83
2007/08	7141.24	23976.30	1445.97	2090829.24	4099.17	16803178.29	5927273.95
2008/09	12369.87	33322.95	6674.60	44550285.16	13445.82	180789967.91	89745443.47
	$\bar{x} = 28476.34$	$\bar{y} = 99385.63$	$dx = -0.01$	$dx^2 = 74320528.75$	$dy = -0.02$	$dy^2 = 332991467.94$	$dx dy = 156683111.72$
	$\bar{x} = 5695.27$	$\bar{y} = 19877.13$					

$$r_{xy} = \frac{N \sum dx dy}{\sqrt{N \sum dx^2} \sqrt{N \sum dy^2}}$$

$$= \frac{5 | 156683111.72 Z(-0.01) | (Z(0.02))}{\sqrt{5 | 74320528.75 Z(0.02)^2} \sqrt{5 | 332991467.94 Z(0.02)^2}}$$

$$= \frac{783415558.6}{\sqrt{371602643.8} \sqrt{1664957340}}$$

$$= \frac{783415558.6}{19276.10 | 40803.89}$$

$$= \frac{783415558.6}{786576497.4}$$

$$= 0.996$$

Calculation of Probable Error (P.E.):

$$P.E. = 0.6745 \frac{1 Z r^2}{\sqrt{N}}$$

$$= 0.6745 \frac{1Z0.996^2}{\sqrt{5}}$$

$$= 0.6745 \times 0.0036$$

$$= 0.0024$$

$$6PEr = 6 \times 0.0024$$

$$= 0.014$$

$r > 6PE$, therefore co-relation is significant

Calculation of Correlation between PML and Deposit of HBL

(Rs. in million)

Fiscal Year	PML (x)	Deposit (y)	$dx = \frac{dx}{(x - \bar{x})}$	dx^2	$dy = \frac{dy}{(y - \bar{y})}$	dy^2	$dx dy$
2004/05	2484.91	24814.01	-3072.75	9441792.56	-4761.47	22671587.04	14630803.87
2005/06	3479.07	26490.85	-2078.59	4320536.39	-3084.63	9514936.07	6411678.99
2006/07	4798.53	30048.42	-759.13	576278.36	472.94	223669.41	-359020.66
2007/08	6781.24	31842.79	1223.58	1497148.02	2267.31	5140690.10	2774233.95
2008/09	10244.53	34681.35	4686.87	21966750.40	5105.87	26069857.40	23930525.49
	$\bar{x} = 27788.28$	$\bar{y} = 147877.41$	$dx = -0.02$	$dx^2 = 37802505.72$	$dy = 0.01$	$dy^2 = 63620740.01$	$dx dy = 47388221.64$
	$\bar{x} = 5557.66$	$\bar{y} = 29575.48$					

$$r_{xy} = \frac{N \sum dx dy}{\sqrt{N \sum dx^2} \sqrt{N \sum dy^2}}$$

$$= \frac{5 | 47388221.64}{\sqrt{5 | 37802505.72} \sqrt{5 | 63620740.01}}$$

$$= \frac{236941108.20}{\sqrt{189012528.6} \sqrt{318103700}}$$

$$= \frac{236941108.20}{13748.18 | 17835.46}$$

$$= \frac{236941108.20}{245205163.30}$$

$$= 0.966$$

Calculation of Probable Error (P.E.):

$$P.E. = 0.6745 \frac{1Zr^2}{\sqrt{N}}$$

$$= 0.6745 \frac{1Z0.966^2}{\sqrt{5}}$$

$$= 0.6745 \times 0.030$$

$$= 0.030$$

$$6PEr = 6 \times 0.030$$

$$= 0.18$$

$r > 6PE$, therefore co-relation is significant

APPENDIX-VI

Calculation of Correlation between Total Assets and Net Profit of
NABIL bank

(Rs. in million)

Fiscal Year	Assets (x)	Net Profit (y)	$dx = \frac{dx}{(x - \bar{x})}$	dx^2	$dy = \frac{dy}{(y - \bar{y})}$	dy^2	$dx dy$
2004/05	17186.33	520.11	-12367.64	152958498.99	-201.26	40503.98	2489061.59
2005/06	22329.97	635.26	-7224.00	52186161.55	-86.11	7414.59	622044.11
2006/07	27253.39	673.96	-2300.58	5292654.53	-47.41	2247.74	109071.05
2007/08	37132.76	746.47	7578.79	57438042.71	25.10	629.91	190212.45
2008/09	43867.40	1031.05	14313.43	204874206.80	309.68	95903.62	4432626.57
	$\bar{x} =$ 147769.85	$\bar{y} =$ 3606.86	$dx = 0.00$	$dx^2 =$ 472749564.57	$dy = 0.01$	$dy^2 =$ 146699.83	$dx dy =$ 7843015.77
	$\bar{x} =$ 29553.97	$\bar{y} =$ 721.37					

$$\begin{aligned}
 r_{xy} &= \frac{N \sum dx dy}{\sqrt{N \sum dx^2} \sqrt{N \sum dy^2}} \\
 &= \frac{5 | 7843015.77}{\sqrt{5 | 472749564.57} \sqrt{5 | 146699.83}} \\
 &= \frac{39215078.85}{\sqrt{2363747823} \sqrt{733499.15}} \\
 &= \frac{39215078.85}{48618.39 | 856.45} \\
 &= \frac{39215078.85}{41639008.59} \\
 &= 0.94
 \end{aligned}$$

Calculation of Probable Error (P.E.):

$$\begin{aligned}
 P.E. &= 0.6745 \frac{1 - r^2}{\sqrt{N}} \\
 &= 0.6745 \frac{1 - 0.942^2}{\sqrt{5}} \\
 &= 0.6745 \times 0.113 \\
 &= 0.076
 \end{aligned}$$

$$6PEr = 6 \times 0.076$$

$$= 0.46$$

$r > 6PE$, therefore co-relation is significant

Calculation of Correlation between Assets and Net Profit of EBL

(Rs. in million)

Fiscal Year	Assets (x)	Net Profit (y)	$dx = \frac{dx}{(x - \bar{x})}$	dx^2	$dy = \frac{dy}{(y - \bar{y})}$	dy^2	$dx dy$
2004/05	11732.52	168.21	-10905.59	118931971.38	-190.16	36159.30	2073764.05
2005/06	15959.28	237.29	-6678.83	44606707.56	-121.08	14660.37	808672.17
2006/07	21432.57	296.41	-1205.54	1453316.32	-61.96	3839.17	74696.20
2007/08	27149.34	451.22	4511.23	20351222.13	92.85	8620.75	418858.95
2008/09	36916.85	638.73	14278.74	203882358.87	280.36	78602.85	4003215.54
	$\bar{x} =$ 113190.57	$\bar{y} =$ 1791.86	$dx = 0.02$	$dx^2 =$ 389225576.27	$dy =$ 0.01	$dy^2 =$ 141882.44	$dx dy =$ 7379206.91
	$\bar{x} =$ 22638.11	$\bar{y} =$ 358.37					

$$r_{xy} = \frac{N \sum dx dy}{\sqrt{N \sum dx^2} \sqrt{N \sum dy^2}}$$

$$= \frac{5 \times 7379206.91}{\sqrt{5 \times 389225576.27} \sqrt{5 \times 141882.44}}$$

$$= \frac{36896034.55}{\sqrt{1946127881} \sqrt{709412.2}}$$

$$= \frac{36896034.55}{44114.94 \times 842.27}$$

$$= \frac{36896034.55}{37156690.51}$$

$$= 0.993$$

Calculation of Probable Error (P.E.):

$$P.E. = 0.6745 \frac{1 Z r^2}{\sqrt{N}}$$

$$= 0.6745 \frac{1 Z 0.993^2}{\sqrt{5}}$$

$$= 0.6745 \times 0.0062$$

$$= 0.0042$$

$$6PEr = 6 \times 0.0042$$

$$= 0.026$$

$r > 6PE$, therefore co-relation is significant

Calculation of Correlation between Assets and Net Profit of HBL

(Rs. in million)

Fiscal Year	Assets (x)	Net Profit (y)	$dx = \frac{dx}{(x - \bar{x})}$	dx^2	$dy = \frac{dy}{(y - \bar{y})}$	dy^2	$dx dy$
2004/05	27844.69	308.28	-5419.33	29369087.19	-220.97	48829.88	1197534.49
2005/06	29460.39	457.46	-3803.63	14467603.67	-71.79	5154.13	273071.38
2006/07	33519.14	491.82	255.12	65086.78	-37.43	1400.79	-9548.44
2007/08	36175.53	635.87	2911.51	8476896.30	106.62	11367.51	310420.99
2008/09	39320.32	752.83	6056.30	36678794.75	223.58	49990.13	1354096.69
	$\bar{x} =$ 166320.08	$\bar{y} =$ 2646.26	$dx = -0.02$	$dx^2 =$ 89057468.70	$dy = 0.01$	$dy^2 =$ 116742.44	$dx dy =$ 3125575.12
	$\bar{x} =$ 33264.02	$\bar{y} =$ 529.25					

$$r_{xy} = \frac{N \sum dx dy}{\sqrt{N \sum dx^2} \sqrt{N \sum dy^2}}$$

$$= \frac{5 | 3125575.12 | Z(-0.02 | 0.01)}{\sqrt{5 | 89057468.70 | Z(0.02)^2} \sqrt{5 | 116742.14 | Z(0.01)^2}}$$

$$= \frac{15627875.6}{\sqrt{445287343.5} \sqrt{583710.7}}$$

$$= \frac{15627875.6}{21101.83 | 764}$$

$$= \frac{15627875.6}{16121800.19}$$

$$= 0.969$$

Calculation of Probable Error (P.E.):

$$P.E. = 0.6745 \frac{1 Z r^2}{\sqrt{N}}$$

$$= 0.6745 \frac{1 Z 0.969^2}{\sqrt{5}}$$

$$= 0.6745 \times 0.061$$

$$= 0.041$$

$$6PEr = 6 \times 0.041$$

$$= 0.25$$

$r > 6PE$, therefore co-relation is significant

APPENDIX - VII

Calculation of Deposit trend of NABIL bank for next 5 years

(Rs. in million)

Fiscal Year	Year duration (x)	Deposit (y)	x ²	y ²	xy
2004/05	1	14586.61	1.00	212769132.95	14586.61
2005/06	2	19347.40	4.00	374321848.07	38694.80
2006/07	3	23342.29	9.00	544862269.02	70026.86
2007/08	4	31915.05	16.00	1018570225.01	127660.19
2008/09	5	37348.26	25.00	1394892151.55	186741.28
N = 5	x = 15	y = 126539.59	x ² = 55	y ² = 3545415626.59	xy = 437709.72

54

We have,

$$y = a + bx \quad (i)$$

$$y = Na + b x \quad (ii)$$

$$xy = a x + b x^2 \quad (iii)$$

From eqⁿ (iv) and (v)

$$5a + 15b = 126539.59 \quad (iv) \times$$

$$15$$

$$\underline{15a + 55b = 437709.72} \quad (v) \times$$

$$\underline{5}$$

From eqⁿ (ii) we get,

$$y = Na + b x \quad (ii)$$

$$\text{Or, } 126539.59 = 5a + b \times 15$$

$$\text{Or, } 5a + 15b = 126539.59 \quad (iv)$$

From eqⁿ (iii) we get

$$xy = a x + a x^2$$

(iii)

$$\text{Or, } 437709.72 = a \times 15 + b \times 55$$

$$\text{Or, } 15a + 55b = 437709.72$$

(v)

$$75a + 225b = 1898093.85$$

$$75a + 275b = 2188548.60$$

$$\underline{\quad - \quad - \quad -}$$

$$0 \quad - 50b = - 290454.75$$

$$\text{Or, } b = 5809.095$$

Substituting the value of 'b' in

eqⁿ (iv) we get,

$$5a + 15 \times 5809.095 = 126539.59$$

$$\text{Or, } a = 39403.165/5$$

$$\text{Or, } a = 7880.633$$

Now, calculation of future days deposit trend

Substituting the value of 'a' & 'b' in eqⁿ (i) we get,

$$y = a + bx$$

$$Y_{2009/10} = 7880.633 + 5809.095 \times 6$$

$$= 42735.20$$

$$Y_{2010/11} = 7880.633 + 5809.095 \times 7$$

$$= 48544.298$$

$$Y_{2011/12} = 7880.633 + 5809.095 \times 8$$

$$= 54353.393$$

$$Y_{2012/13} = 7880.633 + 5809.095 \times 9$$

$$= 60162.488$$

$$Y_{2013/14} = 7880.633 + 5809.095 \times 10$$

$$= 65971.583$$

Calculation of Deposit trend of EBL for next 5 years

(Rs. in million)

Fiscal Year	Year duration (x)	Deposit (y)	x ²	y ²	xy
2004/05	1	10097.69	1.00	101963343.34	10097.69
2005/06	2	13802.44	4.00	190507460.37	27604.89
2006/07	3	18186.25	9.00	330739798.18	54558.76
2007/08	4	23976.30	16.00	574862865.78	95905.19
2008/09	5	33322.95	25.00	1110418730.12	166614.73
N = 5	x = 15	y = 99385.63	x ² = 55	y ² = 2308492197.79	xy = 354781.26

We have,

$$y = a + bx \quad (i)$$

$$y = Na + b x \quad (ii)$$

$$xy = a x + b x^2 \quad (iii)$$

From eqⁿ (iv) and (v)

$$5a + 15b = 99385.63 \quad (iv) \times 15$$

$$\underline{15a + 55b = 354781.26 \quad (v) \times 5}$$

5

From eqⁿ (ii) we get,

$$y = Na + b x \quad (ii)$$

$$\text{Or, } 99385.63 = 5a + b \times 15$$

$$\text{Or, } 5a + 15b = 99385.63 \quad (iv)$$

From eqⁿ (iii) we get

$$75a + 225b = 1490784.45$$

$$75a + 275b = 1773906.30$$

$$\underline{\quad - \quad - \quad -}$$

$$0 \quad - 50b = - 283121.85$$

$$xy = a x + a x^2$$

(iii) Or, $354781.26 = a \times 15 + b \times 55$

Or, $15a + 55b = 354781.26$

(v) Or, $b = 5662.44$

Substituting the value of 'b' in eqⁿ (iv) we get,

$$5a + 15 \times 5662.44 = 99385.63$$

Or, $a = 14449.075/5$

Or, $a = 2889.815$

Now, calculation of future days deposit trend

Substituting the value of 'a' & 'b' in eqⁿ (i) we get,

$$y = a + bx$$

$$y_{2009/10} = 2889.815 + 5662.44 \times 6$$

$$= 36864.455$$

$$y_{2010/11} = 2889.815 + 5662.44 \times 7$$

$$= 42526.895$$

$$y_{2011/12} = 2889.815 + 5662.44 \times 8$$

$$= 48189.335$$

$$y_{2012/13} = 2889.815 + 5662.44 \times 9$$

$$= 53851.775$$

$$y_{2013/14} = 2889.815 + 5662.44 \times 10$$

$$= 59514.215$$

Calculation of Deposit trend of HBL for next 5 years

(Rs. in million)

Fiscal Year	Year duration (x)	Deposit (y)	x ²	y ²	xy
2004/05	1	24814.01	1.00	615735141.91	24814.01
2005/06	2	26490.85	4.00	701765186.70	52981.70
2006/07	3	30048.42	9.00	902907364.21	90145.25
2007/08	4	31842.79	16.00	1013963211.30	127371.16
2008/09	5	34681.35	25.00	1202795691.01	173406.73
N = 5	x = 15	y = 147877.41	x ² = 55	y ² = 4437166595.13	xy = 468718.85

We have,

$$y = a + bx \quad (i)$$

$$y = Na + b x \quad (ii)$$

$$xy = a x + b x^2 \quad (iii)$$

From eqⁿ (ii) we get,

$$y = Na + b x \quad (ii)$$

$$\text{Or, } 147877.41 = 5a + b \times 15$$

$$\text{Or, } 5a + 15b = 147877.41 \quad (iv)$$

From eqⁿ (iii) we get

$$xy = a x + a x^2$$

(iii)

$$\text{Or, } 468718.85 = a \times 15 + b \times 55$$

$$\text{Or, } 15a + 55b = 468718.55$$

(v)

From eqⁿ (iv) and (v)

$$5a + 15b = 147877.41 \quad (iv) \times$$

$$15$$

$$\underline{15a + 55b = 468718.55} \quad (v) \times$$

$$\underline{5}$$

$$75a + 225b = 2218161.15$$

$$75a + 275b = 2343592.75$$

$$- \quad - \quad -$$

$$0 \quad - 50b = - 125431.6$$

$$\text{Or, } b = 2508.63$$

Substituting the value of 'b' in eqⁿ (iv) we get,

$$5a + 15 \times 2508.63 = 147877.41$$

$$\text{Or, } a = 110247.96/5$$

$$\text{Or, } a = 22049.592$$

Now, calculation of future days deposit trend

Substituting the value of 'a' & 'b' in eqⁿ (i) we get,

$$y = a + bx$$

$$y_{2009/10} = 22049.59 + 2508.63 \times 6$$

$$= 37101.37$$

$$y_{2010/11} = 22049.59 + 2508.63 \times 7$$

$$= 39610$$

$$y_{2011/12} = 22049.59 + 2508.63 \times 8$$

$$= 42118.63$$

$$y_{2012/13} = 22049.59 + 2508.63 \times 9$$

$$= 44627.26$$

$$y_{2013/14} = 22049.59 + 2508.63 \times 10$$

= 47135.89

APPENDIX - VIII

Calculation of PML trend of NABIL bank for next 5 years

(Rs. in million)

Fiscal Year	Year duration (x)	PML (y)	x ²	xy
2004/05	1	1032.15	1.00	1032.15
2005/06	2	1599.81	4.00	3199.62
2006/07	3	2445.35	9.00	7336.05
2007/08	4	4266.60	16.00	17066.40
2008/09	5	6996.81	25.00	34984.05
N = 5	x = 15	y = 16340.72	x ² = 55	xy = 63618.27

We have,

$$y = a + bx \quad (i)$$

$$y = Na + b x \quad (ii)$$

$$xy = a x + b x^2 \quad (iii)$$

From eqⁿ (iv) and (v)

$$5a + 15b = 16340.72 \quad (iv) \times$$

$$15$$

$$\underline{15a + 55b = 63618.27} \quad (v) \times$$

From eqⁿ (ii) we get,

$$y = Na + b x \quad (ii)$$

$$\text{Or, } 16340.72 = 5a + b \times 15$$

$$\text{Or, } 5a + 15b = 16340.72 \quad (iv)$$

From eqⁿ (iii) we get

$$xy = a x + b x^2 \quad (iii)$$

$$\text{Or, } 63618.27 = a \times 15 + b \times 55$$

$$\text{Or, } 15a + 55b = 63618.27 \quad (v)$$

$$\underline{5}$$

$$75a + 225b = 245110.80$$

$$75a + 275b = 318091.35$$

$$\underline{- \quad - \quad -}$$

$$0 \quad - 50b = - 72980.55$$

$$\text{Or, } b = 1459.61$$

Substituting the value of 'b' in eqⁿ (iv) we get,

$$5a + 15 \times 1459.61 = 16340.72$$

$$\text{Or, } a = - 5553.445/5$$

$$\text{Or, } a = -1110.69$$

Now, calculation of future day's PML trend

Substituting the value of 'a' & 'b' in eqⁿ (i) we get,

$$y = a + bx$$

$$Y_{2009/10} = -1110.69 + 1459.61 \times 6$$

$$= 7646.97$$

$$Y_{2010/11} = -1110.69 + 1459.61 \times 7$$

$$= 9106.58$$

$$Y_{2011/12} = -1110.69 + 1459.61 \times 8$$

$$= 10566.19$$

$$Y_{2012/13} = -1110.69 + 1459.61 \times 9$$

$$= 12025.80$$

$$Y_{2013/14} = -1110.69 + 1459.61 \times 10$$

$$= 13485.41$$

Calculation of PML trend of EBL for next 5 years

(Rs. in million)

Fiscal Year	Year duration (x)	PML (y)	x ²	xy
2004/05	1	647.59	1.00	647.59
2005/06	2	1108.53	4.00	2217.06
2006/07	3	2055.08	9.00	6165.24
2007/08	4	3667.82	16.00	14671.28
2008/09	5	6353.32	25.00	31766.60
N = 5	x = 15	y = 13832.34	x ² = 55	xy = 55467.77

We have,

$$y = a + bx \quad (i)$$

$$y = Na + b x \quad (ii)$$

$$xy = a x + b x^2 \quad (iii)$$

From eqⁿ (iv) and (v)

$$5a + 15b = 13832.34 \quad (iv) \times$$

$$15$$

$$\underline{15a + 55b = 55467.77} \quad (v) \times$$

$$\underline{5}$$

From eqⁿ (ii) we get,

$$y = Na + b x \quad (ii)$$

$$\text{Or, } 13832.34 = 5a + b \times 15$$

$$\text{Or, } 5a + 15b = 13832.34 \quad (iv)$$

From eqⁿ (iii) we get

$$xy = a x + a x^2 \quad (iii)$$

$$75a + 225b = 207485.10$$

$$75a + 275b = 277338.85$$

$$\underline{\quad - \quad - \quad - \quad}$$

$$0 \quad - 50b = - 69853.75$$

$$\text{Or, } 55467.77 = a \times 15 + b \times 55$$

$$\text{Or, } b = 1397.075$$

$$\text{Or, } 15a + 55b = 55467.77 \quad (\text{v})$$

Substituting the value of 'b' in eqⁿ (iv) we get,

$$5a + 15 \times 1397.075 = 13832.34$$

$$\text{Or, } a = -7123.78/5$$

$$\text{Or, } a = -1424.76$$

Now, calculation of future day's PML trend

Substituting the value of 'a' & 'b' in eqⁿ (i) we get,

$$y = a + bx$$

$$y_{2009/10} = -1424.76 + 1397.075 \times 6 = 6957.69$$

$$y_{2010/11} = -1424.76 + 1397.075 \times 7 = 8354.765$$

$$y_{2011/12} = -1424.76 + 1397.075 \times 8 = 9751.84$$

$$y_{2012/13} = -1424.76 + 1397.075 \times 9 = 11148.915$$

$$y_{2013/14} = -1424.76 + 1397.075 \times 10 = 12545.99$$

Calculation of PML trend of HBL for next 5 years

(Rs. in million)

Fiscal Year	Year duration (x)	PML (y)	x ²	xy
2004/05	1	1118.21	1.00	1118.21
2005/06	2	1565.29	4.00	3130.58
2006/07	3	2158.75	9.00	6476.25
2007/08	4	2942.18	16.00	11768.72
2008/09	5	4445.41	25.00	22227.05
N = 5	x = 15	y = 12229.84	x ² = 55	xy = 44720.81

We have,

$$y = a + bx \quad (i)$$

$$y = Na + b x \quad (ii)$$

$$xy = a x + b x^2 \quad (iii)$$

From eqⁿ (ii) we get,

$$y = Na + b x \quad (ii)$$

$$\text{Or, } 12229.84 = 5a + b \times 15$$

$$\text{Or, } 5a + 15b = 12229.84 \quad (iv)$$

From eqⁿ (iii) we get

$$xy = a x + a x^2 \quad (iii)$$

$$\text{Or, } 44720.81 = a \times 15 + b \times 55$$

$$\text{Or, } 15a + 55b = 44720.81 \quad (v)$$

From eqⁿ (iv) and (v)

$$5a + 15b = 12229.84 \quad (iv) \times 15$$

$$\underline{15a + 55b = 44720.81 \quad (v) \times 5}$$

$$75a + 225b = 183447.60$$

$$75a + 275b = 223604.05$$

$$\underline{ }$$

$$0 \quad - 50b = - 40156.45$$

$$\text{Or, } b = 803.13$$

Substituting the value of 'b' in eqⁿ

(iv) we get,

$$5a + 15 \times 803.13 = 12229.84$$

$$\text{Or, } a = 182.89/5$$

$$\text{Or, } a = 36.58$$

Now, calculation of future day's PML trend

Substituting the value of 'a' & 'b' in eqⁿ (i) we get,

$$y = a + bx$$

$$y_{2009/10} = 36.58 + 803.13 \times 6$$

$$= 4855.36$$

$$y_{2010/11} = 36.58 + 803.13 \times 7$$

$$= 5658.49$$

$$y_{2011/12} = 36.58 + 803.13 \times 8$$

$$= 6461.62$$

$$y_{2012/13} = 36.58 + 803.13 \times 9$$

$$= 7264.75$$

$$y_{2013/14} = 36.58 + 803.13 \times 10$$

$$= 8067.88$$

APPENDIX - IX

Calculation of IPML trend of NABIL bank for next 5 years

(Rs. in million)

Fiscal Year	Year duration (x)	IPML (y)	x ²	xy
2004/05	1	94.65	1.00	94.65
2005/06	2	162.70	4.00	325.40
2006/07	3	260.92	9.00	782.76
2007/08	4	465.91	16.00	1863.64
2008/09	5	869.00	25.00	4345.00
N = 5	x = 15	y = 1853.18	x ² = 55	xy = 7411.45

We have,

$$\begin{aligned}
 y &= a + bx & (i) & \text{From eq}^n \text{ (iv) and (v)} \\
 y &= Na + b x & (ii) & 5a + 15b = 1853.18 \quad (iv) \times 15 \\
 xy &= a x + b x^2 & (iii) & \underline{15a + 55b = 7411.45} \quad (v) \times 5
 \end{aligned}$$

From eqⁿ (ii) we get,

$$y = Na + b x \quad (ii) \quad \begin{array}{r} 75a + 225b = 27797.70 \\ 75a + 275b = 37057.25 \\ \hline 0 \quad - 50b = - 9259.55 \end{array}$$

Or, $1853.18 = 5a + b \times 15$

Or, $5a + 15b = 1853.18 \quad (iv)$

From eqⁿ (iii) we get $Or, b = 185.19$

Substituting the value of 'b' in eqⁿ (iv) we get,

Or, $7411.45 = a \times 15 + b \times 55$ $5a + 15 \times 185.19 = 1853.18$

Or, $15a + 55b = 7411.45 \quad (v)$ $Or, a = -924.67/5$

$Or, a = - 184.93$

Now, calculation of future day's IPML trend

Substituting the value of 'a' & 'b' in eqⁿ (i) we get,

$y = a + bx$

$y_{2009/10} = -184.93 + 185.19 \times 6$

$= 926.21$

$$y_{2010/11} = -184.93 + 185.19 \times 7$$

$$= 1111.40$$

$$y_{2011/12} = -184.93 + 185.19 \times 8$$

$$= 1296.59$$

$$y_{2012/13} = -184.93 + 185.19 \times 9$$

$$= 1481.78$$

$$y_{2013/14} = -184.93 + 185.19 \times 10$$

$$= 1666.97$$

Calculation of IPML trend of EBL for next 5 years

(Rs. in million)

Fiscal Year	Year duration (x)	IPML (y)	x^2	xy
2004/05	1	59.12	1.00	59.12
2005/06	2	109.52	4.00	219.04
2006/07	3	207.36	9.00	622.08
2007/08	4	286.22	16.00	1144.88
2008/09	5	681.71	25.00	3408.55
N = 5	x = 15	y = 1343.93	x ² = 55	xy = 5453.67

We have,

$$y = a + bx \quad (i)$$

$$y = Na + b x \quad (ii)$$

$$xy = a x + b x^2 \quad (iii)$$

From eqⁿ (iv) and (v)

$$5a + 15b = 1343.93 \quad (iv) \times 15$$

$$\underline{15a + 55b = 5453.67} \quad (v) \times 5$$

From eqⁿ (ii) we get,

$$y = Na + b x \quad (ii)$$

$$\text{Or, } 1343.93 = 5a + b \times 15$$

$$\text{Or, } 5a + 15b = 1343.93 \quad (iv)$$

From eqⁿ (iii) we get

$$xy = a x + b x^2$$

(iii)

$$\text{Or, } 5453.67 = a \times 15 + b \times 55$$

$$75a + 225b = 20158.95$$

$$75a + 275b = 27268.35$$

$$\underline{\quad - \quad - \quad - \quad - \quad -}$$

$$0 \quad - 50b = -7109.40$$

$$\text{Or, } b = 142.19$$

Substituting the value of 'b' in eqⁿ (iv) we get,

$$5a + 15 \times 142.19 = 1343.93$$

$$\text{Or, } 15a + 55b = 5453.67 \quad (\text{v}) \quad \text{Or, } a = -788.89/5$$

$$\text{Or, } a = -157.78$$

Now, calculation of future day's IPML trend

Substituting the value of 'a' & 'b' in eqⁿ (i) we get,

$$y = a + bx$$

$$y_{2009/10} = -157.78 + 142.19 \times 6 \\ = 695.36$$

$$y_{2010/11} = -157.78 + 142.19 \times 7 \\ = 837.55$$

$$y_{2011/12} = -157.78 + 142.19 \times 8 \\ = 979.74$$

$$y_{2012/13} = -157.78 + 142.19 \times 9 \\ = 1121.93$$

$$y_{2013/14} = -157.78 + 142.19 \times 10 \\ = 1264.12$$

Calculation of IPML trend of HBL for next 5 years

(Rs. in million)

Fiscal Year	Year duration (x)	IPML (y)	x ²	xy
2004/05	1	107.24	1.00	107.24
2005/06	2	164.83	4.00	329.66
2006/07	3	232.07	9.00	696.21
2007/08	4	295.98	16.00	1183.92
2008/09	5	515.22	25.00	2576.10
N = 5	x = 15	y = 1315.34	x ² = 55	xy = 4893.13

We have,

$$y = a + bx \quad (\text{i})$$

$$y = Na + b x \quad (\text{ii})$$

$$xy = a x + b x^2 \quad (\text{iii})$$

$$\text{Or, } 4893.13 = a \times 15 + b \times 55$$

$$\text{Or, } 15a + 55b = 4893.13 \quad (\text{v})$$

From eqⁿ (iv) and (v)

$$5a + 15b = 1315.34 \quad (\text{iv}) \times 15$$

From eqⁿ (ii) we get,

$$\underline{15a + 55b = 4893.13 \quad (\text{v}) \times 5}$$

$$\begin{array}{rcl}
 y = Na + b x & \text{(ii)} & 75a + 225b = 19730.10 \\
 \text{Or, } 1315.34 = 5a + b \times 15 & & 75a + 275b = 24465.65 \\
 \text{Or, } 5a + 15b = 1315.34 & \text{(iv)} & \underline{\quad - \quad - \quad -} \\
 \text{From eq}^n \text{ (iii) we get} & & 0 \quad - 50b = -4735.55 \\
 xy = a x + a x^2 & & \\
 \text{(iii)} & &
 \end{array}$$

Or, $b = 94.711$

Substituting the value of 'b' in eqⁿ (iv) we get,

$$5a + 15 \times 94.711 = 1315.34$$

Or, $a = 105.325/5$

Or, $a = -21.065$

Now, calculation of future day's IPML trend

Substituting the value of 'a' & 'b' in eqⁿ (i) we get,

$$y = a + bx$$

$$\begin{aligned}
 y_{2009/10} &= -21.065 + 94.711 \times 6 \\
 &= 547.20
 \end{aligned}$$

$$\begin{aligned}
 y_{2010/11} &= -21.065 + 94.711 \times 7 \\
 &= 641.91
 \end{aligned}$$

$$\begin{aligned}
 y_{2011/12} &= -21.065 + 94.711 \times 8 \\
 &= 736.62
 \end{aligned}$$

$$\begin{aligned}
 y_{2012/13} &= -21.065 + 94.711 \times 9 \\
 &= 831.33
 \end{aligned}$$

$$\begin{aligned}
 y_{2013/14} &= -21.065 + 94.711 \times 10 \\
 &= 926.05
 \end{aligned}$$

Appendix – X

Calculation of PML to TD ratio for Hypothesis

(Rs. in million)

Year	NABIL			EBL			HBL		
	PML	TD	PML to TD ratio	PML	TD	PML to TD ratio	PML	TD	PML to TD ratio
2004/05	1032.15	14586.61	0.07	647.59	10097.69	0.06	1118.21	24814.01	0.05
2005/06	1599.81	19347.40	0.08	1108.53	13802.44	0.08	1565.29	26490.85	0.06
2006/07	2445.35	23342.29	0.10	2055.08	18186.25	0.11	2158.75	30048.42	0.07
2007/08	4266.60	31915.05	0.13	3667.82	23976.30	0.15	2942.18	31842.79	0.09
2008/09	6996.81	37348.26	0.19	6353.32	33322.95	0.19	4445.41	34681.35	0.13

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