

Investment Policy of Commercial Banks in Nepal

(A comparative study of Agriculture Development Bank,
Nepal Bangladesh Bank Ltd. & Himalayan Bank Ltd.)

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RECOMMENDATION

This is to certify that the thesis submitted by **Mr. Sanjay Kumar Shrestha** entitled **“Investment policy of Commercial Banks in Nepal (A comparative study of Agriculture Development Bank, Nepal Bangladesh Bank Ltd. & Himalayan Bank Ltd.)”** has been prepared as approved in the prescribed format of the Faculty of Management. This thesis is forwarded to Examination Committee for its evaluation and acceptance.

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DECLARATION

I hereby declare that the work reported in thesis entitled **“Investment policy of Commercial Banks in Nepal (A comparative study of Agriculture Development Bank, Nepal Bangladesh Bank Ltd. & Himalayan Bank Ltd.)”** submitted to Office of the Dean, Faculty of Management, Tribhuvan University, is my original work done in the form of partial fulfillment of requirement for the Master’s Degree in Business Study (M.B.S.) under the supervision of Prof. Dr. Kamal Das Manandhar and Mr. Kiran Thapa of Shanker Dev Campus.

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ABBREVIATIONS

ABBS	=	Any Branch Banking Service
ADB	=	Agriculture Development Bank Nepal
ATM	=	Automated Teller Machine
B.S.	=	Bikram Sambat
BAFIA	=	Banks and Financial Institutions Act
CB	=	Commercial Bank
CV	=	Coefficient of Variation
FY	=	Fiscal Year
GDP	=	Gross Domestic Product
GoN	=	Government of Nepal
Govt.	=	Government
HBL	=	Himalayan Bank Limited
JVBs	=	Joint Venture Banks
NBL	=	Nepal Bank Ltd.
NBBL	=	Nepal Bangladesh Bank Ltd.
NGO	=	Non Government Organizations
NIDC	=	Nepal Industrial Development Corporation
No.	=	Number
NRB	=	Nepal Rastra Bank
RBB	=	Rastra Banijya Bank
ROE	=	Return on Equity
Rs.	=	Nepalese Rupees
SD	=	Standard Deviation
T.U.	=	Tribhuvan University
US	=	United States

CHAPTER I

INTRODUCTION

1.1. Historical background of banking in Nepal

Nepal is ranked one of the poorest countries in the world which has yearly per capita income GDP of US \$ 470 and GDP growth rate of 5.6 percent & population growth rate 2.27 percent. As per the World Development Indicators Database of World Bank, on the basis of GDP, Nepal is at the 113th position (US Dollars 12,615 Million). However on the basis of GNI per capita, Nepal is ranked at 195th on Atlas Method (US Dollars 400 per capita) and 193th on Purchasing Power Parity Method (International Dollars 1120 per capita).

The development of country is always measured by its economic indices. Nepalese economy is distinctly different in its character from the regional economies. The Nepalese Economy is characterized by poverty, less developed geographical situation, technological backwardness, land-locked and dominated by two large economies India and China, etc. Most of the population of the country live in rural areas, where there is no access of banking facilities. From the beginning of the 1970 A.D. some programs were introduced focused to poverty alleviation but did not achieve significant result in that purpose. Still 38 percent population is under poverty line & targeted 32 percent by the end of the 10th plan.

Nepal is one of the agro-based economy countries. In order to develop country rapidly the industrial sector must be developed. Hence investment on both agriculture & industrial sector is needed. To make investment, savings must be collected from the different masses. For this purpose various banks & financial institutions are established on different sector like commercial, industrial, and development etc. on both urban and remote areas. They collect deposits from different sectors and make huge amount, then invest in various sectors.

The established financial system in Nepal has more history than other countries of the world. In Nepal, the introduction of modern banking activities and system had been traced back to the year 1937 when the Nepal Bank Act 1937 was first promulgated, during the period of Rana Prime Minister Juddha Samsher. A Govt. institution called 'Tejarath Adda,' at the period of Ranodip singh who is called the father of modern banking, was established. The

Tejarath Adda helped the public by provided credit at 5 percent interest rate on the security of gold and silver ornaments and mobilized the resources.

At the developing process of financial institution to help the growing economic activities the need of Banking has been increasingly realized and established a system. In 1994 B.S. the first bank of Nepal, Nepal bank limited was established as the central bank of Nepal except the work of issue of note. Similarly Nepal Rastra Bank was established as a central bank of Nepal in 2013 B.S. to regulate the banking management system of country. The second commercial bank is Rastriya Banijya Bank established in 2022 B.S. in full ownership of the Government of Nepal. Co-operative Bank (later renamed as Agriculture Development Bank) was established in 2024 B.S. for providing capital & technical assistance for the development of agriculture sector in Nepal. The Government of Nepal kept on liberalizing the economical policies; as a result various banks were established in public and private sector in joint venture of capital & support for the economic development of country.

After the liberalization of financial sector in mid eighties by the Government of Nepal, the number of private sector in collaboration with foreign partners invested in CBs. After the implementation of the liberal economic policy, foreign and private internal investment has increased and currently many banks have come into existence one after another. As a result, many CBs were established. As per latest data of NRB, the number of licensed financial institutions operating as at end of Ashad 2066 (Mid July 2009) are as follows.

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NGOs (Financial Intermediaries)	45
Total	242

For the purpose of this study, the following three banks are taken into consideration.

- 1) Agriculture Development Bank Ltd. (ADBN)
- 2) Nepal Bangladesh Bank Ltd. (NBBL)
- 3) Himalayan Bank Ltd. (HBL)

1.2. Profile of concerned banks

In this chapter it has been discussed about the profiles of concerned banks. These profiles are related to the establishment, objectives, development, capital structure, investment policy & sector and the facilities granted by the concerned banks.

1.2.1. Agriculture Development Bank Ltd. (ADBN)

➤ Establishment

Agriculture Development Bank, Nepal (ADBN) was established in 1968 under Agricultural Development Bank Act 1967 with the main objective of providing institutional credit for enhancing the production and productivity of the agricultural sector in the country. The bank inherited the assets and liabilities of the Co-operative Bank, which was previously established in 1963. In 1973 the Land Reform Savings Corporation, a similar institution established in 1966, was merged with the bank.

Agricultural Development Bank (ADBN) Act is an autonomous organization under the supervision of the Ministry of Finance of Government of Nepal, and the bank has been working as the premier rural credit institution since last three decades contributing substantially in meeting institutional credit needs in Nepal. AT present ADBN has been operating 86 banking offices in Nepal.

The enactment of Bank and Financial Institution Act (BAFIA) 2063 abolished all Acts related to financial institutions including the ADBN Act, 1967. In line with the BAFIA, ADBN has been incorporated as a public limited company on July 14, 2005. Thus, ADBN operates as "A" category financial Institution under the legal framework of BAFIA 2063 and the Company Act, 2063.

➤ Objective

Under the ADBN Act, the bank is entrusted with the responsibilities of initiating effective approaches for the development of agriculture. The bank is committed to raise the economic condition of farmers by availing credit and capital inputs in easy and smooth manner.

The subsequent amendments of the act empowered the bank to finance small farmers on group liability and expand its scope of financing to promote cottage industries. The

amendments of BAFIA also permitted the bank to engage in Banking activities for the mobilization of domestic resources.

The objective of the banks has been defined as

- To provide quality banking and financial services to clients adopting market driven strategy delivering sustained and competitive return on investment.

➤ **Functions**

The main functions of the bank are to

- Provide short, medium and long term agricultural loans to individual farmers, group of farmers, corporate bodies and village committees.
- Provide loans and technical services for the purchase of inputs and capital items such as fertilizers, insecticides, feed, farm machinery, irrigation equipment, canal construction, boring of pump-sets and sprinklers.
- Provide loans for the purchase of livestock.
- Finance for cottage small-scale industries.
- Finance for cold store, warehousing and other marketing facilities.
- Finance for the capital goods necessary for the development of alternative sources of energy.
- Supervise small farmers Development programme to uplift the socio-economic status of small farmers.
- Undertake banking function to generate resources.
- Provide training to the beneficiaries and the bank staff.

➤ **Present capital structure of ADBN**

- Authorized capital: Rs. 12,000 million
- Issued Capital: Rs. 11,200 million
- Paid up capital Rs. 10,777.5 million

➤ **Facilities granted by ADBN**

ADBN facilitate providing loan for various sector as term of time and also services of banking activities:

- Food crops loan for 12 months more.
- Cash crops loan for 18 months more
- Special crops loan for 24 months more
- Marketing of agro-material & agricultural products loan for 12 months more
- Agricultural machinery loan for 3 to 4 years
- Irrigation loan for 5 years
- Biogas loan for 3 to 5 years
- Purchase of tenant land, residence & land develop loan for 2 to 10 years
- Agriculture & small- scale cottage industry loan for 1 to 5 years
- Cold storage & warehousing loan for up to 10 years
- Live stock loan for 2 to 5 years
- Non-agricultural loan for up to 2 years

In order to generate its resources for the bank's ever expanding lending programme, the bank started banking activities since 1984. Now-a-days ADB also provide following facilities for banking services:

- Accept deposit from different accounts like: saving; current & fixed deposit
- Provide guarantee for safe & give interest as banking policy
- Tele-banking facilities like faxing system and other banking facilities.
- Remittance services

1.2.2. Nepal Bangladesh Bank Limited (NBBL)

➤ **Establishment, Objective & Function**

Nepal Bangladesh Bank Limited (NBBL), a joint venture bank with I.F.I.C. Bank Ltd .of Bangladesh, was established 1993 under the Company Act, 1964. The main objective of the bank is to carry out Banking activities under the Bank Act, 1974.

At present I.F.I.C and Bank Asia Ltd. hold 9.92% and 14.88% of the total paid up capital of the Bank. I.F.I.C. Bank Ltd., Bangladesh manages the Bank in accordance within the venture and technical services agreement between it and Nepali promoters I.F.I.C. has 50% share capital, Nepali promoters have 20% share and the public shareholders have 30%share capital. The bank has altogether 17 branches with four branches in capital.

On 2063/7/26, NBBL was declared by NRB in the crucial stage and the Board of Directors was suspended under section 86C (1) of NRB Act. Since then NRB had taken in control the management of NBBL. Recently on Poush 29, 2066 Annual general Meeting (AGM) of the shareholders was held and the management of NBBL has been handed over to the new Board of Management appointed by the AGM of NBBL.

➤ **Present capital structure of NBBL**

- Authorized equity capital: Rs. 3,000 million
- Issued equity capital: Rs. 2,000 million
- Paid up equity capital: Rs. 1,860.3 million

➤ **Facilities granting by NBBL**

The following facilities are provided by the bank:

- Working Capital Loan, term loan, demand loan
- Trade finances
- Letter of Credit
- Consortium loan
- Customer Banking: (Hire purchase loan; Educational loan; Housing loan.)
- International Traders and Bank Guarantee
- Remittances services
- Locker facilities
- Credit card and ATM facilities
- ABBS (Any Branch Banking system)
- SMS banking

1.2.3. Himalayan Bank Ltd. (HBL)

➤ Introduction:

Himalayan Bank limited (HBL), a joint venture bank with Habib Bank Ltd. Pakistan was established 1992, under the company Act 1964. The main objective of the bank is to carry out the Bank activities under the Bank Act 1974. Habib Bank Ltd. Pakistan owns 20% share capital, Nepali promoters have 80% share capital. The bank has altogether 23 branches at present.

➤ Present capital structure of the HBL

- Authorized equity capital Rs. 2,000 million
- Issued equity capital Rs. 1,216.2 million
- Paid up equity capital Rs. 1,216.2 million

➤ Facilities granting by the HBL

The following facilities are provided by the bank:

- Small and medium enterprises loan
- Corporate loan (Working Capital Loan, term loan, demand loan revolving cash credit, TR loan, etc.)
- Bills discount and purchase
- Trade finances
- Letter of Credit
- Consortium loan
- Customer Banking: (Hire purchase loan; Educational loan; Housing loan.)
- International Traders and Bank Guarantee
- Remittances services (Himal Remit)
- Locker facilities
- Credit card and ATM facilities
- ABBS (Any Branch Banking system)
- SMS banking and internet banking

1.3. Focus of the study

The main focus of the study is to highlight the investment policies of joint venture banks and Agriculture Development Bank expecting that the study can bridge the gap between deposits and investment policies. On the other hand the study would provide information to the management of the banks that would help them to collective action.

1.4. Statement of the problem

In Nepal after the economic liberalization many joint venture banks have emerged.

Currently establishment of joint venture banks in various numbers have drastically made changes over the financial system of Nepal. Though the flow of money in the market is high still they are not fully utilized in absence of better investible project. Increasing trend of banking institution brought into existence of such idle moneys utilization to a great extent. Most of the existing CBs are making profit and has been satisfying their shareholders. Thus this has attracted the potential customers to power their money into banks, as there are very few sectors to make a profitable investment and the potential investors are always reluctant to risk. That is the reason, CBs have a lot of deposits but very low interest rate and minimum threshold balance. Lack of sound investment policy is another reason for a CB not to properly utilizing its deposits that is making loan and advances or lending for a profitable project. Existence of this kind of condition will lead the CB to the position liquidation. They are facing much difficulty in mobilizing their deposits on the profitable investment which leads them to achieve not sufficient return from the investment and satisfy their shareholders.

Agricultural Development Nepal was established in 1968 with the name of Co-operative Bank Ltd. At present it has numerous branches operating even in the rural parts of the country. It has utilized its fund in providing loans and advances to agriculturists and poor people to help in uplifting their living standard by developing agriculture sector. Before some years it has started to collect deposits from the people and extend its scope of work some what in comparison with other CB.

In the study ADBN's investment policy is analyzed comparing it with other two joint venture banks; Himalayan Bank Ltd. and Nepal Bangladesh Bank Ltd. Therefore the study surrounds and deals with the following aspects of these banks:-

- Relationship between investment and loans and advances with total deposits and total net profit.
- Effectiveness of fund mobilization and applied investment policy.
- Effect of the investment decision to the total earning of the bank.
- Proper utilization of the available fund.

1.5. Objectives of this study

The main focus of this study is to analyze investment policy of ADBN in comparison to NBBL & HBL. Other specific objectives are as follows:

- To analyze the investment policy of these banks
- To examine the investment priority of ADBN, NBBL and HBL
- To analyze and evaluate the financial position
- To provide suggestions & recommendation

1.6. Importance of the study

It is fact that the banks affect the economic condition of whole country. In the absence of study and research it is difficult to know what the exact economic condition is and how to take decision about it.

For provided exact information & data to concern institution, bank, shareholders, and persons and also get information for take decision for various ways. In conclusion the importance of the study focuses at following points:

- It will be helpful to concern financial institutions
- It will be valuable property for decision making
- It provides various information & data to required persons, readers, shareholders, decision-makers, traders, investors, economic planners etc.
- By the above points it helps to study all economic condition of nation.

1.7. Limitation of the study

Although this research will be helpful to know the economic condition of nation but it is not covered whole sector due to lack of resources, finance, & time constraints etc. it has covered

mini data of only investment policy of concern bank. Absence of current data, information & other required resources it can't fulfill every aspects of country. Generally the limitation of this study is as follows:

- For completion the study the researcher has the boundary of limit time
- Required data & information may not be able to be collected from different sources due to lack of resources. The financial statements of ADBN have not been published for some years. These data have to be collected from secondary sources.
- The research is based on the data obtained covering the period of five years only.
- Out of various banks & finance institutions the study is based upon only three banks. The result may differ if the study covers some more banks in the sample.

1.8. Chapter plan

The whole study report is divided into six chapters. The chapters are divided to the following aspects:

First chapter explains with introduction, which includes:

- 1.1 Background
- 1.2 Profile of concern bank
- 1.3 Focus of the study
- 1.4 Statement of the problem
- 1.5 Objective of the study
- 1.6 Importance of the study
- 1.7 Limitation of the study
- 1.8 Chapter plan of the study

Second chapter explains review of literature which includes:

- 2.1 Concept
- 2.2 Characteristics of Investment policy
 - 2.2.1 Liquidity
 - 2.2.2 Profitability
 - 2.2.3 Safety and security

- 2.2.4 Suitability
- 2.2.5 Dispersal
- 2.3 Review of Books
- 2.4 Review of article
- 2.5 Review of thesis
- 2.6 Review of legislative provisions.

Third chapter explains research methodology which includes:

- 3.1 Introduction
- 3.2 Research design
- 3.3 Sources of data
- 3.4 Population & sample
- 3.5 Method of analysis

Fourth chapter is the analyzing chapter concerned with the analysis of different financial ratios and statistical tools related to the analysis of investment policy of the banks.

Fifth chapter associates with the main findings, recommendations & suggestions.

The bibliography & appendices and other reference materials are included in the **sixth chapter**.

CHAPTER II

REVIEW OF LITRETURE

In this chapter it has been discussed on the matters related to the investment policy. This chapter summarizes the review of those books, reports, articles, thesis, and relevant research papers, legislative provisions etc. which had already been explained. Every study is based on past knowledge which gives the knowledge on different subject matters it provides foundation to the present study. Therefore, this chapter has its own importance in this study. The present chapter is categorized into following parts:

- 2.1 Concept
- 2.2 Characteristics of investment policy
- 2.3 Review of books
- 2.4 Review of articles
- 2.5 Review of thesis
- 2.6 Review of Legislative provisions

2.1 Concept

The banks are such types of institutions. It receives unused capital from different sources and giving loans against securities. They provide working capital needs to trade, industry and even to agricultural sectors. It provides also technical and administrative existence to industries, traders and business enterprises.

According to new Encyclopedia Britannia, 1985, vol.14, “Banker is a dealer in money, such as cheque or bill of exchange. He also provides a variety of financial services.”

According to the Encyclopedia American 1984,vol.3 “A bank is a business organization that receives and holds deposits of funds from others, makes loans or extends credits and transfer funds by written order of depositors.”

According to Commercial Bank Act 2031 “A Bank is one which exchange money deposits money, accepts deposits, grants loans and performs Banking functions and which is not a

bank meant for co-operative, agriculture industries or for specific purpose.” Now all Acts related to banks & financial institution except NRB Act have been merged under ‘Bank and Financial Institution Act, 2063’ where Banks means a corporate body established to conduct financial transactions as mentioned under:

- Accept and payment of deposits with or without of interest and refund such deposits.
- Provide loan under the provision of NRB
- Perform foreign exchange transaction under the provision of Law
- Provide loan for hire purchase, hypothecation, leasing, and housing
- Perform Merchant banking transaction under the directing of NRB
- Provide loan with security of bank of internal or external
- Issue, accept, payment, discounting and marketing of Letter of credit, Bill of exchange, cheque, Travelers cheque, Draft or other financial instruments
- Accept deposits, make payments and transfer of amount under the rule granting by NRB with the use of electronic equipment like telephone, telex, fax, computer or magnetic tape
- Issuing, Accepting, of credit card, debit card & charge card under the rules accordance by NRB
- Accept deposits, paid loan and make payments under the automated Taylor machine and cash dispensing machine
- Provide overdraft loan
- Perform Govt. and other transactions under the rules granting by NRB as appointed agent of GoN
- Marketing of debentures issued by GoN or NRB
- Provide safe deposit vault
- Provide loan security of individual or group promise for economic development of poorest class, lower income class, victims of natural disaster
- Perform other works as per the rules of NRB.

2.2 Characteristics of good investment policy:

There are some of the main characteristics of good investment policy, which are as follows:

2.2.1 Liquidity:

Liquidity refers to the capacity of the bank to pay cash against deposits. Having confidence that the bank will repay their money whenever it is needed people deposits money at the bank in different accounts. In order to maintain the confidence to the depositors, bank must be prepared with sufficient degree of liquidity of its assets. Once the confidence is lost in view of depositors, they may withdraw all their deposits within a brief period without giving any chance the bank to manage. So, to maintain the confidence of the depositors, the bank must keep this point while investing its excess fund in different securities or at the time of investing as that it can meet the readily demands for cash made by customers.

2.2.2 Profitability:

Bank should invest their fund where they earn maximum profit. Banks build up their capital by accepting deposits from depositors and issuing share and debenture to shareholders who receive interest and dividend. The profit of banks mainly depends on the interest rate, volume of loan, time period and nature of investment in different securities.

2.2.3 Safety and security:

Banks should always consider the safety of the money of the deposit holders and the public, as well as of the shareholders and other equity holders. While investing its funds the bank should recognize those persons who are speculative businessman, who may be bankrupt at once and who may earn million in a minute also. The bank must not finance its fund to those people at all. Only commercial, durable, marketable and high market valued securities should be accepted. The bank should never invest its fund in those securities that are too volatile since a little difference may cause the great loss.

2.2.4 Suitability:

Bank should know that why a customer needs loan or it is for appropriate purpose or not. If the borrower misuse the loan granted by bank, he will never to be able to repay the loan which posses' heavy bad debts to bank. In order to avoid such situation advances should be allowed to selected and suitable borrowers and necessary all detailed information about the

scheme of project or activities should be demanded and it should be examined before investing. Therefore suitability is the important factors for investment.

2.2.5 Diversification:

There is a saying “Don’t put all the eggs in the single basket.” Banks should introduce a sufficient variety of services. A proper and planned diversification of services and products always provide a ground for minimum effect of a failure of some specific product or services. If the services are properly diversified, the loss from the failure of one product or service would be compensated by the success of some other product or services. This can minimize the loss. So, in order to minimize risk a bank must diversify its investment on different sectors. Banks should not concentrate on a single client or sector or service.

2.3 Review of books

According to William J. Sharp and Alexander J. Gordon “Investment in the board sense, means the sacrifice of current dollars. Two different attributes are generally involved: time & risk. The sacrifice takes place in the present and is certain. The reward comes later, and the magnitude is generally uncertain. In some cases the element of time predominates (for example, Govt. bond). In other cases risk is the dominant attribute (for example call option on common stock). Yet both time and risk are important.”

Cheney and Moses said “the investment objective is to increase systematically the individual wealth, defined as assets minus liabilities. The higher the level of desired wealth the higher must be received. An investor seeking higher return must be willing to face level of risk”.

Charles P.Jones has defined that "Investment as the commitment of funds to one or more assets that will be held over some future time period. Investment is concerted with the management of an investor's wealth, which is the sum of current income and present value of all income”

Francis has defined that "Investing involves making a current commitment of funds in to obtain an uncertain future return. It is a risky business that demands information. To process information effectively and select the best investments requires goals that are clear-cut and realistic."(Francis, 1988).

Preeti Singh defined investment in this way "Investment is the employment of funds with the aim of achieving additional income or growth in value. The essential quality of an investment is that it involves "waiting" for a reward. It involves the commitment of resources, which have been saved or put away from current consumption in the hope that some benefits will accrue in future."(Singh, 1991).

In this way it is clear that an investment means to trade a known rupee amount today for some expected future stream of payments or benefits that will exceed the current outlay by an amount that will exceed the current outlay by an amount that will compensate the investor for the time the funds are committed for the expected changes of prices during the period and for the uncertainty involved in expected future cash flow. Thus investment is the most important function of banks. It is long-term commitment of banks in the uncertain and risky atmosphere. It is very challenging task for any banks. So a bank has to be take pre-caution while investing their funds in various sectors.

2.4 Review of articles

Dr. Govinda Bahadur Thapa has expressed his views in his article "Financial system of Nepal" (Thapa, 1994,) that the Banks including foreign joint venture banks seem to be doing pretty well in mobilizing deposits. Similarly, loans and advances of these banks are also increasing. But compared to the huge credit needs particularly by the newly emerging industries, the banks still seem to lack adequate funds. The banks are increasing their lending to non-traditional sectors along with the traditional sectors.

Banks (NBL and RBB) are operating with a nominal profit, the later turning towards negative from time to time. Because of non-recovery of accrued interest, the margin between interest income and interest expenses is declining. Because of concentration of these two local banks, in traditional off-balance sheet operation, these banks have not been able to increase their income from commission and discount. On the contrary, they have got heavy burden of personnel and administrative overheads. Accumulated overdue and defaulting loans, have also added to effect profit position of these banks. But, the foreign joint venture banks have been functioning in an extremely efficient way. They are success in making a big amount of profits yearly and also success to distribute large amount of bonus and dividends to its employee's and shareholders. Because of their effective persuasion for loan recovery,

overdue and defaulting loans have been limited resulting in high margin between interest income and interest expenses.

Sunity Shrestha in her article "leading operation of Banks of Nepal and its impact on GDP" (Shrestha, 2055,) has presented with the objectives to make or analysis of contribution of Banks lending to the Gross Domestic Product (GDP) of Nepal. She has set hypothesis that there has been positive impact of lending of Banks to the GDP. In research methodology, she has considered GDP as the dependent variable and various sectors of lending viz. agriculture, industrial, commercial, service and general and social sector as independent variables. A multiple regression technique has been applied to analyze the contribution.

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

Mr. Shiva Raj Shrestha in his article, "Portfolio Management in Bank Theory and Practices" (Shrestha, 1998,) has highlighted the following issues

In case of investors having lower income, portfolio management may be limited to small saving incomes. But, on the other hand, portfolio management means to invest funds in various schemes of mutual funds like deposits, shares and debentures for the investors with surplus income. Therefore, portfolio management becomes very important both for individuals as well as institutional investors. Large investors would like to select a best mix of investment assets subject to the following aspects:

- Higher return which is comparable with alternative opportunities available according to the risk class of investors.
- Good liquidity with adequate safety of investor.
- Certain capital gains.
- Maximum tax concession.
- Flexible investment.
- Economic efficient and efficient investment mix.

In the view of these aspects, investors are expected to develop following strategy;

- Do not hold any single security. Try to have a portfolio of different securities
- Do not put all the eggs in one basket.
- Choose such a portfolio of securities that ensure maximum return with minimum risk or lower of return but with added objective of wealth maximization.

In this regard the portfolio management becomes very important both for individuals as well as institutional individuals.

The portfolio structure depends upon client's need, market conditions and banks own expertise sometimes the banks themselves float various financial instruments and invite clients to subscribe.

These instruments could be of many types viz: open ended, close ended, interest income generating or capital appreciation or a combination of both. However, following approach may be adopted for designing a good portfolio and its management:

1. To find out the investible assets (generally securities) having scope for better return depending upon individual characteristics like age, health, need, disposition, liquidity, tax, liability etc.
2. To find out the risk of securities depending upon the risk of securities depending upon the attitude of the investor towards risk.
3. To develop alternative investment strategies for selecting a better portfolio which will ensure a trade-off between risk, and return so as to attain the primary objective of wealth maximization at lowest risk?
4. To identify variety of securities for investment to refuse volatility of returns and risk.

By and large, portfolio management considered in the context of selecting following securities:

1. Equity
2. Debenture and Bonds
3. Other money and capital market instrument.

But the bank having international network can also offer access to global financial for equities, debentures and bonds. On the other hand, the wealthy clients go for customized

portfolio management, where detailed discussions take place between bank and client for evolving proper guidelines.

Investment analysis for the selection of equity shares could be done with the help of either fundamental analysis or Technical Analysis. He also has suggested that in order to get success in portfolio management and customer's confidence the bank should possess skilled manpower and strong research and analysis team and proper management information system.

Besides Mr. Bodhi B. Bajracharya in his article "Monetary policy and Deposit mobilization in Nepal" (Bajracharya, 1990) has mentioned that mobilization of domestic saving is one of the prime objectives of the monetary policy in Nepal and Banks and the most active financial intermediary for generating resources in the form of deposit of private sector and providing credit to the investor in different sectors of the economy.

Likewise, Mr. K. Pradhan, in his article "Nepalma Banijya Bank – Upalabdhi tatha Chunauti" (Pradhan, 1991,) concluded some major issue in local Banks in comparison of recently established joint venture banks. The study deals with the whole Banking system of Nepal in respect of their performance and profitability. Some of his finding relevant to this study is given as:

- The deposit collection rate of local banks is very poor in comparisons to joint venture banks.
- The patterns of deposit are also different between these banks. The ratio of current deposit in local banks is 9.34% only where the same as the joint venture banks is 52.5%. But the fixed deposit ratio is very high in local banks.

Mr. Bhagat Bista in his article "Issues in banking reform"(Bista, 2001), the Banks are main vehicles in transferring currency from one country to another. Banks deal heavily in foreign exchange transactions.

Mr. Pravakar Ghimire has mentioned in his article "Banijya Bankharu Prathamikta Chhetrama lagani garna bhanda harjana tirma tayar." (Ghimire, 1999) that most of Banks of Nepal are ready to pay the penalty in spite of investing on rural, priority sector, poverty stricken and deprived areas. In the directives of NRB it is clearly mentioned and directed that all the Banks (under

NRB) should invest 12% of its total investments to the priority sectors. Out of this 12%, they should invest 3% to the lower level class of countrymen. However, these Banks are unable to meet the requirement of NRB.

In the light of above foreign joint venture banks use to justify that they don't have any network among these priority areas. If investment will be made in these areas, operation cost will be very high and the cost exceeds the penalty if investment is not made in the sector. That is why they are interested in paying penalty than investing in priority sectors.

In the light of this controversial situation, the member of National Planning Commission and former Governor of NRB Mr. Hari Shanker Tripathi added that investing on priority sectors means taking the risk of loss because operation cost will be very high in comparison of profit. These joint venture banks don't have any branch network in these areas and performing duties through limited personnel are the main reasons of this" controversial situation. He, further, added that government doesn't expect that these joint venture banks will invest in priority sectors because they are interested to pay penalty due to the above mentioned reasons.

2.5 Review of theses

Mr. Panta U.R. (2033) in his thesis paper, "A study of Banks Deposits and its utilization" has tried to make an attempt to highlight the discrepancy between resource collection and its utilization. He concluded that, due to their lending confined for short-term only, Banks are failure in resource utilization. So, he recommended that Banks should give emphasis on long term lending too, for sound utilization of the deposits.

Mrs. Bhattarai R. (1978) in her thesis paper, "Lending policy of Banks in Nepal" has tried to examine the lending policy of Banks in Nepal, She has concluded that efficient utilization of resources is more important than collection of the same. Lower investment means lower capital formation that hampers economic development of the people and the country too. So, she has suggested that banks should give emphasis on efficient utilization of resources.

Miss Ojha (1997) in her thesis paper: A study on priority sector investment in Banks (with special reference to RBB)" has mentioned that the banks are unable to meet the requirement of 12 percent lending in priority sectors as set under NRB directives. As her 5 years' study

period she has further found that there was low interest rate in priority sector but increasing trend of overdue and its misutilization. She has pointed out as main recommendation of the research to give more emphasis on the improvement of sound supervision, evaluation of borrower's paying capacity and reduction of overdue through integrated program of priority sector loan.

Mr. Pradhan N.M. (1980) in his thesis, "A study on Investment policy of Nepal Bank Ltd." has concluded that sound relationship should be maintained between deposits and loan and advances. In his 6 years' period study i.e., from 1972 to 1977, he concluded that through loan and advances as well as deposits are increasing by the pace of each year, however their increase is not in a proportionate manner. Immense increase in the deposits had led to little increase in loans and advances. His recommendation was to grant the loan and advances without its lengthy process and also suggested for extending banking transaction towards rural sectors of the kingdom.

Mr. Khadka (1998) in his thesis, "A study on investment policy of NABIL Bank; in comparison to other joint venture banks of Nepal" has suggested the JVBs to be careful in increasing profit in real sense to maintain the confidence of shareholders depositors and customers. He has strongly recommended NABIL to utilize its risks assets and shareholders fund to gain highest profit margin and reduce its expenses and collect cheaper fund for more profitability. He has recommended investing its fund in different sectors of investment and administering various deposits schemes to collect fund such as cumulative deposit scheme etc. He has recommended that to be success in competitive banking environment, depositor's money should be utilized as loans and advances. Since, the target item of the bank in assets side is loan and advances, negligence in administering this asset could be the main course of a liquidity crisis in the bank and one of the main reasons of a bank failure.

2.6 Review of legislative provisions

Currently all the Banks in Nepal are bound to operate under 'Banks and Financial Institutions Act 2063'. The Act has classified all the banks and financial institutions in the four Categories: A, B, C and D. As per this classification ADBN, NBBL and HBL fall under 'A' class financial institution.

The Investment policies of Banks may be affected by the following relevant provisions which have been discussed as follows

2.6.1 Functions of banks:

Under Section 47 (1) of the BAFIA, 'A' class financial institutions can perform the following transactions:

- Accept and payment of deposits with or without of interest and refund such deposits.
- Provide loan under the provision of NRB
- Perform foreign exchange transaction under the provision of Law
- Provide loan for hire purchase, hypothecation, leasing, and housing
- Perform Merchant banking transaction under the directing of NRB
- Provide loan with security of bank of internal or external
- Issue, accept, payment, discounting and marketing of Letter of credit, Bill of exchange, cheque, Travelers cheque, Draft or other financial instruments
- Accept deposits, make payments and transfer of amount under the rule granting by NRB with the use of electronic equipment like telephone, telex, fax, computer or magnetic tape
- Issuing, Accepting, of credit card, debit card & charge card under the rules accordance by NRB
- Accept deposits, paid loan and make payments under the automated Taylor machine and cash dispensing machine
- Provide overdraft loan
- Perform Govt. and other transactions under the rules granting by NRB as appointed agent of GoN
- Marketing of debentures issued by GoN or NRB
- Provide safe deposit vault
- Provide loan security of individual or group promise for economic development of poorest class, lower income class, victims of natural disaster
- Perform other works under the rules of NRB.

2.6.2 Other provisions regarding investment of banks

Under Section 48 (1) a bank must not perform the following functions:

- Purchase or sell goods with commercial motives or purchase any immovable assets except when it is required to do so for its own use.
- Advance loan against the securities of its own Shares.
- Advance loan or provide any facility to promoters, Directors, person who have subscribed to one percent or more of its shares, the Executive Chief, or member of the family of the such persons, or firms, companies, or institutions entitled to appoint or nominate Directors.
- Advance loan or provide facility of any kind to any firm, company, or institutions in which any promoter, director person holding one percent or more of its share, the executive chief of any member of the family of any such person working as the director or managing agent or entitled to nominate a director or has any financial interest.
- Supply loan or provide facilities worth an amount exceeding one percent of its capital fund prescribed by NRB to a single person or firms or companies or partnerships belonging to single group.
- Supply loans against the personal Guarantee provided by the promoter, any Director, or Executive Chief.
- Invest in the Securities of Other financial institutions and Banks.
- Invest in the Share Capital of any other institutions in the amount exceeding the limit prescribed by NRB.

Under Section 50, it shall be the duty of Banks to comply with the Directives Issued by NRB from time to time in relation to banking or financial system, currency and credits. This implies that BAFIA has granted NRB the authority to control and monitor the investment policies of any Bank.

Under Section 51 (1), the rate of interest to be paid on the deposits and to be charged on the credits provided by banks shall be prescribed by NRB. However, the power to fix the interest rates may be delegated to the respective banks under Section 50 (2), if it so deems necessary.

2.6.3 NRB Directives regarding investment

NRB has been vested with the authority to issue directives regarding the investments of banks and financial institutions. These directives have direct and indirect impact on the investment policies of CBs also. Some important ones have been summarized as under

a) Investment in deprived sector:

According to the directives of NRB, all CBs should invest a certain percentage (at least 3%) of its total investment in the deprived sector organisations. This helps in the promotion of the deprived sector organisations.

b) Investment in productive sector

NRB has directed Banks to extend a certain percentage of their total credit to the productive sector. Productive sector includes Loans priority Sector, Agricultural Sector, Industrial Sectors.

c) Cash reserve requirement (CRR)

The quantum of liquidity in the Banks depends on the Cash Reserve Requirement fixed by NRB. With the increase in CRR, the liquidity in the banks decreases and vice versa. As per the latest directive issued by NRB, “A” class financial institutions should maintain in NRB 5.5% of its total deposit as CRR

d) Fixation of interest rate spread

Interest Rate Spread is the difference between the rate of interest charged on the credits provided by the banks and the rate of interest paid to the depositors. At present, “A” class financial institutions are free to determine the rate of interest to be provided to the depositors, as well as the rate of interest to be charged to the loans and advances. The details of rate of interest to be provided and to be charged should be provided to NRB within seven days of each quarter end or seven days from the date of any revision of the interest rate.

e) Investment in housing and real estate

Any licensed financial institution should not invest in real estate loan more than 25% of the total credit forwarded by the institution and combined investment in real estate loan and residential loan should not exceed 40% of the total credit forwarded by the institution.

Further financial institutions should limit the investment in real estate loan to 15% and 10% of the total credit by the end of Ashad 2067 and Ashad 2068 respectively. Similarly, financial institutions should limit the total investment in real estate loan and residential loan to 30% and 25% of the total credit by the end of Ashad 2067 and Ashad 2068 respectively.

f) Total loan and advances to deposit ratio

Total credit provided by a financial institution should not exceed 80% of the total of Domestic Deposits and Primary Capital of the institution.

Those financial institutions, which have exceeded the above limit before the implementation of the above directive, should limit the total credit to 95% by the end of Ashad 2067, 85% by the end of Ashad 2068 and finally 80% by the end of Poush 2068.

g) Statutory liquidity ratio

A-Class Financial institutions should invest in Govt. securities at least 6% of total domestic deposit by the end of Poush 2066. Further the ratio should be increased to 8% by the end of Ashad 2067.

CHAPTER III

RESEARCH METHODOLOGY

This chapter contains the discussed about the methods and processes that has been used for the study and analysis of the investment strategy of given Banks.

- 3.1. Introduction
- 3.2. Research design
- 3.3. Sources of data
- 3.4. Population & sample
- 3.5. Analysis of data

3.1 Introduction

This study basically helps us to conclude the real position of Agriculture Development Bank Ltd. (ADBN) and make a comparison with respect to two JVBs viz. Himalayan Bank Ltd. (HBL) & Nepal Bangladesh Bank Ltd. (NBBL) to accomplish the study following research methodology described in this chapter.

3.2 Research design:

A research design is the arrangement of conditions for collecting and analysis of data. It is the plan, structure, and strategy of investment from which answer of relating research question and to control variances are obtained.

The study is based on the descriptive and analytical research Design.

3.3 Sources of data:

In this study conducted on the basis of data collected from the respective banks and some secondary data. The data required for the analysis are directly obtained from the Balance Sheet and the Profit and Loss a/c of concerned banks' annual reports and relevant publications of NEPSE. Supplementary data and information are collected from number of institutions and authorities like NRB, security exchange board, Nepal Stock Exchange Ltd.,

Ministry of Finance, budget speech of different fiscal years, economic survey. All the secondary data are compiled, processed and tabulated in the time as per need and objectives.

3.4 Population and sample:

There are altogether 26 CBs functioning all over the kingdom and most of their stocks are traded actively in the stock market. The CBs licensed by NRB till the end of Ashad 2066 have been listed as follows.

Table 3.1: A- Class Financial institutions in Nepal

S.N.	Name of Bank	Established Date	Remark
1.	Nepal Bank Limited	1937	
2.	Rastriya Banijya Bank	1966	
3.	Nabil Bank Limited	1984	
4.	Nepal Investment Bank Limited	1986	
5.	Standard Chartered Bank Nepal Limited	1987	
6.	Himalayan Bank Limited	1993	
7.	Nepal SBI Bank Limited	1993	
8.	Nepal Bangladesh Bank Limited	1994	
9.	Everest Bank Limited	1994	
10.	Bank of Kathmandu Limited	1995	
11.	Nepal Credit and Commerce Bank Limited	1996	
12.	Lumbini Bank Limited	1998	
13.	Nepal Industrial and Commercial Bank Ltd.	1998	
14.	Machhapuchhre Bank Limited	2000	
15.	Kumari Bank Limited	2001	
16.	Laxmi Bank Limited	2002	
17.	Siddhartha Bank Limited	2002	
18.	Agriculture Development Bank	2006	Prior to the enactment of BAFIA, operated under ADBN Act
19.	Global Bank Limited	2007	
20.	Citizens Bank International Limited	2007	
21.	Prime Commercial Bank Limited	2007	
22.	Bank of Asia Nepal Limited	2007	
23.	Sunrise Bank Limited	2007	
24.	DCBL Bank Limited	2008	Promoted to "A" class financial institution from "B" Class financial institution
25.	NMB Bank Limited	2008	
26.	KIST Bank	2009	

Source: NRB

In this investment policy of Nepal Agriculture Development Bank is compared with the two other leading J/V Banks, which are selected as the sample banks.

The sample size represents around 11.54 percent of the total population.

The data have been collected for the period of five fiscal years, i.e. from FY 2061/62 to the FY 2065/66.

3.5 Analysis of data:

In this study various financial, statistical and accounting tools have been used to achieve of study. The analysis of data is according to the available of data.

The various tools applied in this study are presented as follows:

3.5.1 Financial Tools:

It is used to analysis financial strength and weakness of bank for these purpose financial tools like ratio analysis has been used.

3.5.1.1 Ratio Analysis

Ratio is the mathematical relationship between two accounting figures. According to Kothari 1984, "Ratio analysis is a part of the whole process of analysis of financial statements of any business or industrial concern especially to take output and credit decisions." Therefore Ratio analysis is comparing a firm's financial performance and status to that other firm's or to itself of different time. Also qualitative judgment of a firm can be done with the help of ratio analysis.

There are many ratios to compare of firm's financial performance and status but have only these ratios have been covered which are related to investment operation of the bank, this study contains following ratios.

3.5.1.1.1. Liquidity Ratios

Liquidity Ratios are used to Judge the ability of banks to meet its short term liabilities that are likely to mature in the short period. It is measurement of speed with which a bank's assets can be converted into cash to meet deposit withdrawal and other current obligations.

The following ratios are evaluation under liquidity ratios.

a) Current ratio

This Ratio shows the banks short term solvency. It shows the relationship between current assets and current liabilities. This ratio computed as.

$$ratio = \frac{CurrentAssets}{CurrentLiabilities}$$

Current Assets includes cash and bank b/s, money at call or short notice, loan and advances, investment of Govt. securities and other interest receivables ,overdrafts, bill purchased and discounted and miscellaneous current assets.

Similarly, current liabilities include deposits and other short-term loan, bills payable, tax provision staff bonus, dividend payables and other miscellaneous current liabilities.

The accepted standard of current ratio is 2:1 but accurate standard depends on circumstances in case of seasonal business ratio and the nature of business.

b) Cash and bank balance to total deposit ratio

It is also called the Cash Reserve Ratio. Cash and bank balance are the most liquid current assets. This ratio measures the percentage of most liquid fund with the bank to make immediate payment to the depositor. This ratio is computed by dividing cash and bank balance by total deposit.

This can be presented as

$$ratio = \frac{CashandBankBalance}{TotalDeposits}$$

Hence, cash and bank balance includes cash in hand, foreign cash on hand, cheque and other cash items, balance with domestic banks and balance held in foreign banks. The total deposit encompasses current deposits, saving deposits, fixed deposits, money at call or short notice and other deposits.

c) Cash and bank balance to current assets ratio

This ratio measures the proportion of most liquid assets i.e. cash and balance among the total current assets of bank. Higher ratio shows the banks ability to meet demand for cash. This ration is computed by dividing cash and bank balance by current assets. This can be stated as

$$ratio = \frac{CashandBankBalance}{CurrentAssets}$$

d) Investment on government securities to current asset ratio

This ratio is calculated to find out the percentage of current assets invested in Govt. securities i.e. treasury bills and development bonds. This ratio is computed by dividing investment on Govt. securities by current assets, we can state it as

$$ratio = \frac{Investment\ on\ Government\ Securities}{Current\ Assets}$$

Here, investment on Govt. securities includes treasury bills and development bonds etc.

3.5.1.1.2. Asset management ratio

Assets management ratio measures how efficiently the bank manages the resources at its command. The following ratios are used under this asset management ratio:

a) Loan and advances to total deposit ratio

This ratio is calculated to find out, how successfully the banks are utilizing their total deposits on loans and advances for profit generating purpose. The ratio is also called ‘total credit/deposit ratio (C/D ratio)’. Greater ratio implies the better utilization of total deposits. This can be obtained by dividing loan and advances by total deposits, which can be stated as

$$ratio = \frac{Loan\ and\ Advances}{Total\ Deposits}$$

b) Total investment to total deposit ratio

Investment is one of the major credits created to earn income. This implies the utilization of firm’s deposit on investment in Govt. securities and shares debentures of other companies and bank. This ratio can be obtained by dividing total investment by total deposit. This can be mentioned as

$$ratio = \frac{Total\ Investment}{Total\ Deposits}$$

The numerator consists of investment on Govt. securities, investment on debenture and bonds, shares in other companies and other investment.

c) Loan and advances to working fund ratio

Loan and advances is the major component in the total working fund (total assets), which indicates the ability of bank to canalize its deposits in the form of loan and advances to earn high return. This ratio is computed by dividing loan and advances by total working fund. This is stated as

$$ratio = \frac{Loan\ and\ Advances}{Total\ Working\ Fund}$$

Here, the denominator includes all assets as of on balance sheet items. In other words this includes current assets, net fixed assets, loans for development banks and other miscellaneous assets but excludes off balance sheet items like letter of credit, letter of guarantee etc.

d) Investment on government securities to total working fund ratio

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

$$ratio = \frac{Investment\ on\ Government\ Securities}{Total\ Working\ Fund}$$

e) Investment in government securities to total domestic deposit ratio

NRB has defined the ratio as Statutory Liquidity Ratio. The ratio is calculated by dividing the amount of investment in Govt. securities by the amount of total domestic deposit. This can be stated as

$$ratio = \frac{Investment\ on\ Government\ Securities}{Total\ Dometic\ Deposit}$$

f) Investment on shares and debenture to total working fund ratio

This ratio shows the banks investment in shares and debenture of subsidiary and other companies. This ratio can be derived by dividing investment on shares and debentures by total working fund, which can be mentioned as

$$ratio = \frac{Investment\ on\ Shares\ and\ Debentures}{Total\ Working\ Fund}$$

The numerator includes investment on debentures, bonds and shares of other companies.

g) Provision for loan loss ratio

This ratio shows the possibility of loan default of a bank. It indicates how efficiently it manages its loan advances and makes effort for loan recovery. Higher ratio implies higher portion of non- performing loan portfolio. Dividing loan loss provision from total loan and advances derives this ratio. This can be stated as

$$ratio = \frac{Loan\ Loss\ Provision}{Total\ Loan\ and\ Advances}$$

Here, the numerator indicates the amount of provisions for possible loss.

3.5.1.1.3. Profitability ratios

Profitability ratios are calculated to measure the efficiency of operation of a firm in term of profit. It is the indicator of the financial performance any institution. This implies that higher the profitability ratio, better the financial performance of bank and vice versa. Profitability position can be evaluated through following different ways:

a) Return on loan and advances ratio

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

$$ratio = \frac{Net\ Profit}{Loan\ and\ Advances}$$

b) Return on total working fund ratio

This ratio measures the overall profitability of all working funds i.e. total assets. It is also known as return on assets (ROA). A firm has to earn satisfactory return on assets or working fund for its survival. This ratio is calculated by dividing net profit (loss) by total working fund. This can be mentioned as

$$ratio = \frac{Net\ Profit}{Total\ Working\ Fund}$$

The numerator indicates the portion of income left to the internal equities after all costs, charges, expenses have been deducted.

c) Return on equity (ROE)

Net worth refers to the owner's claim on a bank. The excess amount of total assets over total liabilities is known as net worth. This ratio measures how efficiently the banks have used the funds of owners. This ratio is calculated by dividing net profit by total equity capital (net worth). This can be stated as,

$$ratio = \frac{Net\ Profit}{Total\ Equity}$$

Here, total equity includes all of shareholder's reserves including P/L a/c GLLP and share capital i.e. ordinary share and preference share capital.

d) Total interest earned to total outside assets ratio

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

$$ratio = \frac{Total\ Interest\ Earned}{Total\ Outside\ Assets}$$

The denominator includes loan and advances, bills purchased and discounted and all types of investments. The numerator comprised total interest income from loans, advances, cash credit, and overdrafts, Govt. securities, inter bank and other investments.

e) Total interest earned to total working fund ratio

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

$$ratio = \frac{TotalInterestEarned}{TotalAssets}$$

f) Total interest earned to total operating income ratio

This ratio is calculated to find out the proportion of interest income in total operating income of the bank. It indicates how efficient is the bank in mobilizing of its resources (funds) in interest bearing assets i.e. loan and advances, investment etc. This ratio is calculated by dividing total interest earned by total operating income. This ratio can be stated as,

$$ratio = \frac{TotalInterestEarned}{TotalOperatingIncome}$$

3.5.1.1.4. Risk ratios

Risk taking is the prime business of bank's investment management. It increases effectiveness and profitability of the bank. These ratios indicate the amount of risk associated with the various banking operations, which ultimately influences the banks investment policy.

The following ratios are evaluated under this topic:

a) Credit risk ratio

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

$$ratio = \frac{NonPerformingLoanandAdvances}{TotalLoanandAdvances}$$

b) Interest risk ratio

Interest risk ratio shows the decline in the net interest income (NII) due to the change in the interest rates charged by the banks on its deposits and advances. Higher interest rates risk ratios suggest the banks to increase the interest rates on deposit and loan and advances, to increase net interest income (NII) and vice versa. This ratio is calculated by dividing interest

sensitive assets (i.e. securities+ variable rate loan and advances) by interest sensitive liabilities (i.e. borrowing total deposits) excluding current deposits. This can be mentioned as

$$ratio = \frac{InterestSensitiveAssets}{InterestSensitiveLiabilities}$$

Here, the numerator includes Treasury bill, development bonds, investment in debenture, mutual fund and other investment and the denominator includes borrowing from NRB and other banks, total deposits excluding current deposits.

3.5.2 Statistical tools

Some important statistical tools are used to achieve the objective of this study. In this study, Statistical tools such Standard deviation (SD), Coefficient of variance (CV), Least square linear trend and Hypothesis testing have been used. Their basic analysis is written in point below:

3.5.2.1 Trend analysis

The objective of Trend analysis is to forecast the value of variables in the future. It determines the expected value of the variables taken into consideration. Under this topic the trend analysis of deposits, loan and advances, investment and net profit of ADBN and the JVBs from FY 2061/62 to FY 2065/66 has been made. For this a simple and linear trend model (linear regression analysis) has been chosen. Under the simple trend model, it is assumed that the dependent variable changes only due to the time factor and the effect of other factors are assumed to be negligible. Under the linear model, it is assumed that the variable moves about a straight line in a graph, plotted with dependent variable on Y-Axis and Independent variable (Time) on X-Axis.

Under this topic following subtopic has been presented.

- Trend analysis of total deposits.
- Trend analysis of loan and advances.
- Trend analysis of total investment.
- Trend analysis of net profit.

3.5.2.2 Test of hypotheses

Hypotheses are the pre-assumed answers to the problem of the research. They provide the directions to the activities done or to be done by the researcher.

The objective of this test is the 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 to the banking business. For the purpose of this research, F-Test has been used for Hypothesis Testing.

The following hypotheses have been set for the purpose of this research:

- Hypothesis 1

There is no significant difference between the loan and advances to total deposit ratios of ADBN and JVBs

- Hypothesis 2:

There is no significant difference between the return on loan and advance ratios of ADBN and JVBs

- Hypothesis 3:

There is no significant difference between the total interest earned to total outside asset ratios of ADBN and JVBs

CHAPTER – IV

PRESENTATION & ANALYSIS OF DATA

In this chapter, the various financial ratios related to the investment management and the fund mobilizations are studied to evaluate and analyze the performance of ADBN, Himalayan bank and NBBL. Study of all types of ratios has not been done. Only those ratios that are important from the point of view of the fund mobilization and investment have been calculated. The important ratios that are studied for this purpose are given below:

4.1 Financial tools

4.1.1 Ratio Analysis

4.1.1.1. Liquidity ratios

➤ Current Ratio

The current ratios of the three banks from the F/Y 2061/62 to 2065/66 have been shown in the Table 4.1

Table 4.1

Fiscal Year	ADBN	NBBL	HBL
2061/62	1.8482	1.2089	2.2905
2062/63	1.7911	1.7903	2.4913
2063/64	1.8434	1.3393	1.3702
2064/65	2.0728	1.4375	1.3921
2065/66	2.2661	1.2300	1.3321
Mean	1.9643	1.4012	1.7752
SD	0.1794	0.2111	0.5071
CV	9.1334	15.0654	28.5639

Source: Appendix A (1)

The mean of the current ratios ADBN is 1.9643 as compared to 1.4012 and 1.7752 of NBBL and HBL respectively. It is sufficiently greater than the ideal current ratio, i.e. 1.5. Similarly the CV of ADBN is 9.1334 as compared to 15.0654 and 28.5639 of NBBL and HBL respectively.

➤ **Cash and Bank Balance to Total Deposit Ratio**

The percentage of Cash and Bank Balance to Total Deposit Ratios of the three banks from the F/Y 2061/62 to 2065/66 have been shown in the table 4.2

Table 4.2

Fiscal Year	ADB	NBBL	HBL
2061/62	11.1488	11.4075	8.1183
2062/63	16.1033	12.9994	6.4828
2063/64	11.3810	12.1653	5.8484
2064/65	11.1320	17.3298	4.5478
2065/66	14.7988	25.5895	8.7901
Mean	12.9128	15.8983	6.7575
SD	2.1150	5.2626	1.5341
CV	16.3789	33.1015	22.7030

Source: Appendix A (2)

Average Cash Reserve Ratio of ADB is 12.9128% which is slightly lower than that of NBBL (18.8983%) and greater than that of HBL (6.7575%). This shows the sufficiency of Cash Reserve in ADB. The coefficient of Variance of Cash Reserve Ratio of ADB is 16.38% which is less than that of NBBL and HBL.

➤ **Cash and Bank Balance to Current Asset Ratio**

The Cash and Bank Balance to Current Assets Ratios of the three banks from the F/Y 2061/62 to 2065/66 have been shown in the Table 4.3

Table 4.3

Fiscal Year	ADB	NBBL	HBL
2061/62	10.8049	13.2187	7.8044
2062/63	15.6619	16.5127	6.2479
2063/64	11.4430	17.7009	5.5354
2064/65	9.3618	22.1710	4.2124
2065/66	11.3682	23.6035	8.1828
Mean	11.7280	18.6414	6.3966
SD	2.1041	3.7921	1.4634
CV	17.9411	20.3426	22.8774

Source: Appendix A (3)

The Cash balance to current ratio of ADB (11.728%) is lower than that of NBBL (16.6414%) but it is considerably greater than that of HBL (6.3966%).the CV of ADB is the lowest (17.94%) as compared to 20.34% and 22.88% of NBBL and HBL respectively.

➤ **Investment on Government Securities to Current Asset Ratio**

Investment on Govt. Securities to Current Asset Ratios of the three banks from the F/Y 2061/62 to 2065/66 have been shown in the Table 4.4

Table 4.4

Fiscal Year	ADBN	NBBL	HBL
2061/62	0.7056	21.1439	21.1906
2062/63	1.3031	24.6469	18.7155
2063/64	5.4577	12.8178	20.3320
2064/65	6.9913	14.3620	21.7336
2065/66	7.5912	15.8303	11.3066
Mean	4.4098	17.7602	18.6557
SD	2.8725	4.4402	3.8137
CV	65.1395	25.0007	20.4425

Source: Appendix A (4)

The above table reveals the fact that ADBN has gradually increased its investment in Govt. securities. The percentage of investment in Govt. securities to total current assets was 0.7056% in FY 2061/62 which has increased to 7.5912% in the FY 2065/66 with an average of 4.4098% and CV of 65.14% over the period. The average percentage of investment in Govt. securities by NBBL and HBL are 17.76% and 18.66% respectively and the CV are 25% and 20.44% respectively for NBBL and HBL respectively.

4.1.1.2. Assets Management Ratios

➤ **Loans and Advances to Total Deposit Ratio**

Table 4.5

Fiscal Year	ADBN	NBBL	HBL
2061/62	83.1584	79.3934	50.0706
2062/63	84.0344	75.2692	64.1655
2063/64	84.0697	97.6933	48.7299
2064/65	112.3844	87.0079	61.2306
2065/66	108.8642	91.3261	71.4884
Mean	94.5022	86.1380	59.1370
SD	13.2147	8.0600	8.6341
CV	13.9834	9.3571	14.6001

Source: Appendix A (5)

The above table reveals that the loans and advances to total deposit ratio of ADBN is normally greater than that of HBL and NBBL during the study period. The average percentage of loan

and advance to total deposit of ADBN is 94.5% as compared to 86.14% and 59.14% of NBBL and HBL respectively. The CV of ADBN (13.98%) is higher than that of NBBL (9.357%) but slightly lower than that of HBL (14.6%).

From the above we can draw conclusion that ADBN has strong position regarding the mobilization of total deposit on loans and advances and acquiring high profit with compare to other two banks. But the high ratio is not better from the point of liquidity as the loans and advances are not as liquid as cash and bank balances.

➤ **Total Investment to Total Deposit Ratio**

Table 4.6

Fiscal Year	ADBN	NBBL	HBL
2061/62	4.9805	19.8895	47.1199
2062/63	5.1004	20.4518	41.1049
2063/64	9.8020	11.0224	39.3464
2064/65	14.7101	12.7705	41.8939
2065/66	19.5970	22.2294	25.1164
Mean	10.8380	17.2728	38.9163
SD	5.6572	4.4913	7.3699
CV	52.1977	26.0023	18.9379

Source: Appendix A (6)

The above table reveals that the investment to total deposit ratio of ADBN (10.838%) is the lowest among the three banks. The ratios of NBBL and HBL are 17.27% and 38.92% respectively. The ratio of ADBL shows a clearly increasing tendency. It has increased from 4.98% in FY 2061/62 to 19.6% in FY 2065/66.

➤ **Loans and Advances to Working Fund Ratio**

Table 4.7

Fiscal Year	ADBN	NBBL	HBL
2061/62	56.7463	67.2267	43.6794
2062/63	56.9718	65.1121	55.5857
2063/64	60.0957	76.3168	42.6712
2064/65	67.1341	70.6539	52.8996
2065/66	62.9154	63.4498	61.9106
Mean	60.7727	68.5518	51.3493
SD	3.9032	4.5680	7.2942
CV	6.4227	6.6635	14.2051

Source: Appendix A (7)

The above table reveals that loans and advances comprise in average 60.77% of the total working fund to working fund of ADBN. The ratio is 68.55% and 51.35% in NBBL and HBL respectively. In average, NBBL has maintained higher loans and advances to total working fund ratios than ADBN and HBL. The CV of ADBN is slightly lower than that of NBBL but significantly lower than that of HBL.

➤ **Investment on Government Securities to Total Working Fund Ratio**

Table 4.8

Fiscal Year	ADBN	NBBL	HBL
2061/62	0.4968	15.4506	19.2293
2062/63	0.9083	16.7846	16.8226
2063/64	3.8802	6.8817	18.8107
2064/65	4.9661	9.1159	20.2717
2065/66	5.7111	11.9237	10.5185
Mean	3.1925	12.0313	17.1305
SD	2.1188	3.7233	3.4902
CV	66.3671	30.9468	20.3744

Source: Appendix A (8)

The above table indicates that the investment in Govt. securities of ADBN is the lowest among the three banks. The average of ADBN is 3.19% as compared to 12.03% and 17.13% respectively of NBBL and HBL. However it can be noticed that the ratios of ADBN show an increasing trend whereas those of NBBL and HBL seems to be more stable.

➤ **Investment in Government Securities to Total Domestic Deposit ratio**

Table 4.9

Fiscal Year	ADBN	NBBL	HBL
2061/62	0.7280	18.7394	29.5378
2062/63	1.3398	19.6212	25.9573
2063/64	5.4282	8.9396	27.4229
2064/65	8.3133	11.4866	29.3062
2065/66	9.8822	17.4779	14.1245
Mean	5.1383	15.2529	25.2698
SD	3.6482	4.2481	5.7242
CV	71.0009	27.8509	22.6525

Source: Appendix A (9)

The percentage of investment in Govt. securities to total domestic deposit shows a similar result as compared to the percentage of investment in Govt. securities to total working fund.

The average of ADBN is 5.14% whereas those of NBBL and HBL are 15.25% and 25.27% respectively. It should be noted that the ratio of ADBN has increased from 0.73% in the FY 2061/62 to 9.88% in the FY 2065/66.

➤ **Investment on Shares and Debentures to Total Working Fund Ratio**

Table 4.10

Fiscal Year	ADBN	NBBL	HBL
2061/62	0.3694	0.4383	0.1403
2062/63	0.3372	0.4307	0.1305
2063/64	0.3213	0.5393	0.2140
2064/65	0.2379	0.4231	0.2430
2065/66	0.2351	0.3552	0.2344
Mean	0.3002	0.4373	0.1924
SD	0.0543	0.0590	0.0476
CV	18.0788	13.4842	24.7427

Source: Appendix A (10)

The average percentage of investment in shares and debentures to total working fund of ADBN is 0.30% which is lower than that of NBBL (0.44%) but greater than that of HBL (0.19%). The CV of the investment in shares and debentures of ADBN (18.08%) is also greater than that of NBBL (13.48%) but less than that of HBL (24.74%)

➤ **Provision for Loan Loss Ratio**

Table 4.11

Fiscal Year	ADBN	NBBL	HBL
2061/62	38.3016	19.1050	8.2631
2062/63	33.7732	34.0548	6.5856
2063/64	26.3759	51.9162	5.4343
2064/65	14.9136	42.3651	3.4984
2065/66	16.7215	26.5655	2.9297
Mean	26.0172	34.8013	5.3422
SD	9.1749	11.5316	1.9650
CV	35.2646	33.1356	36.7824

Source: Appendix A (11)

The average of provision for loan loss ratio of ADBN is 26.02% which is lower than that of NBBL (34.80%) but is substantially higher than that of HBL (5.34%). However it can be noticed that the ratio has improved to 16.72% in the last year of study (FY 2065/66) which was 38.30% in the first year of study (FY 2061/62). The CV of the ratios of all the three banks are

more or less the similar during the study period. They are 35.26%, 33.14% and 36.78% for ADBN, NBBL, and HBL respectively.

4.1.1.3. Profitability Ratios

➤ Return on Loans and Advances

Table 4.12

Fiscal Year	ADBN	NBBL	HBL
2061/62	(0.3473)	(8.1223)	2.4812
2062/63	1.4197	(18.3451)	2.6912
2063/64	3.8839	(11.5774)	3.3589
2064/65	4.4231	6.2989	3.2613
2065/66	3.2348	23.6362	3.0365
Mean	2.5228	(1.6219)	2.9658
SD	1.7564	14.9783	0.3338
CV	69.6210	(923.4812)	11.2541

Source: Appendix A (12)

The average of return on loan and advances of ADBN is 2.52% which is slightly lower than that of HBL (2.97%). However, the coefficient of variance of ADBN (69.62%) is considerably higher than that of HBL (11.25%). This implies that HBL has been more successful in mobilizing its loan and advances than ADBN and NBBL.

➤ Return on Total Working Fund Ratio

Table 4.13

Fiscal Year	ADBN	NBBL	HBL
2061/62	(0.1971)	(5.4604)	1.0838
2062/63	0.8088	(11.9449)	1.4959
2063/64	2.3340	(8.8355)	1.4333
2064/65	2.9694	4.4504	1.7252
2065/66	2.0352	14.9971	1.8799
Mean	1.5901	(1.3586)	1.5236
SD	1.1365	9.8595	0.2720
CV	71.4764	(725.6963)	17.8534

Source: Appendix A (13)

The average return on total working fund of ADBN is 1.59% as compared to (-ve) 1.36% of NBBL and 1.52% of HBL. Although the average return on total working fund of ADBN is greater than those of other two banks, the high CV of 71.48% signifies a higher degree of risk in ADBN.

➤ **Return on Equity Ratio (ROE)**

Table 4.14

Fiscal Year	ADBN	NBBL	HBL
2061/62	1.3129 *	(333.3377)	21.8164
2062/63	(42.3202)*	115.0120*	25.9010
2063/64	83.1401	40.4540*	22.9128
2064/65	26.3516	(27.2189)*	25.3032
2065/66	12.3872	194.0318	24.1302
Mean	16.1743	(2.2117)	24.0127
SD	40.6074	181.2970	1.5019
CV	251.0608	(8,197.0801)	6.2547

[*ratios for the period where the total equity are negative]

Source: Appendix A (14)

On the basis of the return on equity, the performance of ADBN can be considered to be better than NBBL but cannot be considered as good as that of HBL. The performance of HBL is the most consistent among the three banks.

➤ **Total Interest Earned to Total outside Assets Ratio**

Table 4.15

Fiscal Year	ADBN	NBBL	HBL
2061/62	17.2947	9.1048	11.6420
2062/63	16.1984	7.7389	9.5686
2063/64	16.9640	10.7116	12.1262
2064/65	12.9530	8.7467	10.0713
2065/66	11.8683	14.6444	9.4470
Mean	15.0557	10.1893	10.5710
SD	2.2155	2.4242	1.1031
CV	14.7153	23.7914	10.4347

Source: Appendix A (15)

The above table shows the ratio of total interest earned to total outside assets of the three banks from FY 2061/62 to FY 2065/66. In the study period, ADBN has earned the highest interest on total outside assets. The average rate of interest earned to outside assets of ADBN, NBBL and HBL are 15.06%, 10.19% and 10.57% respectively. The CV of the ratio of ADBN is 14.72% which is higher than that of HBL but lower than that of NBBL.

➤ **Total Interest Earned to Total Working Fund Ratio**

Table 4.16

Fiscal Year	ADB	NBBL	HBL
2061/62	9.8141	6.1208	5.0852
2062/63	9.2285	5.0390	5.3188
2063/64	10.1947	8.1748	5.1744
2064/65	8.6959	6.1798	5.3277
2065/66	7.4670	9.2919	5.8487
Mean	9.0800	6.9613	5.3509
SD	0.9542	1.5438	0.2650
CV	10.5092	22.1770	4.9523

Source: Appendix A (16)

The mean of ADB is highest (9.08%) as compared to other two banks (6.96% and 5.35% of NBBL and HBL respectively) and depicts that ADB is earning better interest as compared to its total working fund ratio. However the CV of the ratio of ADB is higher than that of HBL but lower than that of NBBL.

➤ **Total Interest Earned to Total Operating Income Ratio**

Table 4.17

Fiscal Year	ADB	NBBL	HBL
2061/62	92.2492	80.9204	82.2845
2062/63	95.0523	79.3661	79.6363
2063/64	94.2537	80.1119	82.1735
2064/65	91.2661	68.2015	81.1009
2065/66	88.6333	80.3009	80.1347
Mean	92.2909	77.7801	81.0660
SD	2.2763	4.8150	1.0606
CV	2.4665	6.1905	1.3083

Source: Appendix A (17)

The above table shows that, out of the total operating income of ADB, interest on loans and advances has a higher part i.e. 92.29% and the same of HBL and NBBL is 81.07% and 77.78% respectively. The coefficient of variance of the ratio of ADB is lower than that of NBBL but is higher than that of HBL.

4.1.1.4. Risk Ratios

➤ Credit Risk Ratio

Table 4.18

Fiscal Year	ADBN	NBBL	HBL
2061/62	26.5214	19.0398	8.0594
2062/63	27.5452	29.8795	6.1228
2063/64	22.6964	39.7623	4.3819
2064/65	9.3696	31.7324	2.4476
2065/66	11.1212	19.7950	2.2236
Mean	19.4508	28.0418	4.6471
SD	7.7079	7.7899	2.2182
CV	39.6278	27.7796	47.7341

Source: Appendix A (18)

The above table shows that the credit risk ratio of ADBN has significantly decreased in the later years. It has decreased to 11.12% in the FY 2065/66 which was 26.52% in FY 2061/62. The average of portion of non-performing loan of ADBN for the study period was 19.45% which is lower than that of NBBL (28.04%) but higher than that of HBL (4.65%).

➤ Interest Risk ratio

Table 4.19

Fiscal Year	ADBN	NBBL	HBL
2061/62	87.1134	89.0452	64.7690
2062/63	87.8267	84.0541	81.0406
2063/64	90.3787	111.2981	60.7983
2064/65	121.3189	99.4404	73.8168
2065/66	119.3928	109.8267	80.5026
Mean	101.2061	98.7329	72.1855
SD	15.6852	10.8699	8.1844
CV	15.4983	11.0094	11.3380

Source: Appendix A (19)

From the above table, the interest risk ratio of ADBN is 101.21% which is the highest among the three banks. The CV of ADBN is 15.5% which is also the highest among the three banks. These indicate the highest interest risk in ADBN among the three banks.

4.2 Statistical analysis

Statistical analysis is performed under this chapter. Following statistical tools has been used for this purpose:

4.2.1 Trend analysis

4.2.1.1. Trend of Total Deposit

The trend values of the deposits of the three banks based on the data from the fiscal year 2061/62 to 2065/66 and the predicted values of Deposits (in thousand Rs.) up to fiscal year 2070/71 have been shown in the following table.

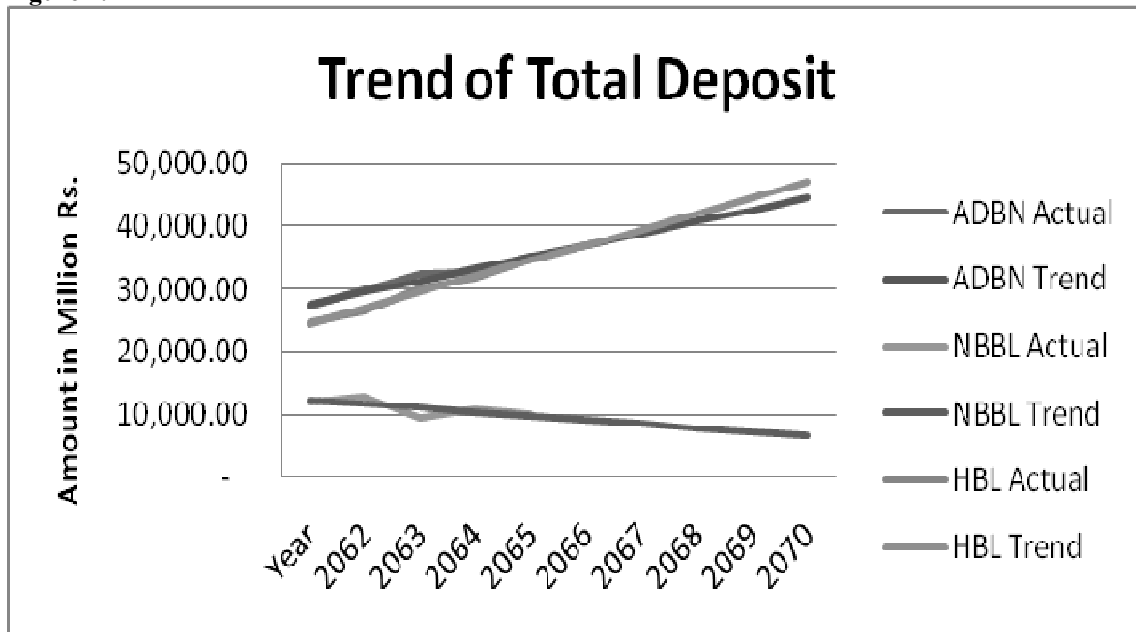
Table 4.20: Trend of Total Deposit

	ADBN	NBBL	HBL
Mean	31,395,964.40	11,081,602.79	29,575,483.18
a=	(3,845,929,212.88)	1,329,409,010.01	(5,148,299,607.18)
b=	1,878,549.02	(638,724.52)	2,508,660.41
Predicted Values for FY			
2066/67	37,031,611.46	9,165,429.23	37,101,464.42
2067/68	38,910,160.48	8,526,704.72	39,610,124.83
2068/69	40,788,709.50	7,887,980.20	42,118,785.24
2069/70	42,667,258.52	7,249,255.68	44,627,445.65
2070/71	44,545,807.54	6,610,531.16	47,136,106.07

Source: Appendix B (1)

The deposits of ADBN and HBL have the increasing trend whereas the deposit of NBBL depicts a decreasing trend. From the above table it can be predicted that the deposits of ADBN would reach up to Rs. 44,545.8 million in the fiscal year 2070/71. This can be presented by the following chart.

Figure 4.1



4.2.1.2. Trend of Loans and Advances

The following table shows the trend values of loans and advances of the banks based on the data of F/Y 2061/62 to 2065/66 and the predicted values (in thousand Rs) of Loan and advances for the next 5 fiscal years.

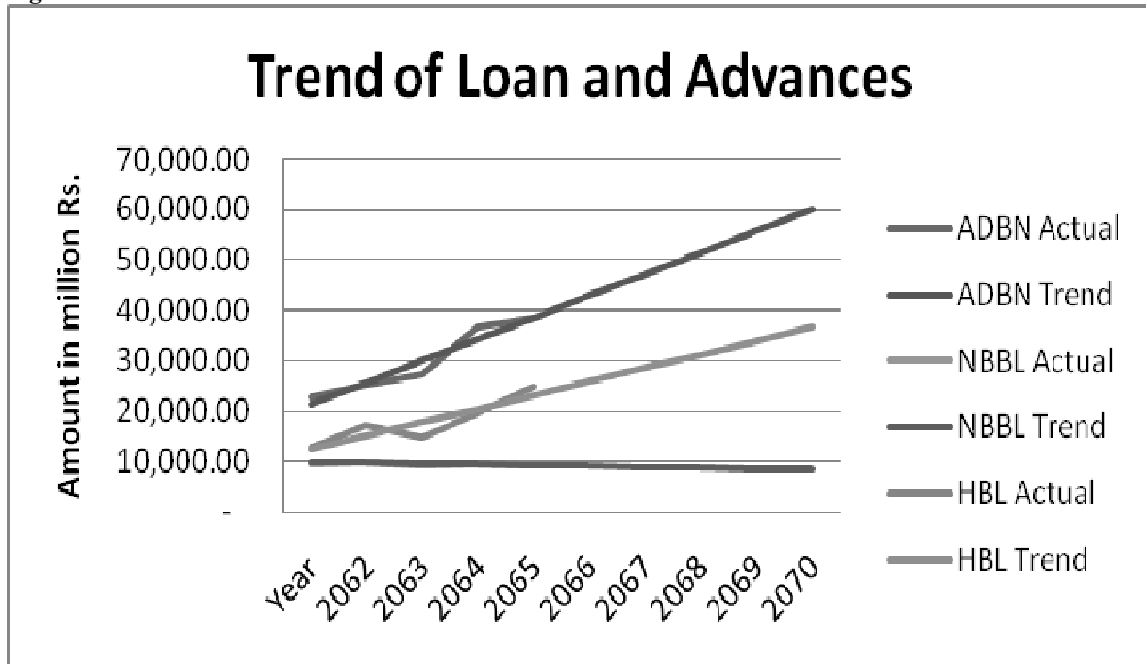
Table 4.21: Trend of Loan and Advances

	ADBN	NBBL	HBL
a=	(8,834,945,437.06)	281,797,007.76	(5,604,002,856.49)
b=	4,294,997.59	(131,956.61)	2,723,679.27
Predicted Values for FY			
2066/67	42,814,573.20	9,042,705.22	25,842,188.40
2067/68	47,109,570.79	8,910,748.61	28,565,867.67
2068/69	51,404,568.38	8,778,792.01	31,289,546.94
2069/70	55,699,565.96	8,646,835.40	34,013,226.20
2070/71	59,994,563.55	8,514,878.80	36,736,905.47

Source: Appendix B (1)

From the above table the loans and advances of ADBN and HBL show an increasing trend whereas NBBL shows a decreasing trend. All the three banks have the increasing trend. It can be predicted that the value of the loan and advances of ADBN would reach to Rs. 59,994.56 million in the fiscal year 2070/71. This can be presented by the following chart.

Figure 4. 2



4.2.1.3. Trend of Total Investment

The following table shows the trend values of total investments of the banks based on the data of F/Y 2061/62 to 2065/66 and the predicted values (in thousand Rs) of loan and advances for the next 5 fiscal years.

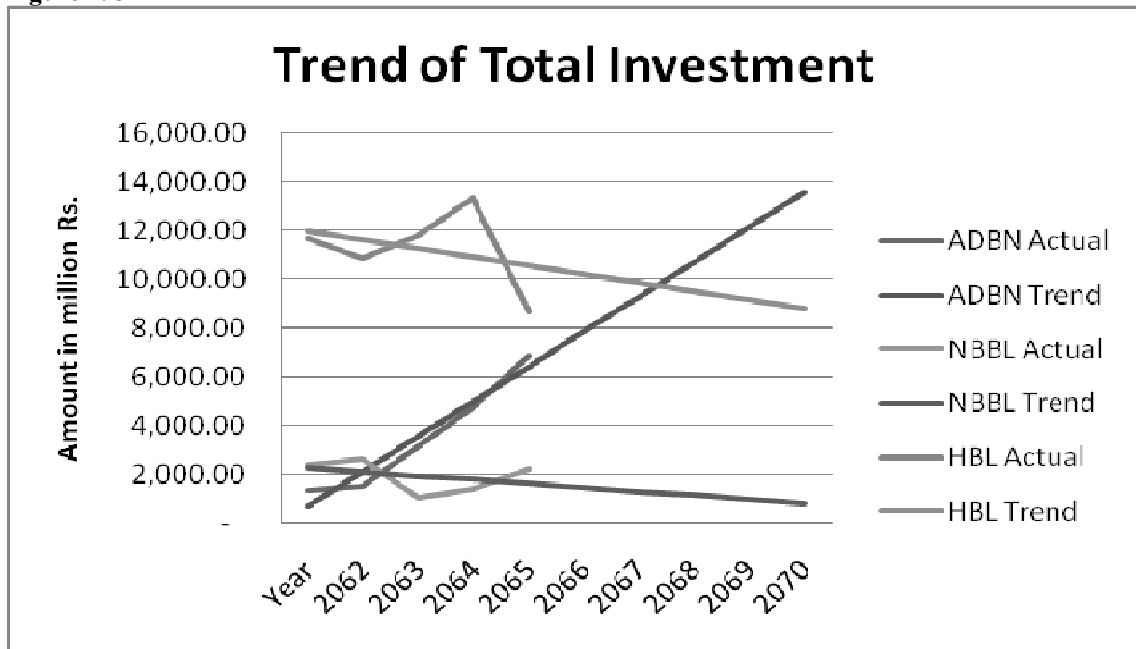
Table 4.22: Trend of Total Investment

	ADB	NBBL	HBL
a=	(2,957,119,866.25)	342,609,089.20	736,200,142.47
b=	1,434,430.42	(165,050.87)	(351,215.65)
Predicted Values for FY			
2066/67	7,847,816.03	1,448,936.78	10,237,398.06
2067/68	9,282,246.45	1,283,885.91	9,886,182.41
2068/69	10,716,676.87	1,118,835.03	9,534,966.76
2069/70	12,151,107.29	953,784.16	9,183,751.11
2070/71	13,585,537.72	788,733.29	8,832,535.47

Source: Appendix B (3)

The total investment of ADBN shows the increasing trend but the investment of NBBL and HBL are decreasing. The total investment of ADBN would reach up to Rs. 13,585.5 million in the fiscal year 2070/71. This can be presented by the following chart.

Figure 4. 3



4.2.1.4. Trend of Total Profit

The following table shows the trend values of total profits of three banks based on the data of F/Y 2061/62 to 2065/66 and the predicted values (in thousand Rs) of Loan and advances for the next 5 fiscal years.

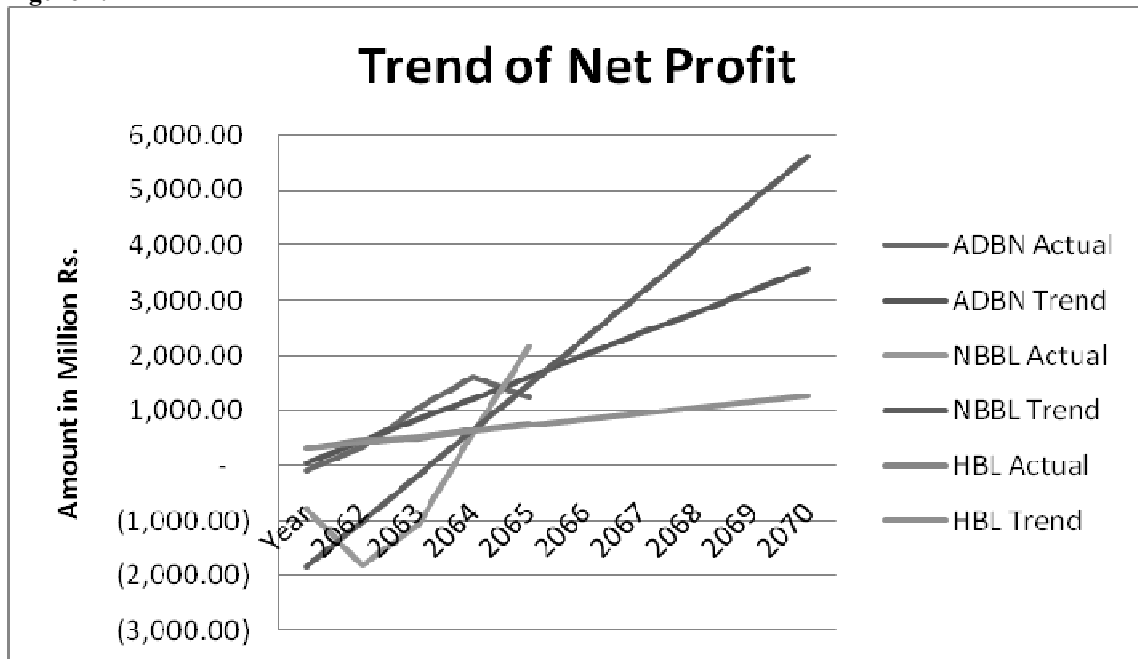
Table 4.23: Trend of Total Profit

	ADB	NBBL	HBL
a=	(803,697,064.73)	(1,707,871,752.03)	(219,808,931.94)
b=	389,794.08	827,371.38	106,753.00
Predicted Values for FY			
2066/67	2,007,290.36	2,304,898.70	849,510.80
2067/68	2,397,084.43	3,132,270.08	956,263.79
2068/69	2,786,878.51	3,959,641.46	1,063,016.79
2069/70	3,176,672.59	4,787,012.85	1,169,769.78
2070/71	3,566,466.66	5,614,384.23	1,276,522.78

Source: Appendix B (4)

The profits of all the three banks show the increasing trend. From the above, it can be predicted that the net profit of ADBN would reach to Rs. 3,566.5 million in FY 2070/71. This can be presented by the following chart.

Figure 4. 4



4.2.2 Test of Hypotheses

Hypothesis 1

H0: Loan and advances to total deposit ratios of the three banks are equal.

H1: Loan and advances to total deposit ratios of the three banks are not equal.

Table 4.24: ANOVA Table

Source of variation	Sum of Squares	d.f.	Mean Squares	F-ratio
Between samples	SSC= 75,660	C-1=2	MSC= 37,830	F=MSC/MSE
Within samples	SSE= 80,647	N-C=12	MSE= 6,721	= 5.63
Total	SST= 4,987	N-1=14		

$F(TAB)(2,12) = 3.89$

Source: Appendix C

Since the calculated value of F (5.63) is greater than table value of F =3.89 at 12 degree of freedom (d.f.) and 5% level of significance, the null hypothesis (H0) is rejected and the alternative hypothesis (H1) is accepted.

Hypothesis 2

H0: Return on Loans and Advances ratios of the three banks are equal.

H1: Return on Loans and Advances ratios of the three banks are not equal.

Table 4.25: ANOVA Table

Source of variation	Sum of Squares	d.f.	Mean Squares	F-ratio
Between samples	SSC= 220.42	C-1=2	MSC=110.21	F=MSC/MSE
Within samples	SSE= 981.35	N-C=12	MSE=81.78	=1.35
Total	SST=1,201.76	N-1=14		

$F(TAB)(2,12) = 3.89$

Source: Appendix C

Here the calculated value of F (1.35) is less than the table value of F=3.89 at 12 degree of freedom and 5% level of significance, the null hypothesis is accepted and the alternative hypothesis is rejected.

Hypothesis 3

H0: Total interest earned to total outside asset ratios of the three banks are equal.

H1: Total interest earned to total outside asset ratios of the three banks are not equal.

Table 4.26: ANOVA Table

Source of variation	Sum of Squares	d.f.	Mean Squares	F-ratio
Between samples	SSC=1,684	C-1=2	MSC=842	F=MSC/MSE
Within samples	SSE=1,817	N-C=12	MSE=151	=5.56
Total	SST=3501	N-1=14		

$F(TAB)(2,12) = 3.89$

Source: Appendix C

Since the calculated value of F (5.56) is greater than table value of F =3.89 at 12 degree of freedom and 5% level of significance, the null hypothesis (H0) is rejected and the alternative hypothesis (H1) is accepted.

4.3 Major findings of the study

The major findings which were generated from this study have been summarized below:

Liquidity Ratio

The liquidity position of ADBN, NBBL and HBL reveals that:

- The mean liquidity ratio of ADBN is higher than that of NBBL and HBL, which indicates that ADBN has maintained higher liquidity and lower risk in compare to other two banks. The ratio of ADBN is less variable than that of other two banks which indicates the more stable liquidity position of ADBN.
- The mean cash reserve ratio of ADBN is greater than that of HBL but lower than that of NBBL. Cash reserve ratio of ADBN is more stable and consistent than that of other two banks. This indicates that ADBN has maintained a better position of cash reserve than HBL but less than NBBL.
- Similarly, the mean ratio of cash and bank balance to current assets also of ADBN is greater than that of HBL but lower than that of NBBL. This ratio also of ADBN is more stable and consistent than that of other two banks. This again indicates that ADBN has maintained a better position of cash and bank balances than HBL but less than NBBL.
- The liquidity position of ADBN from the point of view of investment on Govt. securities cannot be considered as good as that of other two banks.

Asset Management Ratio

- The mean ratio of loans and advances to total deposit of ADBN is higher than that of other two banks. But ratios are more consistent than that of NBBL and less consistent than that of HBL. The ratios of ADBN are higher than that of the maximum ceiling as prescribed by NRB.
- The lowest mean ratio of total investment to deposit of ADBN among the three banks indicates the lowest amount of investment. However the amount of investment has substantially increased in the later years.
- The mean ratio of loans and advances to total working fund of ADBN is higher than of HBL and that lower than of NBBL, which shows that ADBN has provided a greater portion of working fund as loan and advances than that of HBL. At the same time it is lower than that of NBBL.
- The mean ratios of investment in Govt. securities to total working fund and to total domestic deposit of ADBN are the lowest among the three banks. Although the average of investment in Govt. securities is not sufficient to comply the NRB requirement, ADBN has succeeded to invest in Govt. securities sufficient amount so as to comply the NRB requirement in the later years of the study.
- The mean ratio of investment in shares and debentures to total working fund of ADBN is higher than that of HBL whereas it is lower than that of NBBL. It states that ADBN has succeed much more in investing it's fund in shares and debenture as compared to HBL but less than NBBL in comparison.
- The provision for loan loss of ADBN is better than that of NBBL but not as good as that of HBL. However, ADBN has substantially improved the position of provision for loan loss in the later years.

Profitability Ratio

- The average return on loan and advances and on total working fund of ADBN can be considered satisfactory but the rate of return is not consistent over the study period.

- Similarly the return on equity of ADBN also can be considered satisfactory. The return on equity of ADBN is lower than that of HBL but is better than that of NBBL. However the rate of return is not consistent over the study period.
- The mean ratio of total interest earned to total outside asset of ADBN is higher than of other two banks. The ratios of ADBN are also consistent than compared to other two banks. This states that ADBN is in better position in this regard.
- Similarly, the mean ratio of total interest earned to total working fund of ADBN also is higher than that of other two banks. The ratios of ADBN are also more consistent than of other two banks. This states that ADBN is in better position than other two banks in this regard.
- The mean ratio of total interest earned to total operating income of ADBN is higher than that of other two banks which indicates that the position of ADBN is much more satisfactory than that of other two banks. The ratios of ADBN is also consistent than that of other two banks. However the concentration on interest income only may lead to serious consequences.

Risk Ratio

- The credit risk of ADBN is higher than that of HBL but lower than of NBBL which indicates the higher credit risk. However, the ratio of ADBN has significantly decreased in the later years.
- The interest rate risk of ADBN is higher than that of other two banks. It indicates the interest rate structure of ADBN is higher than the average level. In fact, it has crossed the maximum bench mark.

Trend Analysis

The trend analysis of ADBN, NBBL and HBL reveals that:

- The deposits of ADBN and HBL have the increasing trend whereas the deposit of NBBL depicts a decreasing trend. The total deposit of ADBN, NBBL and HBL will be Rs.

44,545.8M, Rs. 6,610.5M and Rs. 47,136.1M at the end of Ashadh 2071. It states that the deposit collection position of ADBN is satisfactory as compared to other two banks.

- The loans and advances of ADBN and HBL show an increasing trend whereas NBBL shows a decreasing trend. The total loans and advances of ADBN, NBBL and HBL will be Rs. 59,994.56M, Rs. 8,514.88M and Rs. 36,736.9M at the end of Ashadh 2071. The lending position of ADBN is better than other two banks in comparison.
- The total investment of ADBN shows the increasing trend but the investment of NBBL and HBL are decreasing. The total investment of ADBN would reach up to Rs. 13,585.5M in the FY 2070/71 whereas those of NBBL and HBL would go down to 788.7M and 8,832.5M if the same trend continues.
- The profits of all the three banks show the increasing trend. From the above, it can be predicted that the net profit of ADBN would reach to Rs. 3,566.5M in FY 2070/71. The trend shows that the net profit of NBBL is increasing at the highest rate followed by ADBN.

Test of Hypotheses

The test of hypothesis reveals that

- Loan and advances to total deposit ratio of the three banks are not equal. ADBN has forwarded a greater amount of loan and advances in proportion to total credit as compared to NBBL and HBL.
- Return on loan and advances ratios of the three banks can be considered to be equal. This implies that the banks have been earning similar amounts with respect to the total amount of loan and advances forwarded by the bank.
- Total interest earned to total outside asset ratios of the three banks are not equal. The data available reveal that the ratio of ADBN is higher than those of NBBL and HBL. This can probably be due to a greater concentration of loan and advances in the total assets of ADBN.

CHAPTER –V

SUMMARY, CONCLUSION & RECOMMENDATION

5.1 Summary

- CB plays a vital role in the economic development of the country. They render various services to their customers which automatically facilitates their economic and their social life. They are much important for integrated and speedy development a country.
- Joint venture banks are the CBs formed from the joint participation of two or more enterprise for the purpose of carrying out specific operations such as investment in trade, business and industries as well as in the form of negotiation between different groups of industries and trade to facilitate easy in mutual exchange of goods and services.
- The primary objective of every joint venture banks, being operated from private sector, is to earn profit by investing or granting loans and advances to people associated with trade, business, industry etc. Though the primary motive of those banks is to earn profit they are providing quick services to the customers and aids in empowering the economic activities of the country by investing loans in the development of new and growing business activities.
- Agricultural Development Bank was established with an objective to raise the economic condition of farmers by availing credit and capital inputs in easy and smooth manner. The subsequent amendments of the act empowered the bank to finance small farmers on group.
- In current scenario there is a very high competition in banking sector in Nepal but investment alternatives are decreasing day by day, the reason behind it is political instability, insurgency etc. So banks have to face many problems to survive in this type of environment. Every bank is following sound investment policy for a purposeful, safe and profitable investment.

- Development of trade, industry and business is the main ground of banks to conduct its activities and fulfill its profit making objectives. The sound investment policy help all the banks to make profitable investment and which in turn also helps to develop the economic condition of the country.
- We can also say that in current scenario the investible market in Nepal is almost saturated and there is also a high flow of money in the market but less viable and investible sector.
- Most of the CBs operating in Nepal are earning profit and been able to satisfy their shareholders by providing adequate return which in turn attracts the potential customers to power their money in bank as there are very few sectors to make a profitable investment and the investors are always reluctant to risk. Hence there in a lot of deposits in CBs but very little investment opportunity.
- The basic objective of this study is to evaluate the investment policy adopted by Agricultural Development Bank and compare it with the policy of Nepal Bangladesh Bank Ltd. and Himalayan Bank Ltd.
- This study basically depends upon the financial statements published by the respective banks and secondary data and to make it more attractive and reliable various bank related journals and past period thesis related to this topic have been consulted.
- Basically there are five principles of sound lending policy i.e. profitability, liquidity, safety and security, suitability and dispersal. The sound investment policy states that the funds are distributed in a various assets with good profitability and provides maximum safety and security to the depositors and bank. Moreover, risk in banking sector trends to be concentrated in the loan portfolio. When a bank gets into serious financial trouble its problem usually spring from significant amounts of loan that have become un-collectible due to mismanagement, illegal manipulation of loan, misguided lending policy or unexpected economic downturn. Therefore the banks investment policy must be such that it is sound and prudent in order to protect public funds.

- Various process and methods are applied in the study. The data required for the analysis are directly obtained from financial statement of concerned banks and publication of NRB.
- Various financial and statistical tools are applied in the study to achieve the objectives of the study. The analysis of data is done according to the pattern available.

5.2 Conclusion

From the study following points have been concluded:

- The liquidity position of ADBN is good enough as compared to that of NBBL and HBL. Investment in Govt. securities of ADBN is lower than that of other two banks. However ADBN has increased the liquidity in Govt. securities in the later years.
- The asset management of ADBN can be considered good enough. It has forwarded the highest amount of loan and advances in proportion to total deposit. The amount of total investment and investment in Govt. securities of ADBN is lower than those of other two banks. However the amount on investment in Govt. securities in the last year of study is just enough to comply the requirement of NRB. The provision for loan loss of ADBN lies between that of NBBL and HBL.
- The performance of ADBN can be considered to be somewhere between the performances of NBBL and HBL on the basis of return and interest income. The performance of HBL is the most consistent among the three. ADBN and NBBL have improved their performance in the later years of the study. ADBN has earned the highest amount of interest income with respect to the total outside assets as well as with respect to the total working fund. However over concentration on interest income would lead to negative consequences.
- The degree of risk is high in ADBN. The Interest risk is the highest among the three banks and the Credit Risk also is higher than that of HBL. Credit risk has been reduced significantly in the later years of study. On the contrary, the interest risk has increased in the later years of study.

- The trend of the Total Deposit, Total loans and Advances and Total Investment of ADBN shows a fair position of ADBN as compared to that of HBL and NBBL. ADBN has improved its position in the later years of study.

5.3 Recommendation

From the study, the following recommendations can be made.

- The liquidity position of ADBN is fairly good enough. It should continue the current position of liquidity. However it should slightly increase the amount of investment in Govt. securities to improve the quality of liquid assets of the bank.
- There is a substantial portion of loan and advances in ADBN. ADBN should reduce the concentration of assets on loan and advances with respect to the amount of deposit.
- Non-performing loans consist substantial portion of loan and advances of ADBN. Accordingly, the provision for loan loss ratio also has remained at fairly high level. ADBN should focus on reducing the proportion of non-performing loans and improving the quality of loan and advances forwarded. ADBN should focus on the collection of expired loans and advances to reduce the loan loss ratio. The policy of ADBN should ensure rapid identification of delinquent loans, immediate contact with the borrowers and continual follow up until a loan is recovered. The recovery of loan is the most challenging job to a bank. Therefore the bank must be very careful in formulating a sound credit collection policy.
- Portfolio management of bank assets basically means allocation of fund in different components of a banking components having different degree of risks and varying rate of return so as to maintain a proper degree of balance between risk and return. The portfolio condition of ADBN should be carefully examined periodically.
- Profit is a very important for the survival and stability of any organization. The return on loan and advances, return on working fund and return on equity is the lowest in ADBN. This may be due to the focus of ADBN on low return areas with higher degree of risk.

ADBN should look for other areas of investment with higher return and lower risks so that it can earn a return sufficient enough for its survival, stability and long term sustainability.

- The proportion of interest earned in the total earning is greater in ADBN. This shows the focus of ADBN in lending business only. Lending business is the major source of any bank. Liberal lending policy helps a bank to make the efficient utilization of its deposits. However ADBN should try to diversify its business to other areas of banking such as Merchandise Business, Remittance Business, etc. it should introduce new products and offer services to the public. Automation of banking activities, networking of branches and introduction of ABBS services, online banking services, introduction of debit cards and credit cards, etc. may be some important activities that would probably lead to an improvement in the performance of ADBN.
- Since both the credit risk and interest rate risk are higher in ADBN, it should decrease the proportion of loan and advances in the total working fund by acquisition of other types of assets.
- The study reveals that ADBN has not adopted any cost management strategy to have control over its cost of funding. Higher interest paid to working fund, higher loan loss ratio, high administrative cost are some of the reasons behind less profitability of the bank. So ADBN should try to adopt cost management strategy by applying standard costing, value analysis, and value added statement and sound capital structure.

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APPENDICES

Appendix A: Calculation of Financial Ratios

1. Current Ratio

(Rs. In '000)

ADBN

FY	Current Assets	Current Liabilities	Ratio
2061/62	28,089,379.02	15,198,420.11	1.848
2062/63	30,467,028.65	17,009,979.19	1.791
2063/64	32,240,726.10	17,490,012.01	1.843
2064/65	38,709,300.00	18,674,890.00	2.073
2065/66	45,763,800.00	20,195,160.00	2.266

NBBL

FY	Current Assets	Current Liabilities	Ratio
2061/62	10,464,177.61	8,656,038.22	1.209
2062/63	10,245,968.75	5,723,170.00	1.790
2063/64	6,450,677.37	4,816,600.00	1.339
2064/65	8,507,135.05	5,917,910.00	1.438
2065/66	10,838,910.86	8,811,900.00	1.230

HBL

FY	Current Assets	Current Liabilities	Ratio
2061/62	25,812,031.05	11,269,000.00	2.291
2062/63	27,486,845.60	11,033,000.00	2.491
2063/64	31,747,414.66	23,170,440.00	1.370
2064/65	34,378,400.99	24,696,000.00	1.392
2065/66	37,255,082.19	27,968,000.00	1.332

2. Cash and Bank Balance to Total Deposit Ratio

(Rs.In'000)

ADBN

FY	Cash and Bank Balance	Total Deposit	Ratio
2061/62	3,035,038.25	27,223,046.16	11.149
2062/63	4,771,701.11	29,631,817.48	16.103
2063/64	3,689,320.87	32,416,358.36	11.381
2064/65	3,623,900.00	32,553,800.00	11.132
2065/66	5,202,500.00	35,154,800.00	14.799

NBBL

FY	Cash and Bank Balance	Total Deposit	Ratio (%)
2061/62	1,383,229.04	12,125,578.26	11.408
2062/63	1,691,890.82	13,015,136.11	12.999
2063/64	1,141,831.17	9,385,949.55	12.165
2064/65	1,886,114.13	10,883,652.58	17.330
2065/66	2,558,360.21	9,997,697.43	25.589

HBL

FY	Cash and Bank Balance	Total Deposit	Ratio (%)
2061/62	2,014,470.96	24,814,011.98	8.118
2062/63	1,717,352.33	26,490,851.64	6.483
2063/64	1,757,341.26	30,048,417.76	5.848
2064/65	1,448,142.89	31,842,789.36	4.548
2065/66	3,048,526.80	34,681,345.18	8.790

3. Cash and Bank Balance to Current Asset Ratio**(Rs.In'000)****ADBN**

FY	Cash and Bank Balance	Current Assets	Ratio (%)
2061/62	3,035,038.25	28,089,379.02	10.805
2062/63	4,771,701.11	30,467,028.65	15.662
2063/64	3,689,320.87	32,240,726.10	11.443
2064/65	3,623,900.00	38,709,300.00	9.362
2065/66	5,202,500.00	45,763,800.00	11.368

NBBL

FY	Cash and Bank Balance	Current Assets	Ratio (%)
2061/62	1,383,229.04	10,464,177.61	13.219
2062/63	1,691,890.82	10,245,968.75	16.513
2063/64	1,141,831.17	6,450,677.37	17.701
2064/65	1,886,114.13	8,507,135.05	22.171
2065/66	2,558,360.21	10,838,910.86	23.603

HBL

FY	Cash and Bank Balance	Current Assets	Ratio (%)
2061/62	2,014,470.96	25,812,031.05	7.804
2062/63	1,717,352.33	27,486,845.60	6.248
2063/64	1,757,341.26	31,747,414.66	5.535
2064/65	1,448,142.89	34,378,400.99	4.212
2065/66	3,048,526.80	37,255,082.19	8.183

4. Investment on Government Securities to Current Assets Ratio**(Rs.In'000)****ADBN**

FY	Investment in Govt. Securities	Current Assets	Ratio (%)
2061/62	198,191.55	28,089,379.02	0.706
2062/63	397,010.90	30,467,028.65	1.303
2063/64	1,759,614.73	32,240,726.10	5.458
2064/65	2,706,300.00	38,709,300.00	6.991
2065/66	3,474,000.00	45,763,800.00	7.591

NBBL

FY	Investment in Govt. Securities	Current Assets	Ratio (%)
2061/62	2,212,535.72	10,464,177.61	21.144
2062/63	2,525,309.17	10,245,968.75	24.647
2063/64	826,834.54	6,450,677.37	12.818
2064/65	1,221,791.99	8,507,135.05	14.362
2065/66	1,715,829.21	10,838,910.86	15.830

HBL

FY	Investment in Govt. Securities	Current Assets	Ratio (%)
2061/62	5,469,728.94	25,812,031.05	21.191
2062/63	5,144,313.00	27,486,845.60	18.716
2063/64	6,454,873.47	31,747,414.66	20.332
2064/65	7,471,667.91	34,378,400.99	21.734
2065/66	4,212,300.38	37,255,082.19	11.307

5. Loan and Advances to Total Deposit Ratio**(Rs.In'000)****ADBN**

FY	Loans and Advances	Total Deposit	Ratio (%)
2061/62	22,638,255.30	27,223,046.16	83.158
2062/63	24,900,913.54	29,631,817.48	84.034
2063/64	27,252,333.32	32,416,358.36	84.070
2064/65	36,585,400.00	32,553,800.00	112.384
2065/66	38,271,000.00	35,154,800.00	108.864

NBBL

FY	Loans and Advances	Total Deposit	Ratio (%)
2061/62	9,626,913.54	12,125,578.26	79.393
2062/63	9,796,382.95	13,015,136.11	75.269
2063/64	9,169,440.56	9,385,949.55	97.693
2064/65	9,469,632.30	10,883,652.58	87.008
2065/66	9,130,505.84	9,997,697.43	91.326

HBL

FY	Loans and Advances	Total Deposit	Ratio (%)
2061/62	12,424,520.65	24,814,011.98	50.071
2062/63	16,997,997.05	26,490,851.64	64.166
2063/64	14,642,559.56	30,048,417.76	48.730
2064/65	19,497,520.48	31,842,789.36	61.231
2065/66	24,793,155.27	34,681,345.18	71.488

6. Total Investment to Total Deposit Ratio**(Rs.In'000)****ADBN**

FY	Total Investment	Total Deposit	Ratio (%)
2061/62	1,355,832.88	27,223,046.16	4.980
2062/63	1,511,330.02	29,631,817.48	5.100
2063/64	3,177,460.91	32,416,358.36	9.802
2064/65	4,788,700.00	32,553,800.00	14.710
2065/66	6,889,300.00	35,154,800.00	19.597

NBBL

FY	Total Investment	Total Deposit	Ratio (%)
2061/62	2,411,720.07	12,125,578.26	19.890
2062/63	2,661,833.50	13,015,136.11	20.452
2063/64	1,034,560.19	9,385,949.55	11.022
2064/65	1,389,901.50	10,883,652.58	12.771
2065/66	2,222,431.71	9,997,697.43	22.229

HBL

FY	Total Investment	Total Deposit	Ratio (%)
2061/62	11,692,341.56	24,814,011.98	47.120
2062/63	10,889,031.45	26,490,851.64	41.105
2063/64	11,822,984.56	30,048,417.76	39.346
2064/65	13,340,176.79	31,842,789.36	41.894
2065/66	8,710,690.65	34,681,345.18	25.116

7. Loans and Advances to Total Working Fund**(Rs.In'000)****ADBN**

FY	Loans and Advances	Total Working Fund	Ratio (%)
2061/62	22,638,255.30	39,893,794.63	56.746
2062/63	24,900,913.54	43,707,456.43	56.972
2063/64	27,252,333.32	45,348,247.15	60.096
2064/65	36,585,400.00	54,496,000.00	67.134
2065/66	38,271,000.00	60,829,300.00	62.915

NBBL

FY	Loans and Advances	Total Working Fund	Ratio (%)
2061/62	9,626,913.54	14,320,077.04	67.227
2062/63	9,796,382.95	15,045,417.82	65.112
2063/64	9,169,440.56	12,014,975.66	76.317
2064/65	9,469,632.30	13,402,850.06	70.654
2065/66	9,130,505.84	14,390,115.34	63.450

HBL

FY	Loans and Advances	total working fund	Ratio (%)
2061/62	12,424,520.65	28,444,805.49	43.679
2062/63	16,997,997.05	30,579,806.20	55.586
2063/64	14,642,559.56	34,314,867.93	42.671
2064/65	19,497,520.48	36,857,624.33	52.900
2065/66	24,793,155.27	40,046,685.89	61.911

8. Investment on Government Securities to Total Working Fund Ratio**(Rs. In '000)****ADBN**

FY	Investment on Govt. Securities	Total Working Fund	Ratio (%)
2061/62	198,191.55	39,893,794.63	0.497
2062/63	397,010.90	43,707,456.43	0.908
2063/64	1,759,614.73	45,348,247.15	3.880
2064/65	2,706,300.00	54,496,000.00	4.966
2065/66	3,474,000.00	60,829,300.00	5.711

NBBL

FY	Investment on Govt. Securities	Total Working Fund	Ratio (%)
2061/62	2,212,535.72	14,320,077.04	15.451
2062/63	2,525,309.17	15,045,417.82	16.785
2063/64	826,834.54	12,014,975.66	6.882
2064/65	1,221,791.99	13,402,850.06	9.116
2065/66	1,715,829.21	14,390,115.34	11.924

HBL

FY	Investment on Govt. Securities	Total Working Fund	Ratio (%)
2061/62	5,469,728.94	28,444,805.49	19.229
2062/63	5,144,313.00	30,579,806.20	16.823
2063/64	6,454,873.47	34,314,867.93	18.811
2064/65	7,471,667.91	36,857,624.33	20.272
2065/66	4,212,300.38	40,046,685.89	10.518

**9. Investment on Government Securities to Total Domestic Deposit Ratio
(Rs. In '000)**

ADBN

FY	Investment in Govt. Securities	Total Domestic Deposit	Ratio (%)
2061/62	198,191.55	27,223,046.16	0.728
2062/63	397,010.90	29,631,817.49	1.340
2063/64	1,759,614.73	32,416,358.36	5.428
2064/65	2,706,300.00	32,553,800.00	8.313
2065/66	3,474,000.00	35,154,000.00	9.882

NBBL

FY	Investment in Govt. Securities	Total Domestic Deposit	Ratio (%)
2061/62	2,212,535.72	11,806,864.03	18.739
2062/63	2,525,309.17	12,870,330.15	19.621
2063/64	826,834.54	9,249,121.62	8.940
2064/65	1,221,791.99	10,636,698.75	11.487
2065/66	1,715,829.21	9,817,114.63	17.478

HBL

FY	Investment in Govt. Securities	Total Domestic Deposit	Ratio (%)
2061/62	5,469,728.94	18,517,751.83	29.538
2062/63	5,144,313.00	19,818,342.19	25.957
2063/64	6,454,873.47	23,538,247.66	27.423
2064/65	7,471,667.91	25,495,146.91	29.306
2065/66	4,212,300.38	29,822,589.47	14.125

10. Investment on Shares and Debenture to Total Working Fund Ratio(Rs.In'000)

ADBN

FY	Investment on Shares and Debentures	Total Working Fund	Ratio (%)
2061/62	147,372.30	39,893,794.63	0.369
2062/63	147,372.30	43,707,456.43	0.337
2063/64	145,702.40	45,348,247.15	0.321
2064/65	129,656.40	54,496,000.00	0.238
2065/66	142,985.40	60,829,300.00	0.235

NBBL

FY	Investment on Shares and Debentures	Total Working Fund	Ratio (%)
2061/62	62,767.00	14,320,077.04	0.438
2062/63	64,798.00	15,045,417.82	0.431
2063/64	64,798.00	12,014,975.66	0.539
2064/65	56,707.50	13,402,850.06	0.423
2065/66	51,118.50	14,390,115.34	0.355

HBL

FY	Investment on Shares and Debentures	Total Working Fund	Ratio (%)
2061/62	39,908.80	28,444,805.49	0.140
2062/63	39,908.80	30,579,806.20	0.131
2063/64	73,423.86	34,314,867.93	0.214
2064/65	89,558.36	36,857,624.33	0.243
2065/66	93,883.36	40,046,685.89	0.234

11. Provision for Loan Loss Ratio**(Rs.In'000)****ADBN**

FY	Loan Loss Provision	Total Loans and Advances	Ratio (%)
2061/62	8,670,819.23	22,638,255.30	38.302
2062/63	8,409,832.95	24,900,913.54	33.773
2063/64	7,188,036.08	27,252,333.32	26.376
2064/65	5,456,200.00	36,585,400.00	14.914
2065/66	6,399,500.00	38,271,000.00	16.722

NBBL

FY	Loan Loss Provision	Total Loans and Advances	Ratio (%)
2061/62	1,839,223.16	9,626,913.54	19.105
2062/63	3,336,136.55	9,796,382.95	34.055
2063/64	4,760,427.42	9,169,440.56	51.916
2064/65	4,011,823.47	9,469,632.30	42.365
2065/66	2,425,562.72	9,130,505.84	26.565

HBL

FY	Loan Loss Provision	Total Loans and Advances	Ratio (%)
2061/62	1,026,647.62	12,424,520.65	8.263
2062/63	1,119,416.53	16,997,997.05	6.586
2063/64	795,726.82	14,642,559.56	5.434
2064/65	682,092.69	19,497,520.48	3.498
2065/66	726,363.82	24,793,155.27	2.930

12. Return on Loans and Advances**(Rs.In'000)****ADBN**

FY	Net Profit	Loans and Advances	Ratio (%)
2061/62	(78,632.82)	22,638,255.30	-0.347
2062/63	353,524.88	24,900,913.54	1.420
2063/64	1,058,448.59	27,252,333.32	3.884
2064/65	1,618,200.00	36,585,400.00	4.423
2065/66	1,238,000.00	38,271,000.00	3.235

NBBL

FY	Net Profit	Loans and Advances	Ratio (%)
2061/62	(781,929.58)	9,626,913.54	-8.122
2062/63	(1,797,159.37)	9,796,382.95	-18.345
2063/64	(1,061,579.50)	9,169,440.56	-11.577
2064/65	596,487.03	9,469,632.30	6.299
2065/66	2,158,104.14	9,130,505.84	23.636

HBL

FY	Net Profit	Loans and Advances	Ratio (%)
2061/62	308,275.17	12,424,520.65	2.481
2062/63	457,457.70	16,997,997.05	2.691
2063/64	491,822.91	14,642,559.56	3.359
2064/65	635,868.52	19,497,520.48	3.261
2065/66	752,834.74	24,793,155.27	3.036

13. Return on Total Working Fund Ratio**(Rs.In'000)****ADBN**

FY	Net Profit	Total Working Fund	Ratio (%)
2061/62	(78,632.82)	39,893,794.63	-0.197
2062/63	353,524.88	43,707,456.43	0.809
2063/64	1,058,448.59	45,348,247.15	2.334
2064/65	1,618,200.00	54,496,000.00	2.969
2065/66	1,238,000.00	60,829,300.00	2.035

NBBL

FY	Net Profit	Total Working Fund	Ratio (%)
2061/62	(781,929.58)	14,320,077.04	-5.460
2062/63	(1,797,159.37)	15,045,417.82	-11.945
2063/64	(1,061,579.50)	12,014,975.66	-8.835
2064/65	596,487.03	13,402,850.06	4.450
2065/66	2,158,104.14	14,390,115.34	14.997

HBL

FY	Net Profit	Total Working Fund	Ratio (%)
2061/62	308,275.17	28,444,805.49	1.084
2062/63	457,457.70	30,579,806.20	1.496
2063/64	491,822.91	34,314,867.93	1.433
2064/65	635,868.52	36,857,624.33	1.725
2065/66	752,834.74	40,046,685.89	1.880

14. Return on Equity**(Rs.In'000)****ADBN**

FY	Net Profit	Equity	Ratio (%)
2061/62	(78,632.82)	(5,989,268.14)	1.313
2062/63	353,524.88	(835,358.16)	-42.320
2063/64	1,058,448.59	1,273,090.63	83.140
2064/65	1,618,200.00	6,140,800.00	26.352
2065/66	1,238,000.00	9,994,200.00	12.387

NBBL

FY	Net Profit	Equity	Ratio (%)
2061/62	(781,929.58)	234,575.83	-333.338
2062/63	(1,797,159.37)	(1,562,583.55)	115.012
2063/64	(1,061,579.50)	(2,624,163.05)	40.454
2064/65	596,487.03	(2,191,448.30)	-27.219
2065/66	2,158,104.14	1,112,242.48	194.032

HBL

FY	Net Profit	Equity	Ratio (%)
2061/62	308,275.17	1,413,046.46	21.816
2062/63	457,457.70	1,766,175.62	25.901
2063/64	491,822.91	2,146,499.66	22.913
2064/65	635,868.52	2,512,991.60	25.303
2065/66	752,834.74	3,119,880.54	24.130

15. Total Interest Earned to Total Outside Asset Ratio (Rs.In'000)**ADBN**

FY	Total Interest Earned	Total Outside Assets	Ratio (%)
2061/62	3,915,224.98	22,638,255.30	17.295
2062/63	4,033,544.58	24,900,913.54	16.198
2063/64	4,623,095.86	27,252,333.32	16.964
2064/65	4,738,900.00	36,585,400.00	12.953
2065/66	4,542,100.00	38,271,000.00	11.868

NBBL

FY	Total Interest Earned	Total Outside Assets	Ratio (%)
2061/62	876,508.41	9,626,913.54	9.105
2062/63	758,131.69	9,796,382.95	7.739
2063/64	982,196.61	9,169,440.56	10.712
2064/65	828,276.00	9,469,632.30	8.747
2065/66	1,337,112.31	9,130,505.84	14.644

HBL

FY	Total Interest Earned	Total Outside Assets	Ratio (%)
2061/62	1,446,468.09	12,424,520.65	11.642
2062/63	1,626,473.82	16,997,997.05	9.569
2063/64	1,775,582.62	14,642,559.56	12.126
2064/65	1,963,647.47	19,497,520.48	10.071
2065/66	2,342,198.18	24,793,155.27	9.447

16. Total Interest Earned to Total Working Fund Ratio (Rs.In'000)**ADBN**

FY	Total Interest Earned	Total Working Fund	Ratio (%)
2061/62	3,915,224.98	39,893,794.63	9.814
2062/63	4,033,544.58	43,707,456.43	9.229
2063/64	4,623,095.86	45,348,247.15	10.195
2064/65	4,738,900.00	54,496,000.00	8.696
2065/66	4,542,100.00	60,829,300.00	7.467

NBBL

FY	Total Interest Earned	Total Working Fund	Ratio (%)
2061/62	876,508.41	14,320,077.04	6.121
2062/63	758,131.69	15,045,417.82	5.039
2063/64	982,196.61	12,014,975.66	8.175
2064/65	828,276.00	13,402,850.06	6.180
2065/66	1,337,112.31	14,390,115.34	9.292

HBL

FY	Total Interest Earned	Total Working Fund	Ratio (%)
2061/62	1,446,468.09	28,444,805.49	5.085
2062/63	1,626,473.82	30,579,806.20	5.319
2063/64	1,775,582.62	34,314,867.93	5.174
2064/65	1,963,647.47	36,857,624.33	5.328
2065/66	2,342,198.18	40,046,685.89	5.849

17. Total Interest Earned to Total Operating Income Ratio (Rs.In'000)
ADBN

FY	Total Interest Earned	Total Operating Income	Ratio (%)
2061/62	3,915,224.98	4,244,185.18	92.249
2062/63	4,033,544.58	4,243,501.85	95.052
2063/64	4,623,095.86	4,904,946.91	94.254
2064/65	4,738,900.00	5,192,400.00	91.266
2065/66	4,542,100.00	5,124,600.00	88.633

NBBL

FY	Total Interest Earned	Total Operating Income	Ratio (%)
2061/62	876,508.41	1,083,173.98	80.920
2062/63	758,131.69	955,233.40	79.366
2063/64	982,196.61	1,226,031.47	80.112
2064/65	828,276.00	1,214,455.08	68.201
2065/66	1,337,112.31	1,665,127.53	80.301

HBL

FY	Total Interest Earned	Total Operating Income	Ratio (%)
2061/62	1,446,468.09	1,757,885.57	82.285
2062/63	1,626,473.82	2,042,376.58	79.636
2063/64	1,775,582.62	2,160,773.04	82.173
2064/65	1,963,647.47	2,421,239.88	81.101
2065/66	2,342,198.18	2,922,825.94	80.135

18. Credit Risk Ratio (Rs.In'000)
ADBN

FY	Non Performing Loan and Advances	Total Loan and Advances	Ratio (%)
2061/62	6,003,992.67	22,638,255.30	26.521
2062/63	6,858,994.32	24,900,913.54	27.545
2063/64	6,185,295.00	27,252,333.32	22.696
2064/65	3,427,900.00	36,585,400.00	9.370
2065/66	4,256,200.00	38,271,000.00	11.121

NBBL

FY	Non Performing Loan and Advances	Total Loan and Advances	Ratio (%)
2061/62	1,832,943.79	9,626,913.54	19.040
2062/63	2,927,108.50	9,796,382.95	29.879
2063/64	3,645,982.54	9,169,440.56	39.762
2064/65	3,004,940.76	9,469,632.30	31.732
2065/66	1,807,385.87	9,130,505.84	19.795

HBL

FY	Non Performing Loan and Advances	Total Loan and Advances	Ratio (%)
2061/62	1,001,347.32	12,424,520.65	8.059
2062/63	1,040,757.82	16,997,997.05	6.123
2063/64	641,615.31	14,642,559.56	4.382
2064/65	477,229.22	19,497,520.48	2.448
2065/66	551,309.63	24,793,155.27	2.224

19. Interest Risk Ratio**(Rs.In'000)****ADB**

FY	Interest Bearing Assets	Interest Bearing Liabilities	Ratio (%)
2061/62	22,638,255.30	25,987,124.99	87.113
2062/63	24,900,913.54	28,352,321.75	87.827
2063/64	27,252,333.32	30,153,498.69	90.379
2064/65	36,585,400.00	30,156,400.00	121.319
2065/66	38,271,000.00	32,054,700.00	119.393

NBBL

FY	Interest Bearing Assets	Interest Bearing Liabilities	Ratio (%)
2061/62	9,626,913.54	10,811,267.39	89.045
2062/63	9,796,382.95	11,654,854.19	84.054
2063/64	9,169,440.56	8,238,631.28	111.298
2064/65	9,469,632.30	9,522,925.17	99.440
2065/66	9,130,505.84	8,313,557.76	109.827

HBL

FY	Interest Bearing Assets	Interest Bearing Liabilities	Ratio (%)
2061/62	12,424,520.65	19,182,807.64	64.769
2062/63	16,997,997.05	20,974,669.53	81.041
2063/64	14,642,559.56	24,083,811.20	60.798
2064/65	19,497,520.48	26,413,386.50	73.817
2065/66	24,793,155.27	30,797,946.78	80.503

Appendix B: Calculation of Trend Values

1. Trend of Total Deposit

Amount in Rs. '000

Year	ADBN	NBBL	HBL				
x	y_1	y_2	y_3	$x*y_1$	$x*y_2$	$x*y_3$	x^2
2062	27,223,046	12,125,578	24,814,012	56,133,921,182	25,002,942,372	51,166,492,703	4,251,844
2063	29,631,817	13,015,136	26,490,852	61,130,439,461	26,850,225,795	54,650,626,933	4,255,969
2064	32,416,358	9,385,950	30,048,418	66,907,363,655	19,372,599,871	62,019,934,257	4,260,096
2065	32,553,800	10,883,653	31,842,789	67,223,597,000	22,474,742,578	65,755,360,028	4,264,225
2066	35,154,800	9,997,697	34,681,345	72,629,816,800	20,655,242,890	71,651,659,142	4,268,356
Σx	Σy_1	Σy_2	Σy_3	$\Sigma x*y_1$	$\Sigma x*y_2$	$\Sigma x*y_3$	Σx^2
10320	156,979,822	55,408,014	147,877,416	324,025,138,098	114,355,753,506	305,244,073,063	21,300,490

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

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

Trend Values

	ADBN	NBBL	HBL
$a =$	(3,845,929,213)	1,329,409,010	(5,148,299,607)
$b =$	1,878,549	(638,725)	2,508,660

Predicted Values of Total Deposit for

$$\hat{y} = a + b * \hat{x}$$

Year	ADBN	NBBL	HBL
2062	27,638,866	12,359,052	24,558,162
2063	29,517,415	11,720,327	27,066,823
2064	31,395,964	11,081,603	29,575,483
2065	33,274,513	10,442,878	32,084,144
2066	35,153,062	9,804,154	34,592,804
2067	37,031,611	9,165,429	37,101,464
2068	38,910,160	8,526,705	39,610,125
2069	40,788,710	7,887,980	42,118,785
2070	42,667,259	7,249,256	44,627,446
2071	44,545,808	6,610,531	47,136,106

2. Trend of Loan and Advances

Amount in Rs. '000

Year	ADBN	NBBL	HBL				
x	y_1	y_2	y_3	$x*y_1$	$x*y_2$	$x*y_3$	x^2
2062	22,638,255	9,626,914	12,424,521	46,680,082,429	19,850,695,719	25,619,361,580	4,251,844
2063	24,900,914	9,796,383	16,997,997	51,370,584,633	20,209,938,026	35,066,867,914	4,255,969
2064	27,252,333	9,169,441	14,642,560	56,248,815,972	18,925,725,316	30,222,242,932	4,260,096
2065	36,585,400	9,469,632	19,497,520	75,548,851,000	19,554,790,700	40,262,379,791	4,264,225
2066	38,271,000	9,130,506	24,793,155	79,067,886,000	18,863,625,065	51,222,658,788	4,268,356
Σx	Σy_1	Σy_2	Σy_3	$\Sigma x*y_1$	$\Sigma x*y_2$	$\Sigma x*y_3$	Σx^2
10320	149,647,902	47,192,875	88,355,753	308,916,220,034	97,404,774,826	182,393,511,005	21,300,490

Trend Values

	ADBN	NBBL	HBL
$a=$	(8,834,945,437)	281,797,008	(5,604,002,856)
$b=$	4,294,998	(131,957)	2,723,679

Predicted Values of Loan and Advances for

FY	ADBN	NBBL	HBL
2062	21,339,585	9,702,488	12,223,792
2063	25,634,583	9,570,532	14,947,471
2064	29,929,580	9,438,575	17,671,151
2065	34,224,578	9,306,618	20,394,830
2066	38,519,576	9,174,662	23,118,509
2067	42,814,573	9,042,705	25,842,188
2068	47,109,571	8,910,749	28,565,868
2069	51,404,568	8,778,792	31,289,547
2070	55,699,566	8,646,835	34,013,226
2071	59,994,564	8,514,879	36,736,905

3. Trend of Total Investment

Amount in Rs. '000

Year	ADBN	NBBL	HBL				
x	y_1	y_2	y_3	$x*y_1$	$x*y_2$	$x*y_3$	x^2
2062	1,355,833	2,411,720	11,692,342	2,795,727,399	4,972,966,784	24,109,608,297	4,251,844
2063	1,511,330	2,661,834	10,889,031	3,117,873,831	5,491,362,511	22,464,071,881	4,255,969
2064	3,177,461	1,034,560	11,822,985	6,558,279,318	2,135,332,232	24,402,640,132	4,260,096
2065	4,788,700	1,389,902	13,340,177	9,888,665,500	2,870,146,598	27,547,465,071	4,264,225
2066	6,889,300	2,222,432	8,710,691	14,233,293,800	4,591,543,913	17,996,286,883	4,268,356
Σx	Σy_1	Σy_2	Σy_3	$\Sigma x*y_1$	$\Sigma x*y_2$	$\Sigma x*y_3$	Σx^2
10320	17,722,624	9,720,447	56,455,225	36,593,839,848	20,061,352,037	16,520,072,264	21,300,490

Trend Values

	ADBN	NBBL	HBL
$a=$	(2,957,119,866)	342,609,089	736,200,142
$b=$	1,434,430	(165,051)	(351,216)

Predicted Values of Total Investment for

FY	ADB N	NBBL	HBL
2062	675,664	2,274,191	11,993,476
2063	2,110,094	2,109,140	11,642,261
2064	3,544,525	1,944,089	11,291,045
2065	4,978,955	1,779,039	10,939,829
2066	6,413,386	1,613,988	10,588,614
2067	7,847,816	1,448,937	10,237,398
2068	9,282,246	1,283,886	9,886,182
2069	10,716,677	1,118,835	9,534,967
2070	12,151,107	953,784	9,183,751
2071	13,585,538	788,733	8,832,535

4. Trend of net profit

Amount in Rs. '000

Year	ADB N	NBBL	HBL				
x	y_1	y_2	y_3	$x*y_1$	$x*y_2$	$x*y_3$	x^2
2062	(78,633)	(781,930)	308,275	(162,140,875)	(1,612,338,794)	635,663,401	4,251,844
2063	353,525	(1,797,159)	457,458	729,321,827	(3,707,539,780)	943,735,235	4,255,969
2064	1,058,449	(1,061,580)	491,823	2,184,637,890	(2,191,100,088)	1,015,122,486	4,260,096
2065	1,618,200	596,487	635,869	3,341,583,000	1,231,745,717	1,313,068,494	4,264,225
2066	1,238,000	2,158,104	752,835	2,557,708,000	4,458,643,153	1,555,356,573	4,268,356
Σx	Σy_1	Σy_2	Σy_3	$\Sigma x*y_1$	$\Sigma x*y_2$	$\Sigma x*y_3$	Σx^2
10320	4,189,541	(886,077)	2,646,259	8,651,109,842	(1,820,589,792)	5,462,946,189	21,300,490

Trend Values

	ADB N	NBBL	HBL
$a=$	(803,697,065)	(1,707,871,752)	(219,808,932)
$b=$	389,794	827,371	106,753

Predicted Values of Net Profit for

FY	ADB N	NBBL	HBL
2062	58,320	(1,831,958)	315,746
2063	448,114	(1,004,587)	422,499
2064	837,908	(177,215)	529,252
2065	1,227,702	650,156	636,005
2066	1,617,496	1,477,527	742,758
2067	2,007,290	2,304,899	849,511
2068	2,397,084	3,132,270	956,264
2069	2,786,879	3,959,641	1,063,017
2070	3,176,673	4,787,013	1,169,770
2071	3,566,467	5,614,384	1,276,523

Appendix C: Testing of Hypotheses

Hypothesis 1: Loan and Advances to Total Deposit Ratio

Fiscal Year	ADB	NBBL	HBL			
	x_1	x_2	x_3	$(x_1)^2$	$(x_2)^2$	$(x_3)^2$
2055/56	83.16	79.39	50.07	6,915.32	6,303.32	2,507.06
2056/57	84.03	75.27	64.17	7,061.78	5,665.45	4,117.22
2057/58	84.07	97.69	48.73	7,067.71	9,543.97	2,374.60
2058/59	112.38	87.01	61.23	12,630.26	7,570.37	3,749.18
2059/60	108.86	91.33	71.49	11,851.42	8,340.45	5,110.60
	$\sum x_1$	$\sum x_2$	$\sum x_3$	$\sum x_1^2$	$\sum x_2^2$	$\sum x_3^2$
	472.51	430.69	295.69	45,526.49	37,423.56	17,858.66

T	$\sum x_1 + \sum x_2 + \sum x_3$	1,198.89
c.f.	T^2/N	95,821.84
SST	$\sum x_1^2 + \sum x_2^2 + \sum x_3^2 - c.f$	4,986.87
SSC	$\sum x_1^2/n_1 + \sum x_2^2/n_2 + \sum x_3^2/n_3 - c.f$	-75,660.09
SSE	SST – SSC	80,646.97
MSC	SSC/(k-1)	-37,830.05
MSE	SSE/(N-k)	6,720.58
F calculated	MSC/MSE	-5.63
F(TAB)(2,12)		3.89

Decision

H0 : REJECT
H1 : ACCEPT

Hypothesis 2: Return on Loan and Advance

Fiscal Year	ADB	NBBL	HBL			
	x_1	x_2	x_3	$(x_1)^2$	$(x_2)^2$	$(x_3)^2$
2055/56	-0.35	-8.12	2.48	0.12	65.97	6.16
2056/57	1.42	-18.35	2.69	2.02	336.54	7.24
2057/58	3.88	-11.58	3.36	15.08	134.04	11.28
2058/59	4.42	6.30	3.26	19.56	39.68	10.64
2059/60	3.23	23.64	3.04	10.46	558.67	9.22
	$\sum x_1$	$\sum x_2$	$\sum x_3$	$\sum x_1^2$	$\sum x_2^2$	$\sum x_3^2$
	12.61	-8.11	14.83	47.25	1,134.90	44.54

T	$\sum x_1 + \sum x_2 + \sum x_3$	19.33
c.f.	T^2/N	24.92
SST	$\sum x_1^2 + \sum x_2^2 + \sum x_3^2 - c.f$	1,201.76
SSC	$\sum x_1^2/n_1 + \sum x_2^2/n_2 + \sum x_3^2/n_3 - c.f$	220.42
SSE	SST – SSC	981.35
MSC	SSC/(k-1)	110.21
MSE	SSE/(N-k)	81.78
F calculated	MSC/MSE	1.35
F(TAB)(2,12)		3.89

Decision

H0 : ACCEPT
H1 : REJECT

Hypothesis 3: The total interest earned to total outside asset ratios

Fiscal Year	ADB	NBBL	HBL			
	x_1	x_2	x_3	$(x_1)^2$	$(x_2)^2$	$(x_3)^2$
2055/56	17.29	9.10	11.64	299.11	82.90	135.54
2056/57	16.20	7.74	9.57	262.39	59.89	91.56
2057/58	16.96	10.71	12.13	287.78	114.74	147.04
2058/59	12.95	8.75	10.07	167.78	76.50	101.43
2059/60	11.87	14.64	9.45	140.86	214.46	89.24
	$\sum x_1$	$\sum x_2$	$\sum x_3$	$\sum x_1^2$	$\sum x_2^2$	$\sum x_3^2$
	75.28	50.95	52.86	1,157.91	548.49	564.82

T	$\sum x_1 + \sum x_2 + \sum x_3$	179.08
c.f.	T^2/N	2,137.97
SST	$\sum x_1^2 + \sum x_2^2 + \sum x_3^2 - c.f$	133.24
SSC	$\sum x_1^2/n_1 + \sum x_2^2/n_2 + \sum x_3^2/n_3 - c.f$	-1,683.73
SSE	SST – SSC	1,816.97
MSC	SSC/(k-1)	-841.86
MSE	SSE/(N-k)	151.41
F calculated	MSC/MSE	-5.56
F(TAB)(2,12)		3.89

Decision

H0 : REJECT
H1 : ACCEPT