

CHAPTER I

INTRODUCTION

1.1 Background of the Study

Bank is financial institution that deals with monetary transactions. Bank collects savings as deposits from general sectors, invests this fund in productive sectors and earns interest. The term “Bank” has been derived from the Latin word “Bancus” which refers to the bench on which the banker would keep his money and his records. Some people trace its origin to the French word “Banque” and the Italian word “Banca” which means a bench used for keeping. Lending and exchanging of money or coins in the market place by moneylenders and moneychangers. After a long period, the word bench was pronounced as bank (Bhandari, 2003).

Nowadays, we have seen many banks working in towns and villages. They offer different types of services to the people. In past days, the functions of bank were limited to acceptance of deposits and granting of loans to the public. With the passage of time, there is change in the concept of banking. The principal types of banking in modern industrial world are commercial banking and central banking.

Banking plays a significant role in the development of the economy. It provides an effective payment and credit system, which facilitates the channeling of the funds from the surplus sending units (savers) to the deficit spending units (investors) in the economy. Bank is the financial institution that is mainly confined to finance for the development of the trade, commerce and industry. The banking services now a days perform the essential and valuable function for the development of the nation.

Some of the definitions of bank given by different writers are as follows:

“A bank is an organization whose principal operations are concerned with the accumulation of the temporarily idle money of the general public for the purpose of advancing to other for expenditure.”

- As referred by, Bhandari (2003, Kent)

“A bank is an establishment for custody of money which it pays out customers order.”

- As per Oxford Dictionary, 1992

“The banker’s business is to take the debts of other people to offer his own in exchange, and thereby create money.”

- As referred by, Bhandari (2003, Crowther)

“A bank is an institution whose debts (bank deposits) are widely accepted in settlement of their people’s debt to each other.”

- Sayers, 1997

A bank is an institution which deals with money by accepting various types of deposit, disbursing loan and rendering other financial services. Because of providing wide range of services, banks are essential.

ADBN is an autonomous organization largely owned by Government of Nepal. The bank has been working as a premier rural credit institution since the last three decades, contributing a more than sixty-seven percent share of institutional credit supply in the country. Hence, rural finance is the principal operational area of ADBN. Under the ADBN Act, the bank is entrusted with the responsibilities of initiating effective approaches for the agricultural development. The bank is committed raise the economic condition of farmers by availing credit and capital inputs in easy and smooth manner. Nepalese agriculture sector has to play dual role in our economy: to increase production to feed the increasing population better and at the same time to provide capital for other sector in order to promote national economy. So, it has supervised SFDP (Small Farmer Development Programme) to uplift the socio-economic status of Small Farmers, undertaking banking functions to generate resources and also provide training to the beneficiaries and the bank staff. The SFDP started as an institutional undertaking in Nepal in the mid 70s after FAO\Asian survey on Agrarian Reform and Rural Development (ASARD) organized a multi agency and multi-disciplinary field workshops in a number of countries including Nepal. Under the funding of FAO/UNDP two pilot projects were

initially tested in Nepal by the bank in 1975/76. Within a few years of its pilot operation, the programme proved to be highly effective for the small farmers and other disadvantaged group of the society. The bank has gradually expanded the programme on the national scale and the number of sub-Project offices reached 127 by the fiscal year 2010/2011 (ADBN, 2068).

The enactment of Bank and Financial Institution Ordinance (BAFIO) in February 2004 abolished all Acts related to financial institutions including the ADBN Act, 1967. In line with the BAFIO, ADBN has been incorporated as a public limited company on July 14, 2005. Thus, ADBN operates as a “A” category financial Institution under the legal framework of BAFIO and the Company Act, 2053.

In order to generate its resources for the bank’s ever expanding lending programme, the bank started commercial banking activities beginning 1984. With encouraging saving collection made by the first banking branch at Ratnapark in 1984 A.D. the bank has expanded its urban banking office network and has now 42 banking offices in the major urban areas. To strengthen resource base of the bank, compensate the loss incurred by its rural offices and maintain liquidity, the bank started commercial lending from 1991 A.D. The main modes of commercial lending of the bank are: Overdraft, Hire Purchase, Business Loan, Contract Loan, Industry Loan and Service Loan. The ADBN is only development bank in Nepal which has been adopting a ‘Three- Window System’ to operate its activities in the following areas; i) development Financing Sector ii) Target Group Sector through small farmer Development Programme and iii) Commercial Banking Sector.

Over the years, the bank has accelerated the pace of its activities and has established itself as a specialized agricultural financing institution. The bank is lending in terms of credit disbursement, loan recovery and expansion of field level offices. With a network of 243 offices (Head Offices, Supervision and Controlling, Main Branch, Sub Branch and Training Centers) spread all over the country and about 3595 staff, the bank has been serving farmers and entrepreneurs.

1.2 Focus of the Study

This study is basically focused on the credit management of ADBN and its overall financial performance. ADBN plays a tremendous role in a developed or developing nation and also helps to improve the economic sectors of the country. The main motive of banks is to make profit by providing quality services to the customers. The study focuses on the analysis of the loan investment made in potential sectors and effective collection of banks. It also focuses on evaluating the deposits utilization of the bank in terms of loans and advances and investments and its contribution in the profitability of the bank. Bank holds the deposit of many persons, government establishment and business units. They make fund available through their lending and investing activities to borrowing individual's business firms and government establishment. In doing so, they assist both the flow of goods and services from the producers to consumers and the financial activities of the government. They provide a large portion of medium of exchange and they are the media through which monetary policy is affected. These facts show that the banking system of nation is important to the functioning of the economy. Financial institution is currently viewed as catalyst in the process of economic growth of country. A key factor in the development of an economy is the mobilization of the domestic resources and intermediaries, the financial institution helps the process of resources mobilization. The importance of financial institutions in the economy has of late grown to an enormous extent. The government, in turn, is required to regulate their activities. So, the financial policies are implemented as per the requirement of the country.

Therefore, this researcher has focused this resource mainly to highlight and examine the credit management of the selected bank ignoring other aspects of bank transaction. To highlight the credit management of the bank, the research is based on the certain statistical tools i.e. mean with a view to find out the true picture of the bank. The main objective of this research is to analyze the credit management through the use of appropriate financial tool.

1.3 Statement of the Problem

The performance of ADBN in Nepal is not so satisfactory because of its lengthy lending procedure and being not familiar to the general problem. A sound banking system with wide spread of branches throughout the country is essential to meet the commerce, trade, industry and agriculture needs of the country. It can be visualized that the banking development in Nepal is yet in its infant stage. So we have to go still a long way to make the country rich with a sound and modern banking system.

Loan disbursement of potential sectors and effective collection is the source of profit. Without effective collection the loan would not be effective. Because of lack of good lending opportunities, bank is facing problems of over liquidity. Nowadays, banks have increasing number of deposits in fixed and saving accounts but have decreasing trend in lending behaviors. So, this has caused major problems in banks. Nowadays, due to competition among banks, the interest rate charged for loan is in decreasing trend and the recovery of the bank's credit is going towards negative trends. So, in general, the main problem of the study is to analyze the 'credit management' or credit disbursement recovery position for loss and write off of credit. On the basis of this general problem, the following problems were raised and tried to look for the answer through the study;

- 1) What is the total fund available of bank?
- 2) How does bank mobilize its loan and advances in loan disbursement, loan collection and loan outstanding?
- 3) What is the relationship between loan disbursement, loan collection and loan outstanding?
- 4) What is the situation of trend line in loan disbursement, loan collection and loan outstanding?
- 5) What is the impact of deposit with cash and bank balance, loan and advances and investment?
- 6) What is the profitability situation of ADBN?

1.4 Objectives of the Study

Each and every research study possesses certain objectives. Research without any specific objectives will be worthless. The basic objective of the study is to have true insight into the credit management aspect (practice of disbursing loans and recovery) of the ADBN. This aims to examine its efficiency, effectiveness, state mobilization and sincerity in disbursing and recovery of loan as well. The specific objectives of the study are as follows:-

- ❖ To analyze the allocation of fund available.
- ❖ To analyze the loan disbursement, loan collection and loan outstanding on different sectors of loans and advances.
- ❖ To study the relationship between loan disbursement, collection and loan outstanding.
- ❖ To know the trend line of loan disbursement, loan collection and loan outstanding of bank.
- ❖ To study the relation of Cash and Bank balance, Loan and Advances and Investments with Deposit.
- ❖ To know the profitability situation of bank.

1.5 Significance of the study

This study, first attempts to measure the efficiency of bank in its lending procedures. ADBN has been facing many more financial problems relating to loan like recollection, relating better investment, relating to investment in non earning assets etc. To overcome the above problems, financial analysis is key tool. It gives the clear vision about the ADBN's current position and helps to make the better prospective plan and policies for its perpetual growth and success.

Basically, it is beneficial because:

- ❖ The study is helpful to shareholders, investors and other creditors to identify the productivity of their funds in ADBN.
- ❖ The study is helpful to the management of the bank to analyze the effectiveness of their credit management.
- ❖ The study is prescriptive to the policy maker while formulating the new credit policies.

- ❖ The study is helpful for general public to know about the overall financial position of ADBN.

After the completion, this report will be kept in the library, which plays the role of reference to the students making the similar study in future.

1.6 Limitation of the Study

This study is conducted for the partial fulfillment of Master's of Business Studies. Being prepared for academic purpose it is delimited within the following study boundary;

- ❖ This study is concerned only with the credit management of ADBN.
- ❖ This study is based only on secondary data of balance sheet, income statement and cash flow statements.
- ❖ This study covers the data of only last five years from F/Y 2062/63 to F/Y 2066/2067.
- ❖ This study has been analyzed with the help of financial tools and a few statistical tools.

1.7 Organization of the Study

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

First chapter contains the introduction part of research. In introduction part, background, Focus of the study, Statement of the problem, Objectives of the study, Significance of the study and Limitation of the study are included.

Second chapter contains review of literature. Here theoretical analysis and brief review of literature is available. It also includes discussion on the conceptual frame work and published and unpublished master degree thesis.

Third chapter explains about research methodology which includes Research design, Population and sample, Sources of data, Data collection procedure and Tools of Data collection.

Chapter four deals with the analysis of data related with study and present the findings of the study. Data processing, data analysis and interpretation are given in this chapter.

Chapter five includes summary, conclusions and recommendations. At the end of this research, Bibliography and Appendices are attached.

CHAPTER II

REVIEW OF LITERATURE

This chapter consists of two parts; theoretical review and review of related studies; theoretical reviews deal with various components of the credit management of ADBN. Review of related studies presents the review of dissertation, reports, journal and other related published and unpublished materials.

2.1 Theoretical Review

Theoretical review deals with the evolution of the bank, concept of development bank, objectives of ADBN, function of ADBN, concept of credits, types of credit, lending policies and procedures of the bank, interest rate of loan of ADBN, security and margin policy, recovery policies and procedures of ADBN.

2.1.1 Evolution of the Bank

Bank is the institution which works in taking and giving money known as financial transactions. So, Bank is an institution dealing in financial transactions. Truly speaking the concept of bank was evolved with commercial idea. The bank which works under commercial functions is commercial bank. According to the history, the king of Kathmandu 'Gun Kam Dev' borrows money to rebuild his kingdom in 723 A.D. (Dali, 2037). Another historical example as to the pre-modern banking system is found when Rana Prime minister Randip singh was administering Nepal in 1880 A.D. During his regime one financial institution named by Tejarath was established to give loan facilities to the governmental staff and to afford loan facilities to the public in general in term of 5% interest. At the beginning the service was for the government services holders repayable in installment basis to their salary. Later, the service was extended to the normal people as well. During the prime ministership of Chandra Shamsar, Tejarath Adda extended its services by opening its branches outside Kathmandu valley. The history of modern financial system began by the replacement of Tejarath Adda by Nepal Bank Limited, which was established in 1937 A.D. (1994 B.S.), as the first commercial bank in Nepal. Nepal Bank Limited had a responsibility of attracting people towards banking sector from predominant money lenders and expanding banking services. It paid more attention to profit

generating business and preferred to open branches in urban as it is a commercial bank.

Government however had onus of stretching banking services to the nook and corner of the country and also managing financial system in a proper way. Thus, Nepal Rastra Bank (NRB) was set up on 2013.01.14 as a central Bank under Nepal Rastra Bank Act 2012 B.S. Since then; it has been functioning as the government's bank and has contributed to the growth of financial sector. After the down of democracy in 1951 A.D., first development institution Nepal Industrial Development Corporation was evolved in 1959 A.D. as a development bank. The first institutional credit supply arrangement for agricultural development in Nepal was made in 1963A.D. in the form of co-operative bank. Such co-operative bank provides loan only to the co-operative, so the functions and role of co-operative bank was limited. In 1966 A.D., Land Reform Saving Corporation (LRSC) was established as a part of land reform programme launched by HMG in 1964 A.D. The corporation was functioning in the field of agricultural financing by providing loans to the needy farmers and did not have its own share capital. Therefore, Agricultural Development Bank was evolved in 1968 A.D. under the Agricultural Development Act 1967. Now, Agricultural Development Bank has been registered under Public Limited Company on July 14, 2005.

The main source of institutional credit for the rural community and for agriculture is ADBN. Later in 1973 A.D., the LRSC was also merged with ADBN. The bank inherited the assets and liabilities of the co-operative bank, which was established in 1963 A.D. ADBN is an autonomous organization largely owned by Government of Nepal. The bank has been working as a premier rural credit institution since last three decades contributing a more than sixty-seven percent share of institutional credit supply in the country. The ADBN has total 140 billions of an authorized capital of which Rs. 119 billions Paid up capital, (ADBN, 2068) of the total the government owns 53.50%, and 46.50% belongs to individuals and co-operative. The main sources of the ADBN capital are share capital (18.3%), customer's deposits (63.97%), external borrowing (3.5%) and other (14.2%).

2.1.2 Concept of Development Bank

The bank organized under the special development bank Act with views to assist directly in the development of country is called development bank. These banks are organized for helping in the development of special areas of the country. The bank established to help in agriculture sector is Agricultural Development Bank.

Development banks are established for the development of particular sector of the country like rural areas, industrial sector and agriculture sector etc. providing financial and technical assistance. Such act to perform special functions. Such type of banks provides the investment to particular institute to develop particular sectors. Nepal Industrial Developments Corporation, Agricultural Development Bank, Rural Development Bank, NIC etc. are some of the examples of the development banks of Nepal. All development banks are established under Development Bank Act 2052 B.S. in Nepal. But now ADBN has been registered under Public Company Limited on July 14, 2005. Under the ADBN Act, the bank is entrusted with the responsibilities of initiating effective approaches for the development of agriculture. The bank committed to raise the economic condition of farmers by available credit and a capital input in easy and smooth manner. Hence, development bank plays the role of catalyst. It is an institutional mechanism which functions as an active agent for promoting a balance and viable process of economic development.

2.1.3 Objectives of ADBN

To overcome the financing problems faced by the co operative banks and individual, The ADBN came into with the followings objectives:

- a. To attain production, credit. Irrigation and marketing loan to the co-operatives and rural banks.
- b. To encourage the establishment of rural banks.
- c. To provide loan to individuals and other for the purchase of agriculture inputs, tractors and agriculture implements. It also finances for construction of Govar-Gas plants.
- d. To provide loan to individuals to start agriculture business like poultry farming, dairy production, sheep farming and animal husbandry.

- e. To provide banking facilities to co-operatives, individuals and others in the remote areas.
- f. To protect the farmers from high interest rates and provide them timely and adequate credit according to their needs and purpose of investment.

2.1.4 Functions of ADBN

To solve the financial problems, to support the farmers to uplift their living standard as well as the economic growth of the country, ADBN was established with broader aspects. To fulfill its objective, it has been operating followings activities:

- a. Provide short, medium and long term agriculture loan to individual farmers, group of farmers, corporate bodies and village committee.
- b. Provide loan and technical services for the purchase of inputs and capital items such as fertilizers, insecticides, feeds, farm machinery, irrigation equipment, canal construction, boring of pumps sets and sprinklers.
- c. Provide loan for the purchase of livestock.
- d. Finance for the agro-based small cottage industries.
- e. Finance of cold storage, ware housing and other marketing facilities.
- f. Finance for capital goods necessary for the development of alternative sources of energy like solar energy, bio-gas and wind energy.
- g. Organize and Supervise the Small Farmers Development Programs to increase the existing knowledge of the farmers about modern techniques of agriculture.
- h. Under take banking functions to generate resources.
- i. Provide training to the beneficiaries and the bank staff to support each other.
- j. Collect capital to mobilize domestic resources.
- k. Credit to customer.

2.1.6 Concept of Credit

Credit is the amount of money lent by the creditor (bank) to the borrower (customers) either on the basis of security or without security. Sum of the money lent by a bank, is known as credit (Oxford Advanced Learners Dictionary, 1992). Credit and advances is an important item on the asset side of the balance sheet of a commercial bank. Bank

earns interest on credits and advances, which is one of the major sources of income for banks. Bank prepares credit portfolio, otherwise it will not only add bad debts but also affect profitability adversely (Varshney and Swaroop, 1994).

Credit is financial assets resulting from the delivery of cash or other assets by a lender to a borrower in return for an obligation of repay on specified on demand. Banks generally grants credit on four ways; Overdraft, Cash Credit, Direct Credit and Discounting of Bills (Chhabra and Taneja, 1991).

2.1.7 Types of Credit

Overdrafts

It denotes the excess amount withdrawn over their deposits.

Cash Credit

The credit is not given directly in cash but deposit account is being opened on the name of credit taker and the amount credited to that account. In this way, every credit creates deposit.

Term Credit

It refers to money lent in lump sum to the borrowers. It is principle form of medium term debt financing having maturities of 1 to 8 years. Barely and Myers (1991), urge that bank credits with maturities exceeding 1 years are called term credits. The firm agrees to pay interest based on the bank's prime rate and to repay principle in the regular installments. Special patterns of principle payments over time can be negotiated to meet the firm's special needs (Richard, 1996). It is granted for starting or expanding the new project industry, or any other venture requiring fixed assets investment. It is also meet the borrower's long term fixed assets requirement.

Working Capital Credit

Working capital denotes the difference value between current assets and current liabilities. It is granted to the customers to meet their working capital gap for supporting production process. A natural process develops in funds moving through the cycle are generated to repay a working capital credit.

Installment Credit

It is well known installment policy. These days most of the financial institutions applied this policy for the disbursement of loans in vehicles and home appliances.

Housing Credit

Financial institution adopts this policy as residential building, commercial complex, construction of warehouse etc. It is given to those who have regular income or can earn revenue from housing project itself.

Project Credit

It is granted to the customer as per project viability. The borrower oneself invests certain proportion to the project from their equity and rest will be financed by bank. "Construction credits are short-term credits made to developers for the purpose of completing proposed projects. Maturities on construction credit range from 12 months to as long as 5 years, depending on the size of the specific project." (Johnson, 1940:83).

Consortium Credit

No single financial institution grants loan to the project due to single borrower limit or other reason and two or more such institutions may consent to grant credit facility to the project of which is applied as consortium loan. It reduces the risk of project among them. Financers have equal charge on the projects assets.

Credit Cards and Revolving Line of Credit

Banks are more singly utilizing charge cards and revolving lines of credit to make unsecured customer credit. Revolving credit line lowers the cost of making credit since operating and processing cost are produced. Due to standardization, centralized department processes revolving credits resulting reduction on administration cost. Continued borrowing arrangement enhances cost advantages. Once the credit line is established, the customer can borrow and repay according to his needs and the bank can provide the fund to the customer at lower cost.

Letter of Credit (L/C)

It is used on behalf of the customer (buyer, importer) in favor of the support (seller) for the import of goods, services starting to pay certain sum of money on the submission of certain documents complying the stipulated terms and conditions as

per the agreement of L/C. It is also known as importers letter of credit since the bank of importer do not open separate L/C for the trade of same commodities. (Johnson, 1940).

2.1.8 Lending Policies and Procedure of the Bank

ADBN aims at providing loans for agriculture production activities and other Agro-based business. The bank generally makes loans against collateral security up to limit of 60% to 80% of the value of the collateral. The individual farmers who are willing to borrow should fill up the prescribed application form of loan provided by the bank. The application form should be accompanied by the supporting documents like loan ownership, receipt of land, revenue payment and receipt of rent payment of a tenant.

After receiving the complete loan application form, the bank employee visits the borrower to inspect about the project sites and its suitability, security to assets etc. If the inspector finds the project technically feasible and sound and economically viable, the bank advances loan to such project. However, the bank has relaxed loan analysis requirement for some extent.

2.1.9 Loan Transaction of Agriculture Development Bank

ADBN provides loan for different purposes which are;

Business Loan

Business Loan is provided for the buying and selling of commodity such as machinery tools, agriculture equipment, and construction materials etc. generally, such loan is provided till last one year but the regular monthly payee can renew the loan as per their rule. If the loan of more then twenty five thousand is accepted, 1% service charge is charged of the accepted loan.

Industrial Loan

To open and for the establishment of agriculture and non-agriculture industries such loan is provided. Industrial loan is provided as fixed capital and current capital. Fixed capital is provided till last five years for the purchase of building and machine, factory, machinery tools and equipment. In such fixed capital loan the installment of principal should be paid according to mention time and fixed capital loan can't be

renewed. In the same way current capital loan is provided for the purchase of needed raw materials, labor, electricity, water etc and also for monthly expenses. Current capital provided for the period not exceeding twelve months and such loan can be withdrawn when needed and can be repaid if you have money. Similarly, current capital loan can be renewed if monthly interest is paid regularly.

Over Draft Loan

Generally, Over Draft Loan can be counted as non productive sector loan. If deposit is more than the loan investment in banks, in such situation when transaction of bank may increase than only over draft loan is provided. For draft loan there should be 50% collateral or should be that persons own family house. Such loan is provided for the period of 6 month. That loan can be renewed if monthly interest is paid as per bank rule.

Contract Loan

For the purpose of construction of contract the contract loan is given to institution, Nepal Government, Public Limited Company and Private Limited Company. For repayment of loan the bank adds three months more than the period of contract agreement.

Demand Loan

For construction, contract, survey to commence any work etc. the businessman may need fund at once so, the loan is provided in such case which is known as demand loan.

Hire-Purchase Loan

Such loan is provided for the hire purchase of transport like bus, minibus, truck, van, tanker, taxi, tempo, etc. this loan is provided for the period of four years and the principal and interest has to be paid within 48 installments. Renew of hire purchase loan can't be done. So, monthly interest and monthly, three monthly or half yearly the principal have to be paid.

Service Loan

Service loan is provided for those institution which is established in service motive like for running promotion of tourism, hotels, lodge, resort, trekking, travels, rafting etc. On the basis of the nature of farm- business ADBN has categorized 12 purposes of agricultural loan, which are- Cereal Crop, Cash Crop, Marketing, Agricultural

Tools, Irrigation, Livestock, Bio-gas, Land Development, Horticulture, Go down and Cold storage, Tea and Coffee, Housing.

2.1.10 Interest Rate of Loan of ADBN

The interest rate of loan is fixed by the management committee of ADBN according to the order given by central Bank, Nepal Rastra Bank time to time. So, the rate of interest may differ time to time. The bank has to publish the interest rate of loan through media three monthly. The ratio of interest of loan of ADBN is given in the table;

Interest Rate of Loan of ADBN

S.N.	Loan Objective	Interest rate per annual
1	Overdraft	
	a. Individual	16.50
	b. Institution	16
2	Demand	16
3	Contract	16
4	Business	12.5
5	Hire Purchase	16.5
6	Industrial	13.5
7	Service	14.5

Sources; ADBN, Head office, Ktm. (as of 2068)

2.1.11 Security and Margin Policy

ADBN requires a security either in terms of immovable property, like land building and other fixed assets or movable property like car and bus. The security is maintained at a margin of minimum 30% of total valuation for medium and long term loans. For collateral security guarantee, arrangement from the government or arrangement from the individual's institutions is also acceptable.

2.1.12 Procedure of Lending

Every bank has its own set of procedures to be followed before providing loan. Similarly, ADBN has its own procedures to be followed while providing loan. Individuals, co-operative or corporate body willing to obtain the loan from ADBN should fill up the prescribed loan application provided by the bank. The application form should be accompanied with the supporting documents such as certificate of land ownership, receipt of land revenue payment or certificate of government registration for corporate and co-operative organization.

After getting the receipt of the complete loan application form filled by the customers, the bank, employee visit the borrower's in their places-and inspect about the project site and security of assets, the suitability or the project and also gather information crucial to the economic analysis of the project. The bank advances loans given only to those borrowers, whose project seems to appear technically feasible and economically viable as per decision made by the loan committee.

2.1.13 Recovery Policies and Procedures of ADBN

The ADBN not only has its lending policies and procedures but also its own set of recovery policies and procedures. ADBN provides the loan for many purposes to small farmers and there are different terms of loan of which are mostly collected in their maximum lending period. The collection of loan made by ADBN from borrower very much depends on the purpose they have spent. The loan installment payment period may be extended depending upon some specific circumstances. ADBN has a loan recovery manual 1993, which was issued in 1993 A.D. Under the ADBN loan recovery rules and regulations act 1976, and ADBN act 1967. This loan recovery manual helps to collect the loan amount effectively within its loan installment period.

The policies and procedure of loan recovery of ADBN has taken into different consideration like.

- Objectives of loan recovery manual 1993.
- Authority of bank, if breaking the agreement
- Provision of interest
- Penalty of interest

- Provision for memorandum letters
- Provision for project
- Correction of payment period
- Borrowers name publication in magazine
- Provision for auction of collateral
- Doubtful loan
- Remission of loan.

2.1.14 Procedure of Recovery

Every bank must be able to collect the amount it has spent on various purposes. The bank must be capable of collection its principle and interest amount from the borrowers for the smooth and effective operation and future investment. The ADBN has developed certain policy and procedure for the recovery program. This has already been expressed above in the chapter.

The bank provides loan under the supervision of collateral of the projects and also as per loan committee decision. The supervisor of the bank monitors its lending project from time to time. Bank also issues memorandum letter from time to time whether it's before or after the loan installment period. Officials visit for the loan recovery, when the products are harvesting and sold.

The bank should take legal provision to sell. If the borrower fails to repay the loan amount in time, bank should take action of the collateral to recover loan amount. Bank may increases loan installment period. If there is appears natural disaster like: earthquake, rain fall, flood, disease of natural climates or political crisis or increases in cost of the project operation, bank provides remission of principle and interest amount increases loan installment period, increases loan amount for the improvement of the project.

But if the bank is unable to recover its loan amount then it makes lie blacklist of the borrower and decides the bad debts. Even after doing so if it is unable to recover its loan amount then it has to adopt legal process and procedures or any other process like: selling or auction of collateral and other property from the borrowers.

2.2 Review of Related Studies

Present section deals about concept or findings of earlier scholars on the concerned field of the study. It helps to develop the study as link in a chain of research that is developing and emerging the knowledge about the related field. The effort has been made in this present section to examine and review some related articles published in different economic journals, bulletins, magazines and newspapers.

Agriculture, the backbone of the economy, trade, the engine of growth and industry, and the precondition to modernization are developed by the financial and technical assistance of the banking system. The development of these sectors accelerates the pace of economic growth. The economic growth, in turn leads to increase in national income and alleviation of poverty.

The bank at present has to face many challengers to smoothly carry out its programs; bank activities cannot be compared with other financial institutions. The bank has three window operations, Small farmer development program, Agriculture credit and Commercial banking have been provided loan assistance to rural poor farmers, entrepreneurs and business on various purposes. It has presented itself as a mode in banking atmosphere of Nepal.

Agriculture has been a difficult area for discussion because of the position taken by USA and European Community (EC) on agricultural subsidies. Under the Agreement, increased market access would be provided and internal domestic support would be reduced for the agriculture sector. Developing countries will be eligible for special treatment. Agricultural subsidies can be given in many ways. Farmers can be given a high price for their output as compared to world prices. Another method is to subsidize farm inputs like water, fertilizers, power and credit. Direct subsidies can also be given to farmers. Under the agreement an index known as “Aggregate Measurement of Support (AMS)” has been introduced which seeks to provide the overall permitted measure of subsidies allowed as a percentage of gross agriculture production (Jain, 2006).

Shrestha, R. (2007) in her article "Lending operations of commercial banks of Nepal and its impact on GDP" presented the objectives to make an analysis of contribution of commercial banks' lending to the Gross Domestic Product (GDP) of Nepal. She has set a hypothesis that there has been a positive impact of lending of commercial banks to the GDP. In research methodology, she has considered GDP as the dependent variable and various sectors of lending viz. agriculture, industrial, commercial, service, general and social sectors 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 by the lending of commercial banks in various sectors of economy, except service sector investment."

Enya, Vincent Ekpe and Alimba, J. O, (2008) carried out their paper on the supply of commercial banks credit to the agricultural sector in Nigeria from 1986 to 2005. Time series published data collected include agricultural GDP, commercial banks agricultural credit; cash reserve ratio and commercial banks lending rate. A multiple regression analysis approach involving the use of ordinary least (OLS) estimation techniques was adopted. Repayment ability of agricultural sector has a positive and significant effect on commercial banks credit supply to agriculture while lending rate has a positive and insignificant effect on banks agricultural credit supply. Cash reserve ratio has a negative and significant effect on commercial banks agricultural credit supply. Commercial bank agricultural credit supply is inelastic with respect to all the explanatory variables. Productivity in agricultural sector should be increased to attract commercial banks credit. Cash reserve ratio should be reduced to empower commercial banks to lend to agriculture.

Chand, (2004) has submitted his thesis on "Credit disbursement and repayment of Agriculture Development Bank Nepal." His research objective is to see the repayment situation of bank. Other objective of study was to find out the rate of growth of investment and to explain possible causes of none and delayed repayment. The study used primary as well as secondary data for the analysis.

The methodology used includes financial tools such as ratio analysis and statistical tools such as correlation coefficient. The study has found that there is systematic relationship between credit disbursement and repayment and the coefficient of correlation value as calculated is 0.94 which shows significance relationship. In addition, he found repayment situation is satisfactory on production inputs and agro-based industry, ware houses and marketing percentage of repayment due to the firm mechanization and irrigation and tea horticulture and livestock, poultry and fisheries in much less satisfactory. Chand has recommended that the bank should play a significant role in such direction as to full fill the credit demands of rural areas. For effective recovery from the borrowers or clients credit should be channeled through the borrowers groups.

Tamang, (2005) studied the comparative study of credit management on Himalayan Bank Ltd. and NABIL Bank Ltd. in his thesis entitled "A Comparative Study on Credit management in Himalayan Bank Ltd. and NABIL Bank Ltd". To explore the credit management he tried to asses the existing credit practices, examine the credit efficiency, analyze the industry environment and the relationship among loans and advances, non performing loan and net profit. The study was based on secondary as well as primary data. He found from the study that credit practices and credit efficiency was relatively better in NABIL Bank Ltd. as compared to HBL for the reason that the ratio analysis designed for credit practices and credit efficiency scored relatively in better for NABIL Bank Ltd. He found that the correlation coefficient between non-performing loans did not have high implication in NABIL Bank Ltd. and HBL was found to be 0.157 and -0.716 respectively. He further concluded that trend of non-performing loan did not have high implication in NABIL Bank Ltd. while there was a significant impact of non-performing loan in net profit in HBL. He described in his primary information that industry environment as well as the management quality was relatively better in NABIL Bank Ltd. as compared to HBL. Lastly, he recommended to the bank management that proper level of portfolio should be maintained so that profitability position will be maximized with regard to credit practices. Similarly, the bank management of both the banks is recommended to maintain proper level of the balance with regard

to credit efficiency. He also suggests the bank management of HBL that it should manage its loan more effectively so that the percentage of non-performing loan in HBL would be found very high. Finally, he recommended to the future researchers to focus into non financial indicators job satisfaction, customer satisfaction, stockholders support, government rating, supervisor is team work, human resource development, human resource planning, human resource management, and job designation etc. as influencing factors for credit management.

Aryal, (2006) has submitted a thesis entitled "A Evaluation of credit Investment and recovery of Finance public Enterprise in Nepal" a case study of ADBN. His research's major objectives were to analyze the loan disbursement and recovery pattern of ADBN. Other important objectives were to analyze possible causes for nonpayment of loan on prescribed time. He had used financial tools like liquidity ratios, assets management ratios, profitability ratio as well as for supporting the study, statistical tools such as mean, Standard deviation, coefficient of variation, correlation, trend analysis etc to analyze his study. His major findings were yearly increase on credit disbursement is higher than that of collection. The bank's actual credit disbursement, collection and outstanding are increasing in decreasing rate. Targeted credit collection and disbursement fixed by planning and project department is not significantly different than the actual. Most of the customers are unaware of the policy of the bank. He recommends the borrowers should be about the credit, its use and its payment procedures and schedule. Greater attention should be given to increase the credit collection and to collect old outstanding amount of credit and renewal of it. To accelerate the collection, credit should be followed continuously in a regular interval of time. The behavior of the personnel should be strictly supervised in granting credit, in proper investment proposal because most of the bad credit disbursement is due to weak decision of the personnel.

Misra, (2007) entitled her Thesis "Credit management of Everest Bank Limited." The main objective of this study is to evaluate the credit management of Everest Bank Limited, illustrate that liquidity position; cash reserve ratio shows the more liquidity position. Cash and bank balance to current assets ratio shows that the bank's sound ability to meet the daily cash requirement of their customers deposit.

That is why liquidity position of the bank is better. In the aspect of profitability position, interest income to interest expenses ratio shows the more profitable salivation. In addition, total income to total expenses ratio shows the overall predominance of the bank is satisfactory operating income. Return on loan advances is showing position that is more profitable one of the EBL. Analysis of the assets management ratio, loan advances to total assets ratio shows the better performance but loan and advances to total deposit position is minimum than the averages. Whereas investment in loan and advances is safely and not taking more risk. That's why assets management position of the bank shows better performance in the latest year. This is to recommend that Cash and bank balance of EBL is high. Bank's efficiency should be increased to satisfy the demand of depositor at low level of cash and bank balance does not provide return to the bank. Therefore, some percentage of the cash and bank balance should be invested in profitable sectors. Banks should open their branches in the remote area with the objective to provide the banking services and minimum deposit amounts should be reduced.

Shrestha, (2007) conducted a study named "Deposit Collection and Loan Position in Agriculture Development Bank of Nepal." The main objective of the study is to measure the trend of deposit collection and loan position in ADBN and also to have a practical knowledge of what she had learnt as the theory. The study is based on secondary data and both financial study, it is found that the total deposit has been increasing in each type of deposit of the bank. It is found that in case of current deposits, the contribution to total deposit is declining in each year and every year which is serious matter for the bank because it is a free of lost financing. The total amount of loan disbursement trend has increased which shows increasing demand for agriculture credit. Apart from this, she has found, the short term loan has been continuously increasing in each year. It shows that short term loan has highest growth rate which suggests the increasing attraction and requirement of the short term loan. Loan collection of short term is higher than that of medium and long term to the total loan disbursement.

Limbu, (2008) has submitted his thesis on "Credit Management of NABIL Bank Ltd." His research objective is to determine the impact of deposit in liquidity and its

effect on lending practices. Both primary and secondary data were used for the study. The study has used financial tools such as liquidity ratios, assets management ratios, profitability ratios and statistical tools such as mean, standard deviation, coefficient of variation, trend analysis etc for supporting the study. In the aspects of liquidity ratio he found that NABIL is able to maintain in the good liquidity position. In assets management ratio credit and advance to fixed deposit ratio indicates the high contribution made by lending and investing activities. Non-performing assets to total assets ratio indicates that the bank is able to obtain higher lending opportunity. In the aspect of profitability ratio, net profit to gross income shows the bank is able to obtain higher efficiency. In addition, operating profit to loan and advances shows the better profitability position of the bank. This is recommended that cash and bank balance is high. Bank efficiency should be increased to satisfy the demand of depositor at low level of cash and bank balance does not provide return to the bank. Therefore some percentage of the cash and bank balance should be invested in profitable sectors.

Poudel, (2010) has submitted a thesis entitled “An analysis on loan disbursement and repayment pattern of ADBN.” The basis objective of the study is to gain insight into the loan disbursement of ADBN and to evaluate the projected and actual loan disbursement and repayment. The study is based on secondary data. As per requirements of the study statistical analysis has used to find out current trend of loan investment and collection of ADBN. The study has found that loan repayment amount depends upon loan disbursement. The correlation coefficient between these two variables is 0.999 which express strong positive relationship between these variables. The coefficient of determination is 0.998. In addition, she found that there is positive correlation between targeted loan disbursements and targeted loan repayment. The study has recommended that the correlation coefficient between loan disbursement and repayment is positive, which is positive signal for the organization. That is better for profitability of the organization. The bank should try to increase the relationship for the better improvement.

Dhakal, (2011) has carried out a study on Credit Management “A Comparative Study of Himalayan Bank Ltd. and NABIL Bank Ltd.” The general objective of the

study is to analyze the volume of contribution on profit made by credit and advances. To analyze the non-performing assets and their impacts is her other important objective. The study based on secondary data. To achieve the objective of the study both financial tools and statistical tools such as coefficient of correlation analysis and least square liner trend has used. The study has found that the total loan and advances and net profit of both banks were positive. It shows positive relationship between two variables. It reveals that the movement of loan and advances and net profit is found in similar direction. In addition, she found the ratio of non-performing assets of NABIL is decreasing trend except the last year and the ratio of HBL is rapidly decreasing over the study period. The study suggested that both banks should maintain the existing trend of increasing volume of profit to loan and advance. In the aspects of liquidity ratio she found that the both banks have high liquidity ratio. This is recommended that higher liquidity ratio indicate idle money, no efficient use of capital less earning per share so the bank should invest their excess funds in income generating areas.

2.3 Research Gap

Research means to carry out the real problem on the particular topic. Regarding the objective, the topic credit management is selected. The study has true insight into the credit management aspect of the ADBN. The present study attempts to analyze the progressive statement about the loan activities of the bank. This aims to examine its efficiency, effectiveness, systematization and sincerity in disbursing and recovery of loan. In this study, the researcher has tried to use concurrent data than former researcher. This presentation is also unique one to clarify the role of credit management of ADBN. To achieve this main objective, various financial and statistical tools have been used to make this research complete. Trend of different activities has been calculated by using trend analysis, which helps the top level management of the bank to forecast the figures of future. So this study is a new research work.

CHAPTER III

RESEARCH METHODOLOGY

Research methodology is presented for achieving the predetermined objective which is already stated. Various statistical and financial instruments have been used for the required purpose. The main objective of the study is to analyze the performance of ADBN. This research methodology has primarily sought the evaluation of the credit practices of the targeted bank i.e. Agricultural Development Bank. This section includes the research design, nature and sources of data, population and sampling, data processing and analysis of the study.

3.1 Research Design

The basic aim of this study is to analyze the soundness of ADBN in relation to credit disbursement and recovery as well. It examines and assesses the financial performance of ADBN through the collection, evaluation, verification and analysis of data systematically for the improvement and exploration of certain facts.

Research design is outline, plan and strategy of investigator to obtain answer to research question and to control variance. It is a proper framework, procedure, technique that helps to do research in any field at a minimum cost and time. So, analytical and descriptive research design has been applied for the study. The related data with topics are collected through financial statement of the ADBN and other available source.

3.2 Data Collection and Procedure

The Study is mainly based on secondary data. So, the major sources of secondary data for this study are as follows.

- a. Annual reports of the banks.
- b. Published and Unpublished bulletins, reports of the banks.
- c. Previous studies and reports.
- d. Unpublished official records.
- e. Various Internet websites.
- f. Other published materials.
- g. Library study.

Formal and informal talks with the senior staff of the company were also helpful to obtain the information of the related problem.

3.3 Population and Sample

Population covers the whole or total of observation that has been selected for the study sample is the part of population which represents population with regards to the study.

There are altogether 88 development banks and 32 commercial banks in Nepal listed in Nepal Stock Exchange. ADBN has been selected for the study by using Judgment or purposive sampling. Only the required statements like income statement, balance sheet and cash flow statements have been taken for analyzing financial performance of bank. Such statements of the recent past five years have been collected and used for analyzing bank's financial performance similarly. Some of the popular and well accepted tools and techniques have been used to analyze and interpret the financial condition and performance of the bank i.e. comparative financial analysis, cash and funds flow analysis, trend analysis, ratio analysis correlation analysis etc. It has been error in this study so that the required objective can be achieved.

3.4 Data Processing and Analysis

To make study more specific and reliable, some of well-accepted and importance financial and statistical tools have been used to measure the financial performance of agriculture development bank, Nepal. Those tools and techniques are:

Financial Tools

Statistical Tools

3.4.1 Financial Tools

Financial tools measure the financial strength and weakness of the bank. To make rational interpretations, keeping with the objectives of the study, various financial tools were used. The major financial tool used in this thesis is ratio analysis.

3.4.1.1 Ratio Analysis

Ratio analysis can be defined as an analysis of financial statement with help of ratios. A ratio analysis is simply one number expressed in terms of another and as such it is expressed as the quantitative relationship between any two numbers. The management can reach to important decisions by using ratio analysis. In fact, any given data in the financial statement are not important in itself to make as real important. It is to be expressed in referring to other figures with the help of ratio. Ratio can be expressed in terms of percentage, proportion and as a coefficient. By ratio analysis, we come to know about liquidity position, solvency position and help for the future forecasting, decision making, corrective action, and communication and cost control.

Here are the following ratios that are calculated for finding the current financial positions of ADBN. They are:

A. Liquidity Ratio

Liquidity refers to the ability of a firm to meet its short-term or current obligations. So liquidity ratios are used to measure the ability of a firm to meet its short-term obligations and from them the present cash solvency as well as ability to remain solvent in the event of adversities of the same can be examined (Van Horne, 1999).

Inadequate liquidity can lead to unexpected cash short falls that must be covered at inordinate costs, thus reducing profitability. In the worst case, inadequate liquidity can lead to the liquidity insolvency of the institution. On the other hand, excessive liquidity can lead to low asset yields and contribute to poor earnings performance (Scott, 1992).

To find out the ability of bank to meet their short-term obligations, which are likely to mature in the short period, these ratios are calculated. The following ratios are developed under the liquidity ratios to identify the liquidity position.

a. Cash and Bank Balance to Total Deposit

Bank's liquidity capacity can be measured on the basis of cash and bank balance, which are the most liquid assets. Cash and bank balance to total deposit ratio

measures the percentage of most liquid assets to pay depositors immediately. This ratio is computed dividing the amount of cash and bank balance by the total deposits. It can be shown as:

$$\text{Cash and Bank balance to Total Deposit Ratio} = \frac{\text{Cash and Bank Balance}}{\text{Total Deposit}}$$

Where cash and bank balance includes cash on hand, foreign cash on hand, cheques and other cash items and balance held abroad. Total deposit consists of deposits on current account, saving account, fixed account, money at call and short notice and other deposits.

b. Cash and Bank Balance to Current Assets Ratio

Cash and bank balance are the liquid current assets. This ratio measures the percentage of liquid fund with the current assets. Higher ratio indicates the bank's sound ability to meet the daily cash requirement of their customers' deposit. If bank maintains low ratio, bank may not be able to make the payment of against cheque. So bank has to maintain cash and bank balance to current assets ratio properly.

$$\text{Cash and Bank Balance to Current Assets Ratio} = \frac{\text{Cash and Bank Balance}}{\text{Current Assets}}$$

B. Activity/Efficiency Ratio

It is also known as turnover or efficiency ratio or assets management ratio; measures how efficiently the firm employs the assets. Turnover means; how many numbers of times the assets flow through a firm's operations and into sales (Kulkarni, 1994). Greater rate of turnover or conversion indicates more efficiency of a firm in managing and utilizing its assets, being other things equal. Various ratios are examined under this heading.

a. Loan and Advances to Total Deposit Ratio

Banks utilize the outsider's fund for profit generation purpose. Loan & advances to total deposit ratio shows whether the banks are successful to utilize the outsiders' funds (i.e. total deposits) for the profit generating purpose as loan & advances or not. Generally, a high ratio reflects higher efficiency to utilize outsider's fund and vice-versa. The ratio can be calculated by using following formula.

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

b. Investment on Shares and Debentures to Total Deposit Ratio

Banks are investing into share and debenture of other companies. This ratio shows the investment of banks on shares and debentures of other companies in terms of total deposit. It can be formulized as:

$$\text{Invest on Shares and Debentures to Total Deposit Ratio} = \frac{\text{Invest on Share and Debenture}}{\text{Total Deposit}}$$

c. Investment on Government Securities to Total Deposit Ratio

This ratio is very important to know the extent to which the banks are successful in mobilizing their total fund on different types of government Securities to maximize its income. It can be presented as:

$$\text{Invest on Govt. Security to Total Deposit Ratio} = \frac{\text{Investment on Government Sec.}}{\text{Total Deposit}}$$

Where, investment of government securities involves treasury bills and development bonds etc.

C. Profitability Ratio

Profit is the difference between revenues and expenses over a period of time. A company should earn profit to survive and to grow over a long period of time. So profits are essential, but profit earning is not the ultimate aim of company and it should never be earned at the cost of employees, customer and society.

Profitability ratios are the indicators of degree of managerial success in achieving firm's overall goals (Pradhan, 1996). It shows the overall efficiency of the business concern. The following ratios are calculated under the profitability ratios:

a. Return on Loan and Advances Ratio

It measures the earning capacity of a bank from provided loan and advances. This ratio is calculated dividing net profit (loss) by the total amount of loan and advances. We have:

$$\text{Return on Loan and Advances Ratio} = \frac{\text{Net Profit (Loss)}}{\text{Loan and Advances}}$$

b. Return on Total Assets Ratio

This ratio shows the relationship of Net profit and total assets and is to determine how efficiently the total assets have been used by the management. This ratio indicates the ability of generating profit per rupees of total assets. It also evaluates the present return on the total assets as a guide for return expected on future purchase of assets. Higher the ratio shows the more efficient operating of management and lower the ratio shows the low efficient operating of management. This ratio is computed by;

$$\text{Return on Total Assets Ratio} = \frac{\text{Net Profit (Loss)}}{\text{Total Assets}}$$

c. Total Interest Earned to Total Interest Paid Ratio

Total interest earned to total interest paid ratio measures the gap between interest rates offered and interest rate charged. NRB has restricted the gap between the interest taken in loan, advances and interest offered in deposits. The credit creation power of commercial banks has high impact on this ratio.

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

3.4.2 Statistical Tools

For supporting the study, statistical tools such as Mean, Standard deviation, Coefficient of variation, Correlation and trend analysis tools have been used under it.

3.4.2.1 Arithmetic Mean (Average)

Averages are statistical constants, which enable us to comprehend in a single effort the significance of the whole (Gupta, 2000). It represents the entire data by a single value. It provides the list and lives the eagle eye view of the huge mass of un-widely numerical data. It is calculated as:

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

Where,

\bar{X} = Arithmetic mean or mean value

n = Number of observations

$\sum X$ = Sum of the observations

3.4.2.2 Standard Deviation (S.D.)

The standard deviation is the square root of mean squared deviations from the arithmetic mean and is denoted by S.D. or (Shrestha, 1991). It is used as absolute measure of dispersion or variability. It is calculated as:

$$= \sqrt{\frac{\sum (x - \bar{x})^2}{n}}$$

Where,

= Standard deviation

3.4.2.3 Coefficient of variation (C.V.)

The coefficient of variation (C.V.) is the relative measure based on the standard deviation and is defined as the ratio of the standard deviation to the mean expressed in percent (Shrestha, 1991). It is independent of units. Hence it is a suitable measure for comparing variability of two series with same or different units. A series with smaller C.V. is said to be less variable or more consistent or more homogeneous or more uniform or more stable than the others and vice versa. It is calculated as:

$$C.V. = \frac{\dagger}{\bar{X}} \times 100\%$$

Where,

\bar{X} = Mean

† = Standard Deviation

3.4.2.4 Correlation Coefficients (r)

Correlation may be defined as the degree of linear relationship existing between two or more variables. These variables are said to be correlated when the change in the

value of one results change in another variable. Correlation is of three types. They are: Simple, Partial and Multiple Correlations. Correlation may be positive, negative or zero. Correlation can be classified as linear or non-linear. Here we study multiple correlations only. The measurement degree of relationship between two or more than two variables is called multiple correlations. In this statistical tool, we have to put one variable is dependent and other rest becomes independent. We can compute the multiple correlation coefficients $r_{3,12}$.

$$r_{3,12} = \sqrt{\frac{r_{23}^2 + r_{13}^2 - 2 \times r_{12} r_{13} r_{23}}{1 - r_{12}^2}}$$

3.4.2.5 Trend analysis

Time series is used to measure the change of financial, economical as well as commercial data. The least square method to trend analysis has been used in measuring the trend analysis. This method is widely used in practice. The straight line trend of a series of data is represented by the following formula.

$$\text{Liner trend line } (Y_c) = a + bx$$

Here,

Y is the dependent variable, a is y intercept or value of y when $x = 0$, b is the slope of the trend line or amount of change that comes in y for a unit change in x.

Where,

$$a = \text{average, } \frac{\sum y}{n}$$

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

CHAPTER IV

PRESENTATION AND DATA ANALYSIS

4.1 Presentation and Analysis of Data

This chapter is devoted to the presentation, analysis, interpretation, and scoring of the empirical findings of the study through definite course of research methodology. To achieve the stated objectives of the study, researcher has tabulated the available data in different charts, tables and analyzed using tools wherever necessary and applicable stated in the research methodology.

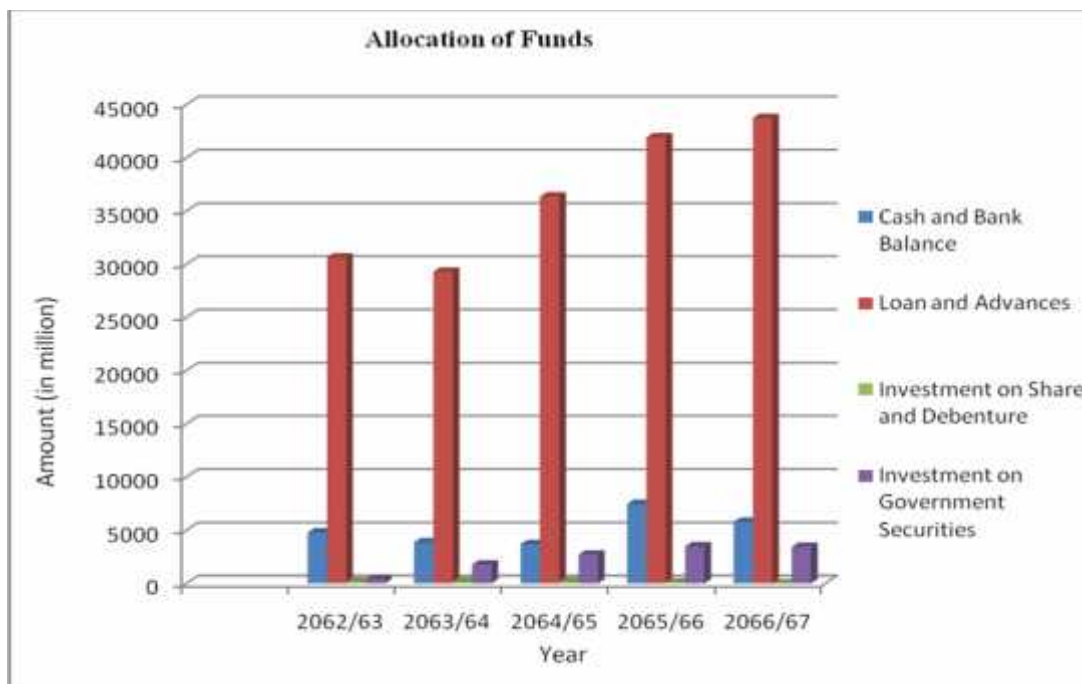
4.1.1 Allocation of Funds of ADBN

Table 4.1
Allocation of Funds Amount (in millions)

Year	Total Fund Available	Cash and Bank Balance		Loan and Advances		Investment on Share and Debenture		Investment on Government Securities	
		Amount	%	Amount	%	Amount	%	Amount	%
2062/63	35924.0	4772.0	13.28	30608.0	85.20	147.0	0.41	397.0	1.11
2063/64	35036.0	3851.0	10.99	29281.0	83.57	145.0	0.41	1759.0	5.02
2064/65	42860.0	3674.0	8.57	36336.0	84.78	144.0	0.34	2706.0	6.31
2065/66	52925.0	7452.0	14.08	41912.0	79.19	88.0	0.17	3473.0	6.56
2066/67	52931.0	5773.0	10.91	43730.0	82.62	2.0	0.00	3426.0	6.47

Source: Annual Report of ADBN, 2068

Figure 4.1
Allocation of Funds



Above table and figure shows the total fund available of ADBN in different sectors. Out of total fund the highest fund has been invested in loan and advances sectors. It is Rs.30608 million (85.20%) in F/Y 2062/63 which is highest in terms of percentage but in terms of amount it is highest in F/Y 2066/67 which is Rs.43730 million (82.62%). Funds invested in investment on share and debenture is less as comparison to others. It shows that ADBN has been reducing its funds in investment on share and debenture from Rs.147 million (0.41%) to Rs.2 million, which is 0 in percentage from F/Y 2062/63 to F/Y 2066/67 respectively. Funds invested in investment on government securities is Rs. 397 million (1.11%) to Rs. 3426 million (6.47%) from F/Y 2062/63 to F/Y 2066/67 respectively, which shows increasing state. Funds remain in cash and bank balance is Rs.4772 million to Rs.5773 million, which is 8.57% to 14.08% from F/Y 2062/63 to F/Y 2066/67 respectively.

4.1.2 Purpose Wise Analysis of Loan Disbursement, Loan Collection and Loan Outstanding

ADBN disburse loan in different purpose, which are;

- Agriculture Loan

- Manufacturing and Construction
- Wholesale and Retail Business
- Entertainment and Other Services
- Consumption Loan and
- Others

Others sector includes all other minor sectors including Mines, Transportation and Communication, Electric tools Installation, Finance Insurance and fixed Assets, Local Government and others.

4.1.3 Purpose Wise Analysis of Loan Disbursement

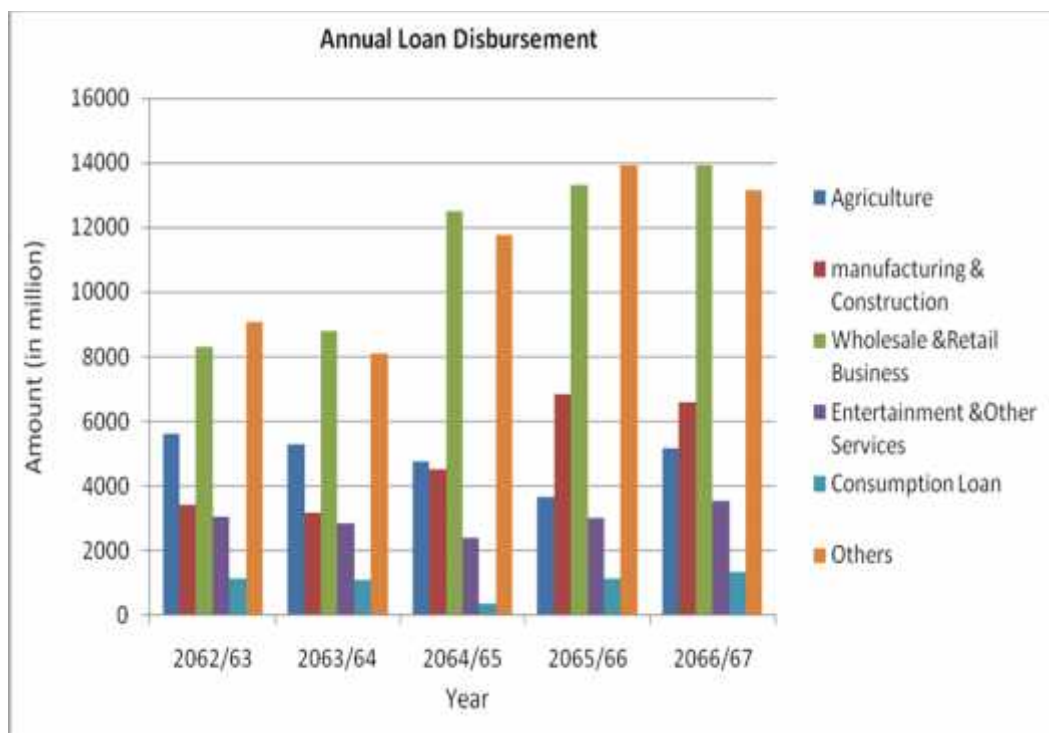
Table 4.2

Annual Loan Disbursement Amount (in millions)

Year	2062/63		2063/64		2064/65		2065/66		2066/67	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
Agriculture	5629.3	18.39	5296.9	18.09	4776.1	13.14	3653.8	8.72	5158.3	11.80
manufacturing & Construction	3402.7	11.12	3164.1	10.81	4532.6	12.47	6849.8	16.34	6592.4	15.08
Wholesale &Retail Business	8301.6	27.12	8785.6	30.00	12481.7	34.35	13323.8	31.79	13915.1	31.82
Entertainment &Other Services	3058.9	10.00	2839.4	9.70	2415.5	6.65	3022.9	7.21	3539.7	8.09
Consumption Loan	1122.6	3.67	1105.7	3.78	380.4	1.05	1139.9	2.72	1361.8	3.11
Others	9092.8	29.70	8089.8	27.62	11749.7	32.34	13921.9	33.22	13162.4	30.09
Total	30607.9	100.0	29281.5	100.0	36336.0	100.0	41912.1	100.0	43729.7	100.0

Source: Annual Report of ADBN, 2068

Figure 4.2
Annual Loan Disbursement



It has been tried to analyze the loan investment volume considering the purpose of loan in the above table and interpretation assuming cent percent investment during the relevant year.

The above table shows that ADBN is providing loan for six different purposes. The highest amount of investment is made in wholesale and retail business. In F/Y 2062/63, it is Rs.8301.6 million (27.12%), Rs.8785.6 million (30%) in F/Y 2063/64, Rs.12481.7 million (34.35%) in F/Y 2064/65, Rs.13323.8 million (31.79%) in F/Y 2065/66 and Rs.13915.1 million (31.82%) in F/Y 2066/67. Thus we see that the investment in wholesale and retail business is highest and it goes in increasing year by year.

The next highest investment is made in agriculture but it does not seem to be good. It is Rs. 5629.3 million (18.39%) in F/Y 2062/63 then it decreases year by year and becomes Rs. 3653.6 million (8.72%) in F/Y 2065/66. Then it increases to Rs. 5158.3 million (11.8%) in F/Y 2066/67.

The loan investment made in manufacturing and construction is in fluctuating trend. It is Rs. 3402.7 million (11.12%) in F/Y 2062/63 and decreases to Rs.3164.1 million

(10.81%) in F/Y 2063/64. Then in F/Y 2064/65 it goes upward to Rs. 4532.6 million (12.47%) and Rs. 6849.8 million (16.34%) in F/Y 2065/66 and in F/Y 2066/67 it shows slightly decrement to Rs. 6592.4 million (15.08%).

In entertainment and other services, loan disbursement of ADBN shows decreasing trend from F/Y 2062/63 to F/Y 2064/65 from Rs. 3058.9 million to Rs.2415.5 million respectively and then increasing trend thereafter.

The loan investment of ADBN made in consumption loan is very less in comparison to other sector. It is Rs. 1122.6 million in F/Y 2062/63, Rs. 1105.7 million in F/Y 2063/64. In F/Y 2064/65 it shows highly decrement to Rs. 380.4 million i.e. 1.05%, which is very less investment made by bank during the study of five years period. Then, in F/Y 2065/66 and in F/Y 2066/67 it shows increasing trend to Rs. 1139.9 million and Rs. 1361.8 million respectively.

4.1.4 Purpose Wise Analysis of Loan Collection

Following table has been made to show purpose wise analysis of loan collection of ADBN during to F/Y 2062/63 to F/Y 2066/67.

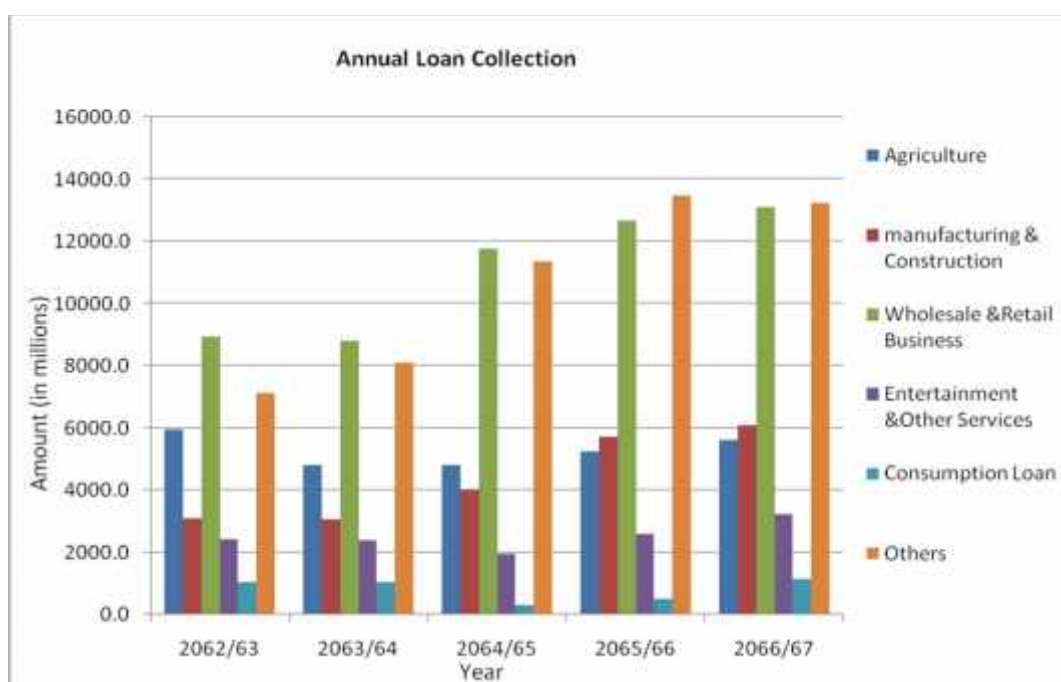
Table 4.3
Annual Loan Collection

Amount (in millions)

Year	2062/63		2063/64		2064/65		2065/66		2066/67	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
Agriculture	5953.1	20.81	4792.9	17.02	4808.3	14.07	5240.3	13.03	5622.3	13.25
manufacturing & Construction	3100.9	10.84	3050.9	10.84	4009.4	11.73	5728.9	14.24	6094.1	14.36
Wholesale & Retail Business	8944.0	31.26	8799.0	31.25	11771.3	34.45	12676.7	31.52	13095.9	30.85
Entertainment & Other Services	2433.7	8.51	2395.0	8.51	1943.9	5.69	2576.6	6.41	3239.9	7.63
Consumption Loan	1045.1	3.65	1028.2	3.65	287.2	0.84	514.4	1.28	1158.4	2.73
Others	7131.0	24.93	8086.0	28.72	11351.5	33.22	13481.8	33.52	13237.3	31.18
Total	28607.8	100.0	28152.0	100.0	34171.6	100.0	40218.7	100.0	42447.9	100.0

Source: Annual Report of ADBN, 2068

Figure 4.3
Annual Loan Collection



Loan collection is the very important aspect in financing. Above table and figure show that the highest loan collection sector is made on wholesale and retail business. It is Rs.8944 million (31.26%) in F/Y 2062/63, and shows slight decrement to Rs.8799 million (31.25%) in F/Y 2063/64. Then collection of bank goes to higher and it becomes Rs.11771.3 million (34.45%) in F/Y 2064/65, in F/Y 2065/66 Rs.12676.7 million (31.52%), which increased constantly and similarly into F/Y 2066/67 Rs.13095.9 million (30.85%). Increasing trend of loan collection shows better performance of bank.

During the five years of study period, the second highest loan collection of ADBN is made on Agriculture. It decreased in F/Y 2063/64 from Rs.5953.1 million to Rs.4792.9 million and then increasing trend thereafter, from Rs.4808.3 million to Rs. 5622.3 million respectively from F/Y2064/65 to 2066/67.

Loan collection position in manufacturing and construction sector is good because it has increased year by year 10.84%, 10.84%, 11.73%, 14.24% and 14.36%

respectively in F/Y 2062/63 to F/Y 2066/67. But the collection in entertainment and other services decreased by F/Y 2064/65 from Rs.2433.7 million to Rs.1943.9 million and then in increasing trend thereafter.

Consumption loan of the bank is less in comparison to other sector during the five years of study period.

4.1.5 Purpose Wise Analysis of Loan Outstanding:

Following table has been made to show purpose wise analysis of loan of ADBN during to F/Y 2062/63 to F/Y 2066/67.

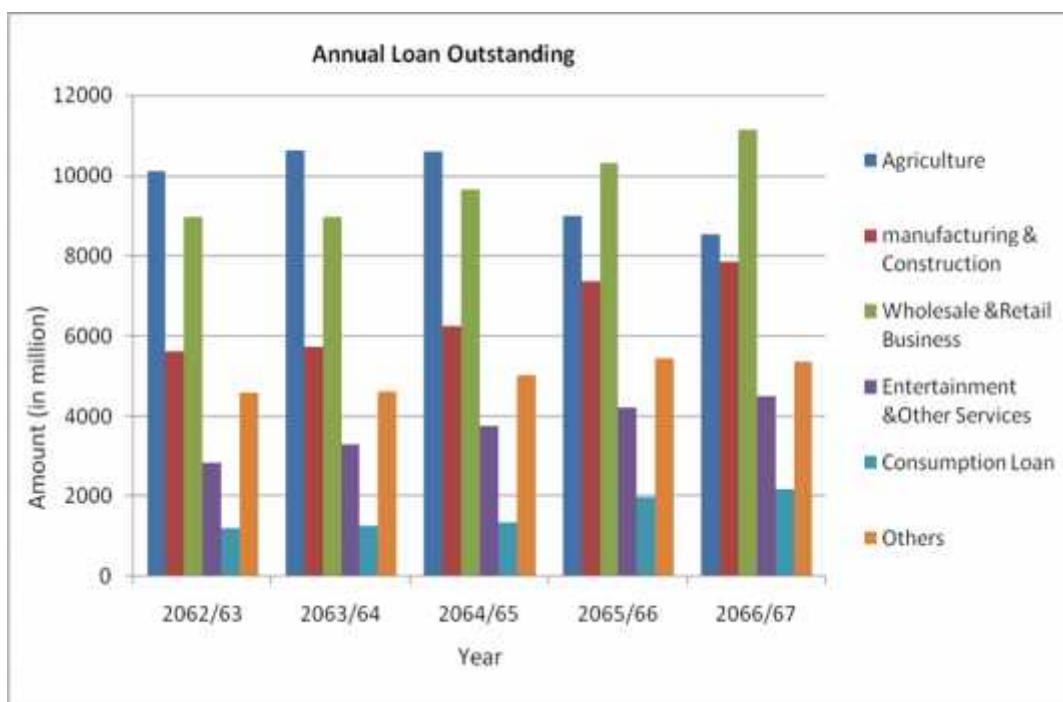
Table 4.4
Annual Loan Outstanding

Amount (in millions)

Year	2062/63		2063/64		2064/65		2065/66		2066/67	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
Agriculture	10112.0	30.36	10616.0	30.83	10583.9	28.91	8997.4	23.49	8533.3	21.56
manufacturing & Construction	5605.4	16.83	5718.9	16.6	6242.2	17.05	7363.1	19.22	7861.4	19.86
Wholesale & Retail Business	8966.6	26.92	8953.2	26.0	9663.6	26.4	10313.1	26.92	11130	28.12
Entertainment & Other Services	2841.2	8.53	3285.4	9.54	3757.0	10.26	4206.1	10.98	4505.7	11.38
Consumption Loan	1188.7	3.57	1266.3	3.67	1359.5	3.71	1985.0	5.18	2188.4	5.53
Others	4593.7	13.79	4596.8	13.34	4998.5	13.66	5442.3	14.22	5364.2	13.55
Total	33307.6	100.0	34436.6	100.0	36604.7	100.0	38307.0	100.0	39583.0	100.0

Source: Annual Report of ADBN, 2068

Figure 4.4
Annual Loan Outstanding



After loan investment and loan collection, loan outstanding is also an important aspect of financing. From the above table it can be seen that the highest amount of loan outstanding of ADBN is in the agriculture sector. It is Rs.10112 million (30.35%), Rs.10616 million (30.83%), Rs.10583.9 million (28.91%), Rs.8997.4 million (23.49%) and Rs.8533.3 million (21.56%) in the F/Y 2062/63 to F/Y 2066/67 respectively. The trend of loan outstanding in this sector is decreasing.

The second highest position of loan outstanding is in wholesale and retail business. It shows a slight increment i.e. 26.92% in F/Y 2062/63, 26% in F/Y 2063/64, 26.4% in F/Y 2064/65, 26.92% in F/Y 2065/66 and 28.12% in F/Y 2066/67.

In the manufacturing and construction sector, it shows that it has increased year by year. It is Rs.5405.4 million (16.83%) to Rs.7861.4 million (19.86%) from F/Y 2062/63 to F/Y 2066/67.

Loan outstanding in entertainment and other services and consumption loan is in an increasing trend. It has increased from 8.53% to 11.38% and 3.57% to 5.53% from

F/Y 2062/63 to F/Y 2066/67 respectively. But the outstanding of consumption loan is very low in comparison to other sector in the study period.

4.1.6 Multiple Correlation Coefficients

We can see the relationship between; loan investment, loan outstanding and loan collection by calculating multiple correlation coefficients.

Let us take loan collection as dependent variable denoted by X_3 and loan investment and loan outstanding as independent variables denoted X_1 and X_2 respectively. Since X_3 is dependent variables, we should compute the multiple correlation coefficients $r_{3.12}$.

Table 4.5
Calculation of Multiple Correlation Coefficients $R_{3.12}$

Year	X_1	X_2	X_3	$x_1 = X_1 - 363.4$	$x_2 = X_2 - 366$	$x_3 = X_3 - 341.7$	x_1^2	x_2^2	x_3^2	x_1x_2	x_1x_3	x_2x_3
2062/63	306.0	333.0	286.10	-57.4	-33.0	-55.60	3294.76	1089.00	3091.36	1894.2	3191.44	1834.8
2063/64	292.8	344.4	281.50	-70.6	-21.6	-60.20	4984.36	466.56	3624.04	1524.96	4250.12	1300.32
2064/65	363.4	366.0	341.70	0.0	0.0	0.00	0	0	0	0	0	0
2065/66	419.1	383.0	402.20	55.7	17.0	60.50	3102.49	289.00	3660.25	946.9	3369.85	1028.5
2066/67	437.3	395.8	424.50	73.9	29.8	82.80	5461.21	888.04	6855.84	2202.22	6118.92	2467.44
Total	1818.6	1822.2	1736.0	1.6	-7.8	27.5	16842.8	2732.6	17231.5	6568.3	16930.3	6631.1

Here,

X_1 = Loan Investment

X_2 = Loan Outstanding

X_3 = Loan Collection

x_1 = Deviation of X_1 variable

x_2 = Deviation of X_2 variable

x_3 = Deviation of X_3 variable

Now,

$$\bar{X}_1 = \frac{\sum X_1}{n_1} = \frac{1818.6}{5} = 363.72$$

$$\bar{X}_2 = \frac{\sum X_2}{n_2} = \frac{1822.2}{5} = 364.44$$

$$\bar{X}_3 = \frac{\sum X_3}{n_3} = \frac{1736}{5} = 347.2$$

Here,

$$\sum x_1x_2 = 6568.3, \sum x_1x_3 = 16930.3, \sum x_2x_3 = 6631.1$$

$$\sum x_1^2 = 16842.8, \sum x_2^2 = 2732.6, \sum x_3^2 = 17231.5$$

For finding the value of $R_{3,12}$, we must first find the value of r_{12}, r_{13}, r_{23} .

$$\begin{aligned} r_{12} &= \frac{\sum x_1x_2}{\sqrt{\sum x_1^2} \sqrt{\sum x_2^2}} \\ &= \frac{6568.3}{\sqrt{16842.8} \times \sqrt{2732.6}} \\ &= \frac{6568.3}{6784.15} \\ &= 0.97 \end{aligned}$$

Again,

$$\begin{aligned} r_{13} &= \frac{\sum x_1x_3}{\sqrt{\sum x_1^2} \sqrt{\sum x_3^2}} \\ &= \frac{16930.3}{\sqrt{16842.8} \times \sqrt{17231.5}} \\ &= \frac{16930.3}{17036.04} \\ &= 0.99 \end{aligned}$$

Then,

$$r_{23} = \frac{\sum x_2x_3}{\sqrt{\sum x_2^2} \sqrt{\sum x_3^2}}$$

$$\begin{aligned}
&= \frac{6631.1}{\sqrt{2732.6} \times \sqrt{17231.5}} \\
&= \frac{6631.1}{6861.98} \\
&= 0.97
\end{aligned}$$

Now,

$$\begin{aligned}
r_{3.12} &= \sqrt{\frac{r_{23}^2 + r_{13}^2 - 2 \times r_{12} r_{13} r_{23}}{1 - r_{12}^2}} \\
&= \sqrt{\frac{(0.97)^2 + (0.99)^2 - 2 \times 0.97 \times 0.99 \times 0.97}{1 - (0.97)^2}} \\
&= \sqrt{\frac{0.9409 + 0.9801 - 1.863}{1 - 0.9409}} \\
&= \sqrt{\frac{0.058}{0.059}} \\
&= \sqrt{0.9831} \\
&= 0.99
\end{aligned}$$

For interpretation of the value, we have to calculate multiple correlation coefficients. The coefficient of multiple determinants can be obtained by squaring on both side of equation.

$$\begin{aligned}
R_{3.12} &= \sqrt{\frac{r_{23}^2 + r_{13}^2 - 2 \times r_{12} r_{13} r_{23}}{1 - r_{12}^2}} \\
R_{3.12}^2 &= \frac{r_{23}^2 + r_{13}^2 - 2 \times r_{12} r_{13} r_{23}}{1 - r_{12}^2} \\
R_{3.12}^2 &= (0.99)^2 \\
R_{3.12}^2 &= 0.9801 \\
&= 98\%
\end{aligned}$$

Decision: Since $R_{3.12}^2 = 0.9801$. It shows that 98.01% of total variance is dependent variable i.e. loan collection denoted by x_3 has been affected by the two independent

variable, loan disbursement (x_1) and loan outstanding (x_2) and 1.99% another factor that effect loan collection.

4.1.7 Annually Time Series Graph

For future estimation, the studies of past information are necessary. So, time series helps in future forecasting and planning with the help of past and present data and the factors affecting them will make possible to forecast the future magnitude. Time series graph shows the change in the value of variable with the passage of the time. The graph of time series for the continuous case referred as a histogram.

4.1.7.1 Trend Analysis

In trend analysis, we analyze all the purposes of ADBN where the bank invests loan amount on each purpose. Trend value calculated on each purpose including loan disbursement, loan collection and loan outstanding.

Table 4.6
Trend Analysis of Agriculture Loan Disbursement

Amount (in millions)

Year	Actual Amount	Trend Value
2062/63	5629.3	5419.9
2063/64	5296.9	5161.4
2064/65	4776.1	4902.9
2065/66	3653.8	4644.4
2066/67	5158.3	4385.7

Sources: Annual Report of ADBN and Appendix I

The above table shows that the loan disbursement position of ADBN in Agriculture Loan is Rs. 5629.3 million in F/Y 2062/63 then it shows decrement trend up to F/Y 2065/66 and becomes Rs. 3653.8 million. In F/Y 2066/67 the loan disbursement amount Rs. 5158.3 million become high as compared to previous year. Whereas, in

estimated trend value the loan disbursement amount of ADBN in agriculture loan shows decreasing trend. It goes on decreasing by Rs. 258.51 million per year and amount becomes Rs. 5419.9 million, Rs. 4902.9 million, Rs. 4644.4 million and Rs. 4385.7 million from F/Y 2062/63 to F/Y 2066/67 respectively. Trend equation of ADBN in loan disbursement of Agriculture loan is as:

$$Y_c = 4902.88 - 258.51x$$

The actual loan disbursement amount of ADBN in Agriculture Loan as well as the trend values can be seen in following figure.

Figure 4.5
Trend Analysis of Agriculture Loan Disbursement

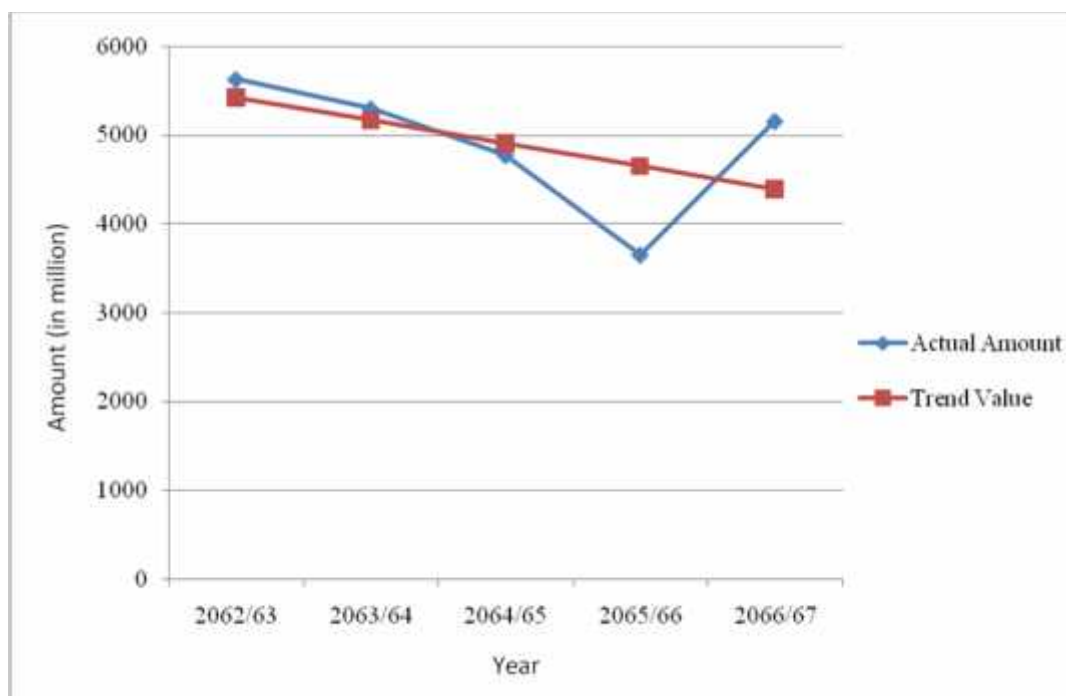


Table 4.7
Trend Analysis of Agriculture Loan Collection

Amount (in millions)

Year	Actual Amount	Trend Value
2062/63	5953.1	5326.2
2063/64	4792.9	5304.8
2064/65	4808.3	5283.4
2065/66	5240.3	5262.0
2066/67	5622.3	5240.6

Source: Annual Report of ADBN and Appendix 2

Above table presents that the loan collection position of ADBN in Agriculture Loan is in fluctuating state. It fluctuates year by year; it is Rs. 5953.1 million in F/Y 2062/63, Rs. 4792.9 million in F/Y 2063/64, Rs. 4808.3 million in F/Y 2064/65, Rs. 5240.3 million in F/Y 2065/66 and Rs. 5622.3 million in F/Y 2066/67. In estimated trend value, it shows decreasing trend. It decreases by RS. 21.4 million per year. It is Rs. 5326.2 million in F/Y 2062/63 and becomes Rs. 5240.6 million in F/Y 2066/67. The fluctuating trend and decreasing trend of loan collection of ADBN in Agriculture loan both is bad sign for bank. Trend equation of loan collection in Agriculture loan is $Y_c = 5283.4 - 21.4x$

The actual data as well as the trend value of loan collection in Agriculture loan are presented in figure as below.

Figure 4.6
Trend Analysis of Agriculture Loan Collection

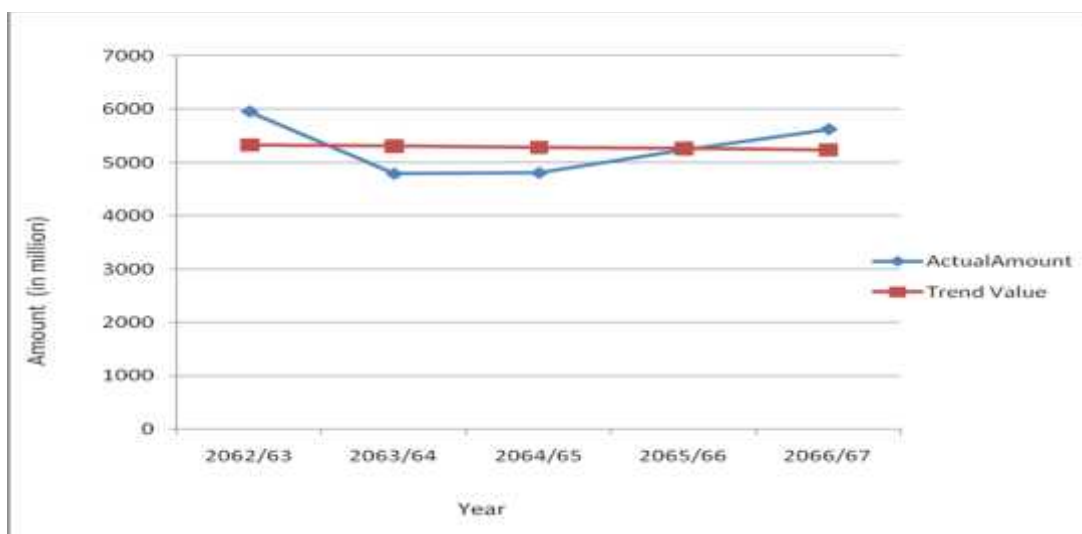


Table 4.8
Trend Analysis of Agriculture Loan Outstanding

Amount (in millions)

Year	Actual Amount	Trend Value
2062/63	10112.0	10723.7
2063/64	10616.0	10246.1
2064/65	10583.9	9768.5
2065/66	8997.4	9290.9
2066/67	8533.3	8813.3

Source: Annual Report of ADBN and Appendix 3

Table no. 4.8 presents the actual value and estimated trend value of loan outstanding in Agriculture loan. The actual outstanding value is Rs.10112 million in F/Y 2062/63 and decreasing year by year and becomes Rs.8533.3 million in F/Y 2066/67. The estimated trend value of loan outstanding is also in decreasing trend. Trend equation shows as:

$$Y_c = 9768.5 - 477.6x$$

It means the estimated trend value of loan outstanding in agriculture loan is decreasing by Rs. 477.6 million per year. It is Rs. 10723.7 million in F/Y 2062/63 and goes on decreasing year by year and becomes Rs. 8813.3 million in F/Y 2066/67. Decreasing trend of loan outstanding shows good sign for bank. Actual value as well as trend value can be plot in figure as follows.

Figure 4.7
Trend Analysis of Agriculture Loan Outstanding

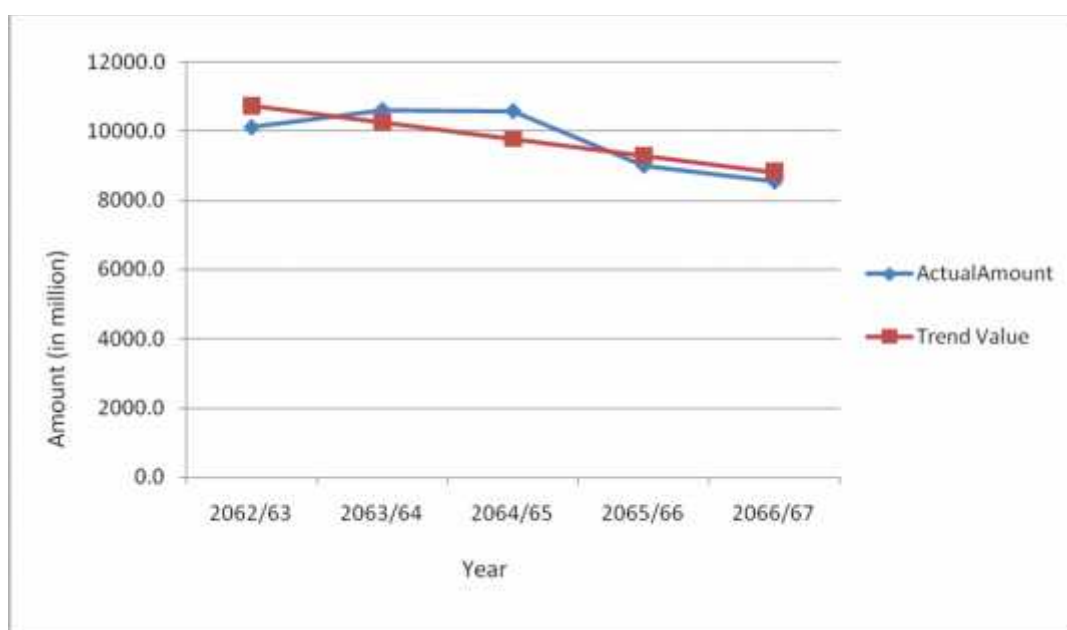


Table 4.9
Trend Analysis of Loan Disbursement in Manufacturing and Construction

Amount (in millions)

Year	Actual Amount	Trend Value
2062/63	3402.7	2895.3
2063/64	3164.1	3901.8
2064/65	4532.6	4908.3
2065/66	6849.8	5914.8
2066/67	6592.4	6921.3

Source: Annual Report of ADBN and Appendix 4

After analysis of table, it shows that the loan disbursement in manufacturing and construction is in little fluctuating trend. It is Rs.3402.1 million in F/Y 2062/63 and decrease in F/Y 2063/64 to Rs.3164.1 million and goes on increasing upto F/Y 2065/66 and again it shows slight decrement to Rs. 6592.4 million in F/Y 2066/67. Trend equation of Manufacturing and Construction in loan disbursement is as;

$$Y_c = 4908.3 + 1006.5x$$

The equation shows that loan disbursement amount in Manufacturing and Construction is increasing by Rs. 1006.5 million per year. It is Rs. 2895.3 million in F/Y 2062/63 and goes on increasing. It becomes Rs.6921.3 million in F/Y 2066/67, which can be shown in above table. The actual value as well as trend value of loan outstanding can be drawn in following figure.

Figure 4.8

Trend Analysis of Loan Disbursement in Manufacturing and Construction

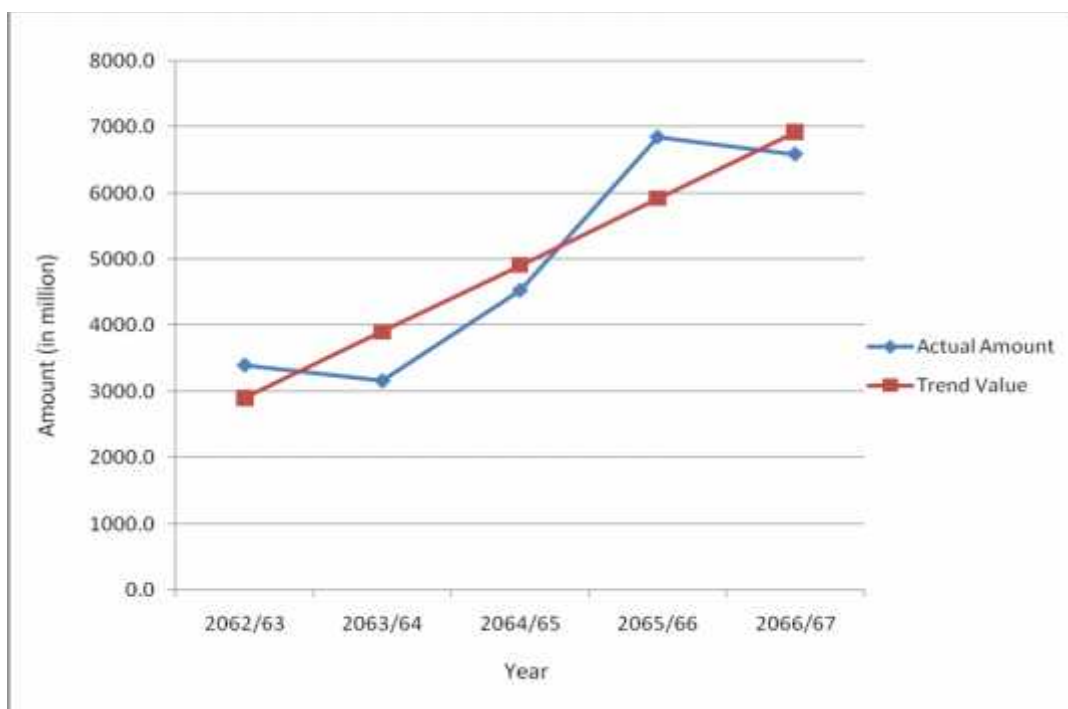


Table 4.10
Trend Analysis of Loan Collection in Manufacturing and Construction

Amount (in millions)

Year	Actual Amount	Trend Value
2062/63	3100.9	2664.0
2063/64	3050.9	3530.4
2064/65	4009.4	4396.8
2065/66	5728.9	5263.2
2066/67	6094.1	6129.6

Source: Annual Report of ADBN and Appendix 5

The above table depicted that the amount of loan collection in manufacturing and construction is in increasing trend except in F/Y 2063/64. The trend value of loan collection is also in increasing trend. It is increased year by year by Rs. 866.4 million respectively. The increasing trend of loan collection is good sign for bank. The trend equation remains as; $Y_c = 4396.8 + 866.4x$

The actual value and trend value of loan collection in Manufacturing and Construction over the five years of study period can be shown in following figure.

Figure 4.9
Trend Analysis of Loan collection in Manufacturing and Construction

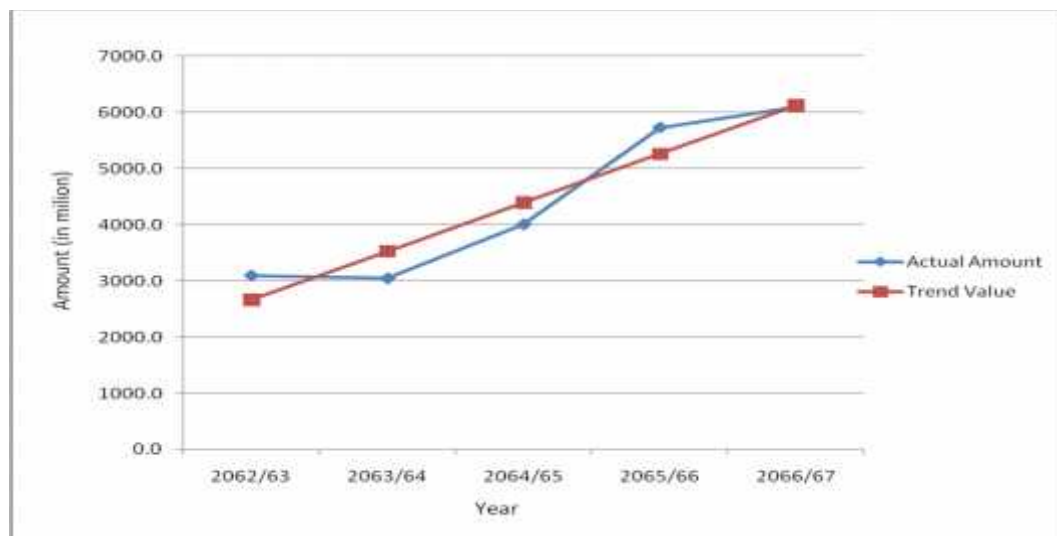


Table 4.11
Trend Analysis of Loan Outstanding in Manufacturing and Construction

Amount (in millions)

Year	Actual Amount	Trend Value
2062/63	5605.4	5327.0
2063/64	5718.9	5942.6
2064/65	6242.2	6558.2
2065/66	7363.1	7173.8
2066/67	7861.4	7789.4

Source; Annual Report of ADBN and Appendix 6

Above table shows that the actual amount and trend amount of loan outstanding in manufacturing and construction sector, both amount shows increasing trend. The amount is Rs. 5605.4 million in F/Y 2062/63 and goes on increasing it becomes to Rs.7861.4 million in F/Y 2066/67.

The trend equation is as $Y_c = 6558.2 + 615.6x$, means that the trend value of loan outstanding in manufacturing and construction is increasing year by year by Rs. 615.6 million. It is Rs. 5327 million in F/Y 2062/63 and becomes Rs. 7789.4 million in F/Y 2066/67. The increasing trend of loan outstanding shows that the bank had not been effective in loan recovery. The actual value as well as trend value can be shown in following figure.

Figure 4.10

Trend Analysis of Loan Outstanding in manufacturing and Construction

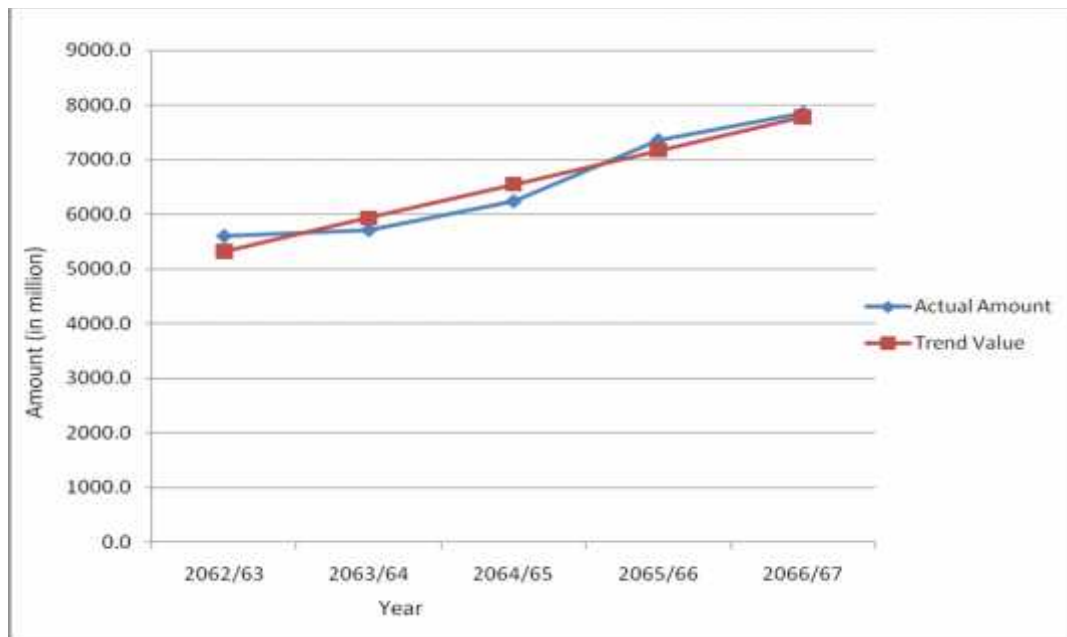


Table 4.12

Trend Analysis of Loan Disbursement in Wholesale and Retail Business

Amount (in millions)

Year	Amount	Trend Value
2062/63	8301.6	8208.6
2063/64	8785.6	9785.1
2064/65	12481.7	11361.6
2065/66	13323.8	12938.1
2066/67	13915.1	14514.6

Source: Annual Report of ADBN and Appendix 7

Above table depicted that the loan disbursement in wholesale and retail business sector is in increasing state. It increases year by year. It is Rs. 8301.6 million, Rs. 8785.6 million, Rs. 12481.7 million, Rs. 13323.8 million and Rs. 13915.1 million from F/Y 2062/63 to F/Y 2066/67 respectively. The trend value over five years of study period is also in increasing trend.

The calculated equation $Y_c = 11361.6 + 1576.5x$ shows that the value of loan disbursement in wholesale and retail business is increasing year by year by Rs. 1576.5 million. The increasing trend value is Rs. 8202.6 million to Rs. 14514.6 million from F/Y 2062/63 to F/Y 2066/67 respectively. The increasing trend of actual value and trend value of ADBN in loan disbursement in wholesale and retail business both can be shown by following diagram.

Figure 4.11

Trend Analysis of Loan Disbursement in Wholesale and Retail Business

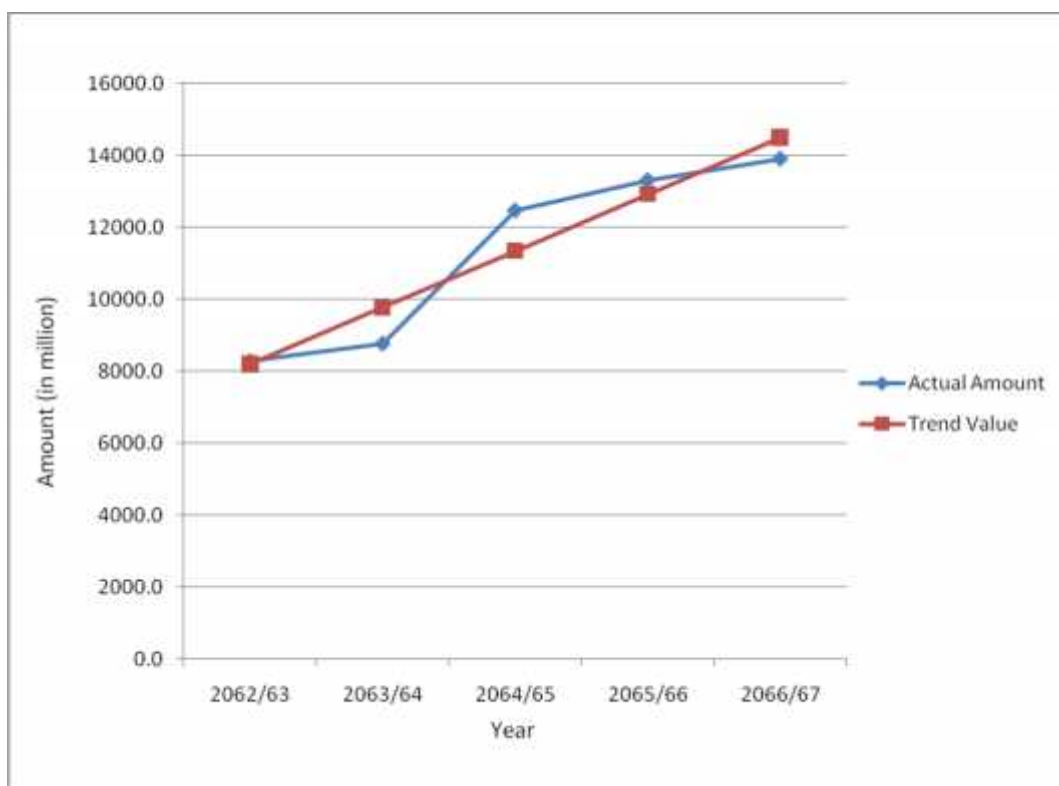


Table 4.13
Trend Analysis of Loan Collection in Wholesale and Retail Business

Amount (in millions)

Year	Actual Amount	Trend Value
2062/63	8944.0	8621.0
2063/64	8799.0	9839.2
2064/65	11771.3	11057.4
2065/66	12676.7	12275.6
2066/67	13095.9	13493.8

Source: Annual Report of ADBN and Appendix 8

Table no. 4.13 clearly shows that the loan collection position of ADBN in wholesale and retail business. The amount is decrease to Rs. 8799 million in F/Y 2063/64 as comparison to previous F/Y 2062/63 of Rs.8944 million. From F/Y 2064/65 to F/Y 2066/67 it goes on increment and becomes Rs.11771.3 million, Rs. 12676.7 million and Rs. 13095.9 million respectively.

The calculated trend amount also shows increasing state. It increases from Rs. 8621 million to Rs. 13493.8 million respectively from F/Y 2062/63 to F/Y 2066/67. The calculated equation $Y_c=11057.4+1218.2x$ shows that the trend amount increase by Rs. 1218.2 million per year. Following figure shows actual amount as well as trend amount.

Figure 4.12
Trend Analysis of Loan Collection in Wholesale and Retail Business

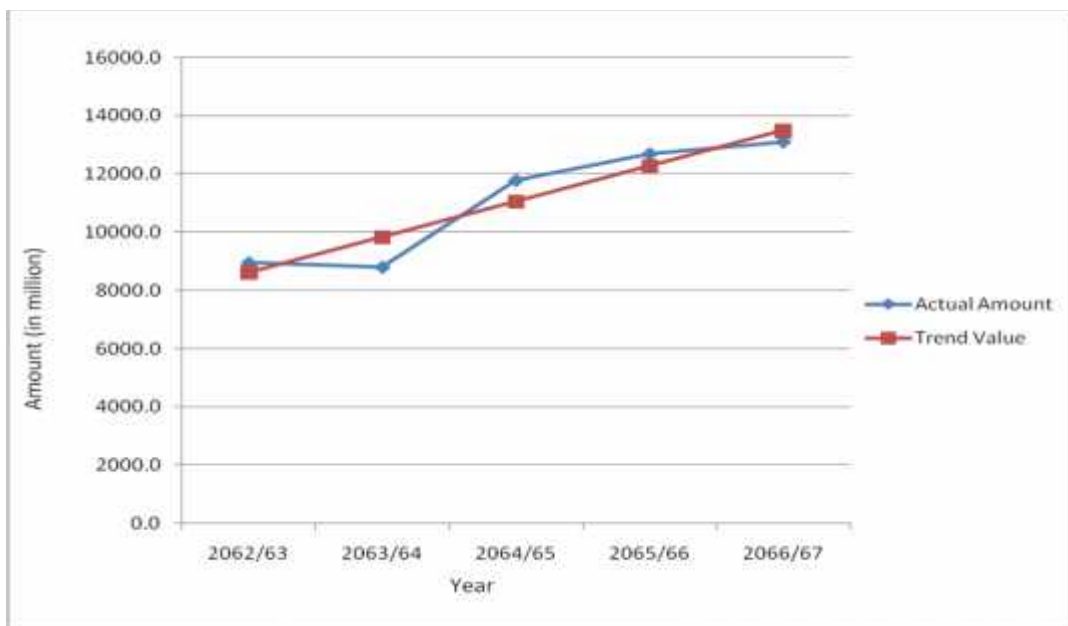


Table 4.14
Trend Analysis of Loan Outstanding in Wholesale and Retail Business

Amount (in millions)

Year	Actual Amount	Trend Value
2062/63	8966.6	8667.9
2063/64	8953.2	9236.6
2064/65	9663.6	9805.3
2065/66	10313.1	10374.0
2066/67	11130.0	10942.7

Sources; Annual Report of ADBN and Appendix 9

Table no. 4.14 clearly shows that the loan outstanding amount is Rs.8966.6 million in F/Y 2062/63 and it shows slightly decrement to Rs.8953.2 million in F/Y 2063/64. In remaining years the outstanding amount shows increasing trend. The amount is Rs.9663.6 million in F/Y 2064/65, Rs. 10313.1 million in F/Y 2065/66

and in F/Y 2066/67 Rs. 11130 million. The trend value of loan outstanding in wholesale and retail business of ADBN is also in increasing trend. It increases by Rs. 568.7 million respectively per year. Trend equation of wholesale and retail business is as;

$$Y_c = 9805.3 + 568.7x$$

Actual amount as well as trend amount of loan outstanding can be shown in following figure.

Figure 4.13

Trend Analysis of Loan Outstanding in Wholesale and Retail Business

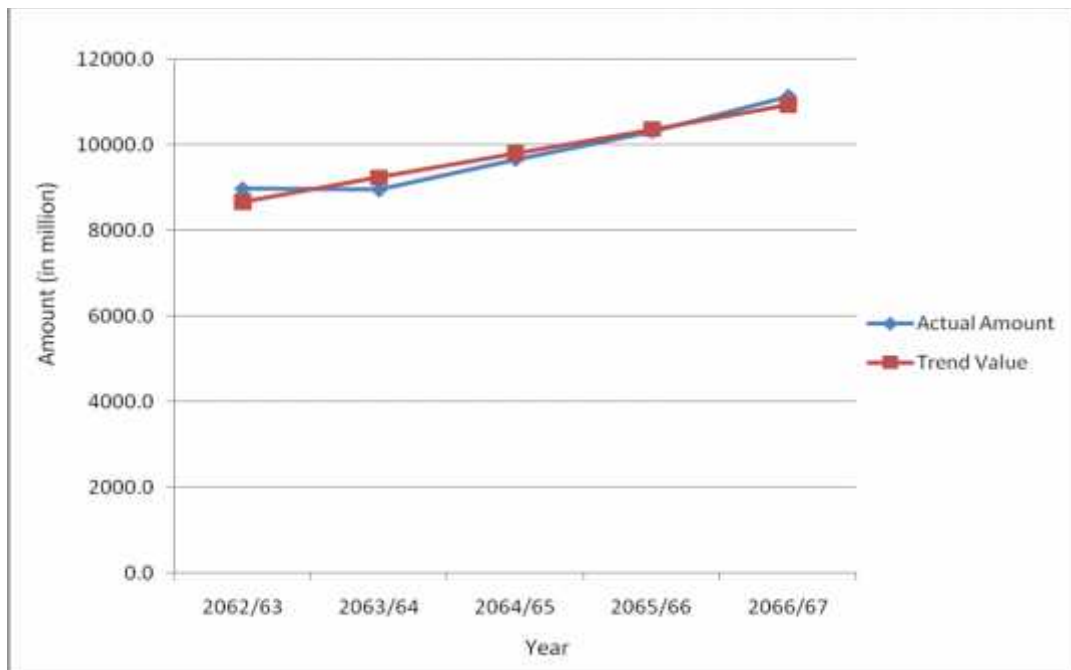


Table 4.15**Trend Analysis of Loan Disbursement in Entertainment and Other Services**

Amount (in millions)

Year	Actual Amount	Trend Value
2062/63	3058.9	2746.3
2063/64	2839.4	2860.8
2064/65	2415.5	2975.3
2065/66	3022.9	3089.8
2066/67	3539.7	3204.3

Source; Annual Report of ADBN and Appendix 10

The above table shows the loan disbursement of entertainment and other services of ADBN in actual value and in trend value. The actual value shows that the loan disbursement trend is in fluctuating state. It is Rs.3058.9 million in F/Y 2062/63, which decreased to Rs. 2839.4 million and Rs. 2415.5 million in F/Y 2063/64 and F/Y 2064/65 and then raised upto Rs.3022.9 million and Rs. 3539.7 million in F/Y 2065/66 and F/Y 2066/67. But in other side, the trend value shows increasing state. It goes on increasing by Rs. 114.5 million per year respectively. During the five years of study period it increased from Rs. 2746.3 million to Rs. 3204.3 million from F/Y 2062/63 to F/Y 2066/67. The calculated trend equation is $Y_c=2975.3+114.5x$

The actual value as well as trend value can be plot in following figure.

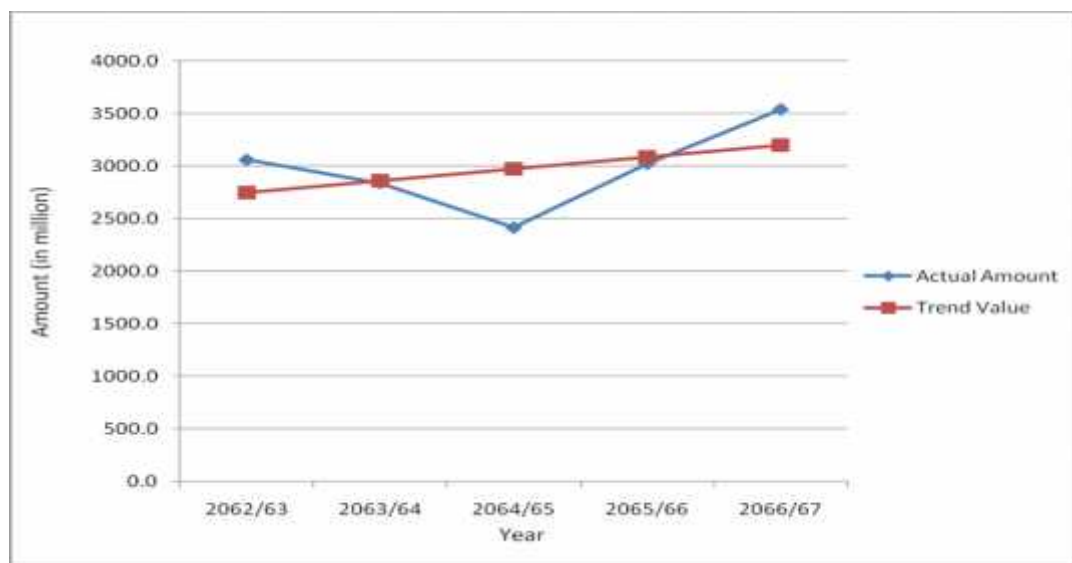
Figure 4.14**Trend Analysis of Loan Disbursement in Entertainment and Other Services**

Table 4.16
Trend Analysis of Loan Collection in Entertainment and Other Services

Amount (in millions)

Year	Actual Amount	Trend Value
2062/63	2433.7	2159.0
2063/64	2395.0	2338.4
2064/65	1943.9	2517.8
2065/66	2576.6	2697.2
2066/67	3239.9	2876.6

Source; Annual Report of ADBN and Appendix 11

After analyzing the above table, it shows that the loan collection policy of Entertainment and Other Services is decreasing from Rs.2433.7 million to Rs.1943.9 million in F/Y 2062/63 to F/Y 2064/65 respectively. Then it increased from Rs. 2576.6 million to Rs.3239.9 million in F/Y 2065/66 and F/Y 2066/67. It means the bank's collection policy is little better in last two years in comparison to previous three years.

The calculated trend equation $Y_c = 2517.8 + 179.4x$, shows that the trend value of loan collection is goes on increasing by Rs.179.4 million per year respectively. The amount Rs. 2159 million in F/Y 2062/63 goes on increasing year by year and it becomes to Rs.2876.6 million in F/Y 2066/67. The actual value and trend value can be drawn in figure as follows.

Figure 4.15

Trend Analysis of Loan Collection in Entertainment and Other Services

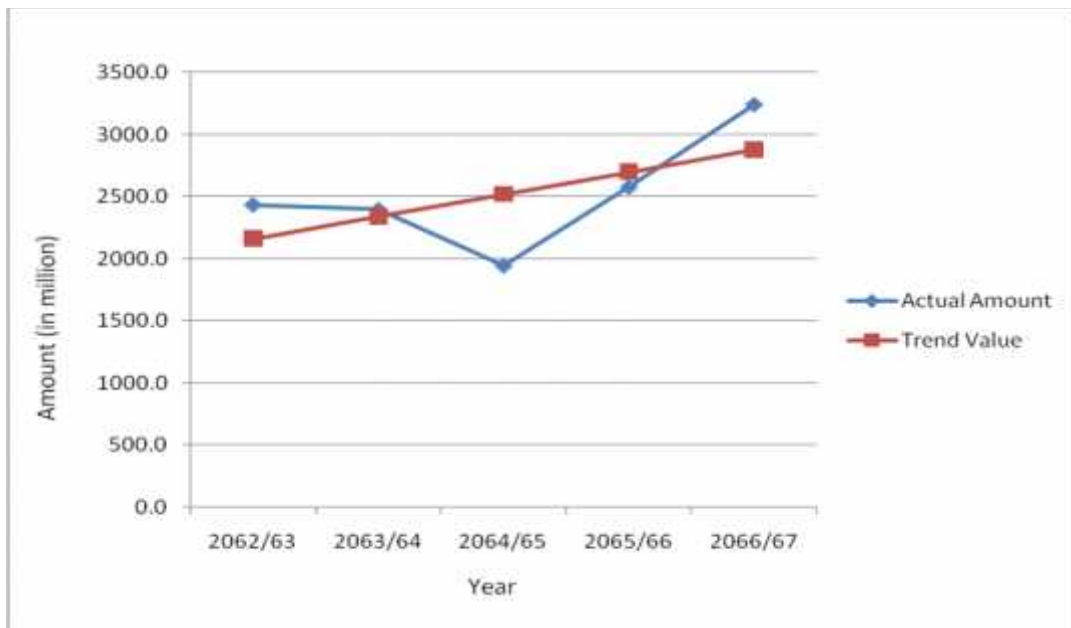


Table 4.17

Trend Analysis of Loan Outstanding in Entertainment and Other Services

Amount (in millions)

Year	Actual Amount	Trend Value
2062/63	2841.2	2869.1
2063/64	3285.4	3294.1
2064/65	3757.0	3719.1
2065/66	4206.1	4144.1
2066/67	4505.7	4569.1

Sources; Annual Report of ADBN and Appendix 12

Above table shows, the loan outstanding made in entertainment and other service is increasing year by year. It increased from Rs. 2841.2 million to Rs. 4505.7 million from F/Y 2062/63 to F/Y 2066/67 respectively. The same result can be seen in trend amount also. It also increased year by year. It increased from Rs.2869.10 million to

Rs.4569.10 million from F/Y 2062/63 to F/Y 2066/67 respectively. The calculated trend equation $Y_c=3719.1+425x$, shows that the loan outstanding increased by Rs. 425 million per year respectively.

Figure 4.16

Trend Analysis of Loan Outstanding in Entertainment and Other Services

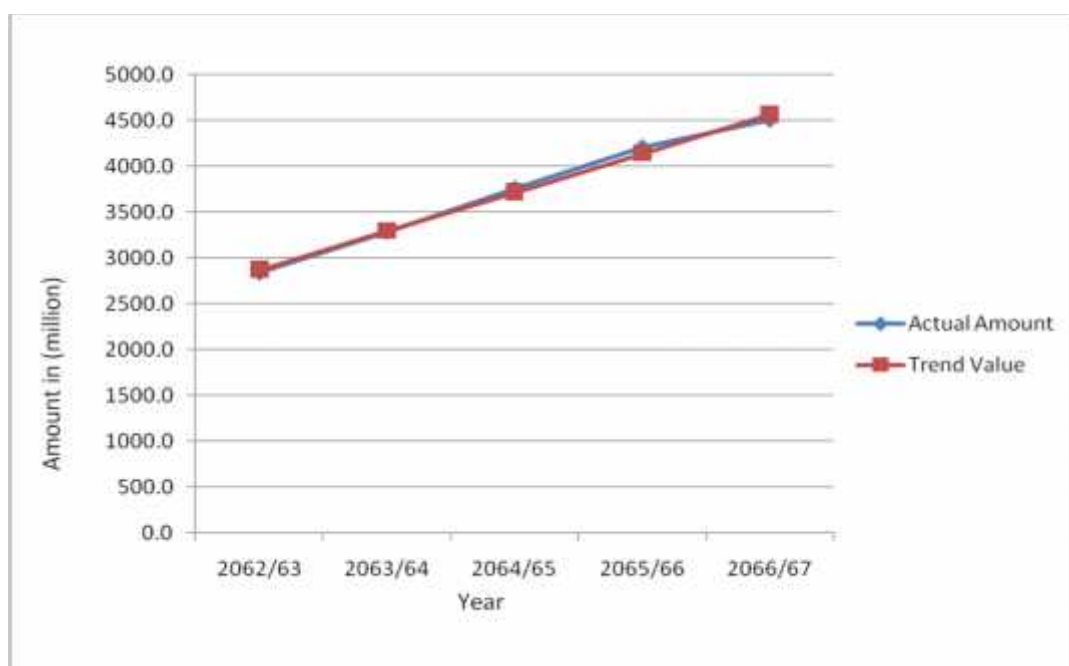


Table 4.18

Trend Analysis of Loan Disbursement in Consumption Loan

Amount (in millions)

Year	Actual Amount	Trend Value
2062/63	1122.6	919.5
2063/64	1105.7	970.8
2064/65	380.4	1022.1
2065/66	1139.9	1073.4
2066/67	1361.8	1124.7

Sources; Annual Report of ADBN and Appendix 13

Above table shows that the loan disbursement in Consumption Loan is Rs. 1122.6 million in F/Y 2062/63. Then it shows slight decrement in F/Y 2063/64 to Rs. 1105.7 million. Again it decreased to Rs. 380.4 million in F/Y 2064/65. In F/Y 2065/66 it shows high increment and becomes Rs. 1139.9 million and in F/Y 2066/67 again it increased to Rs. 1361.8 million. The trend value of loan disbursement is in increasing trend. It shows slight increment year by year by Rs. 51.3 million respectively. The calculated trend equation is as; $Y_c = 1022.1 + 51.3x$ The actual value and trend value of loan disbursement in consumption loan over the five years of study period can be plot in following figure.

Figure 4.17

Trend Analysis of Loan Disbursement in Consumption Loan

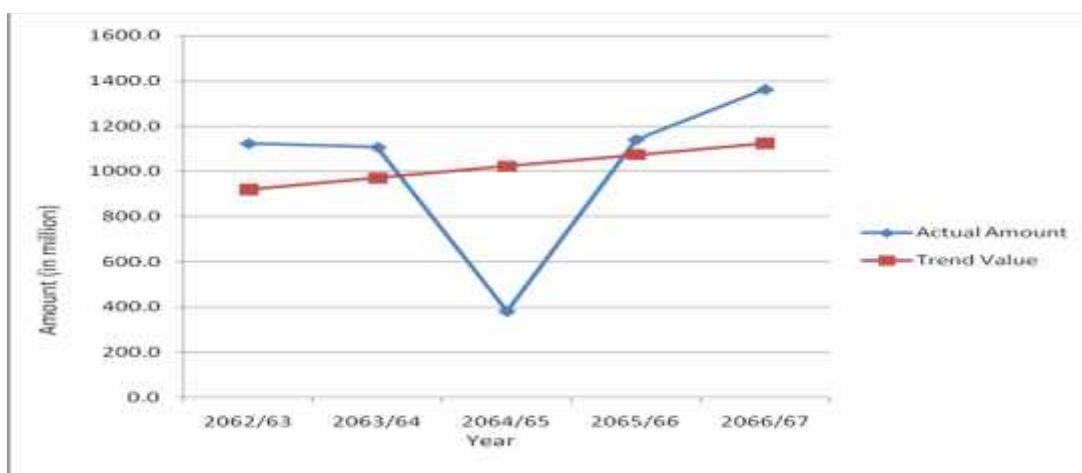


Table 4.19

Trend Analysis of Loan Collection in Consumption Loan

Amount (in millions)

Year	Actual Amount	Trend Value
2062/63	1045.1	864.1
2063/64	1028.2	835.4
2064/65	287.2	806.7
2065/66	514.4	778.0
2066/67	1158.4	749.3

Sources; Annual Report of ADBN and Appendix 14

Table no. 4.19 shows the actual amount and trend amount of loan collection policy of consumption loan. In actual amount, the loan collection trend shows decreasing up to F/Y 2064/65 and then increasing trend thereafter whereas, in the study period of five years the trend amount shows decreasing trend. It decreases from Rs. 864.1 million to Rs. 749.3 million from F/Y 2062/63 to F/Y 2066/67 respectively. The calculated trend equation $Y_c = 806.7 - 28.7x$, shows that the loan collection policy is decreasing by Rs. 28.7 million per year. Actual amount and trend amount can be shown in following figure.

Figure 4.18

Trend Analysis of Loan Collection in Consumption Loan

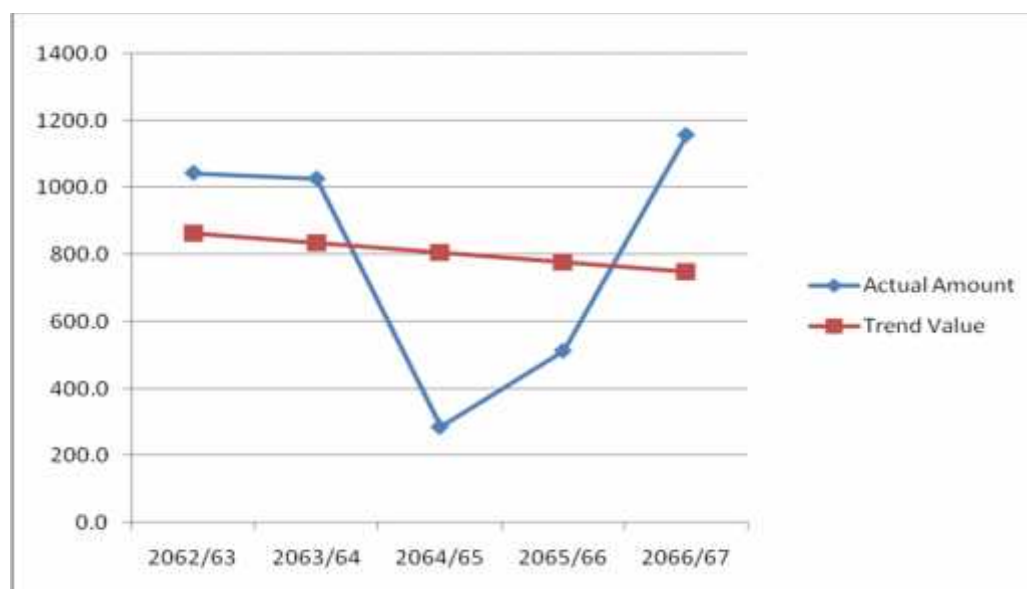


Table 4.20

Trend Analysis of Loan Outstanding in Consumption Loan

Amount (in millions)

Year	Amount	Trend Value
2062/63	1188.7	1054.0
2063/64	1266.3	1325.8
2064/65	1359.5	1597.6
2065/66	1985.0	1869.4
2066/67	2188.4	2141.2

Sources; Annual Report of ADBN and Appendix 15

Above table shows the loan outstanding policy of ADBN in consumption loan is in increasing trend. It increases year by year. It is Rs. 1188.7 million, Rs. 1266.3 million, Rs. 1359.5 million, Rs. 1985 million and Rs. 2188.4 million from F/Y 2062/63 to F/Y 2066/67 respectively. The same result can be seen in trend amount of loan outstanding. It increases year by year from Rs. 1054 million to Rs. 2141.2 million from F/Y 2062/63 to F/Y 2066/67 respectively. The calculated equation $Y_c = 1597.6 + 271.8x$ represents that the loan outstanding amount increases by Rs. 271.8 million per year. The increasing trend of loan outstanding is not good for bank. Actual amount and trend amount both can be drawn in following figure.

Figure 4.19

Trend Analysis of Loan Outstanding in Consumption Loan

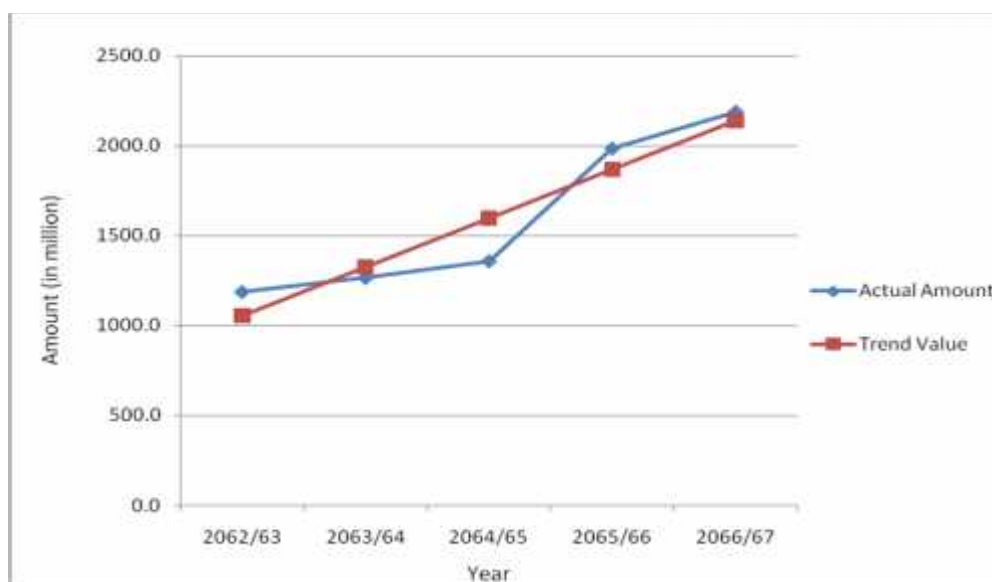


Table 4.21

Trend Analysis of Loan Disbursement in Others

Amount (in millions)

Year	Actual Amount	Trend Value
2062/63	9092.8	8409.1
2063/64	8089.8	9806.2
2064/65	11749.7	11203.3
2065/66	13921.9	12600.4
2066/67	13162.4	13997.5

Sources; Annual Report of ADBN and Appendix 16

Table no. 4.21 presents that the loan disbursement in others loan is Rs. 9092.8 million in F/Y 2062/63. Then it shows decreasing trend and becomes Rs. 8089.8 million in F/Y 2063/64. Then it goes on increment and becomes Rs. 11749.7 million in F/Y 2064/65 and Rs. 13921.9 million in F/Y 2065/66. In F/Y 2066/67 again it goes on slightly decrement and becomes Rs. 13162.4 million.

In trend value the loan disbursement amount in others shows increasing state. It increased year by year from Rs.8409.1 million to Rs. 13997.5 million respectively from F/Y 2062/63 to F/Y 2066/67. The calculated trend equation $Y_c = 11203.3 + 397.1x$, shows that the loan disbursement amount in others increased by Rs. 1397.1 million per year. The following figure presents the actual amount and trend amount of loan disbursement in others.

Figure 4.20
Trend Analysis of Loan Disbursement in Others

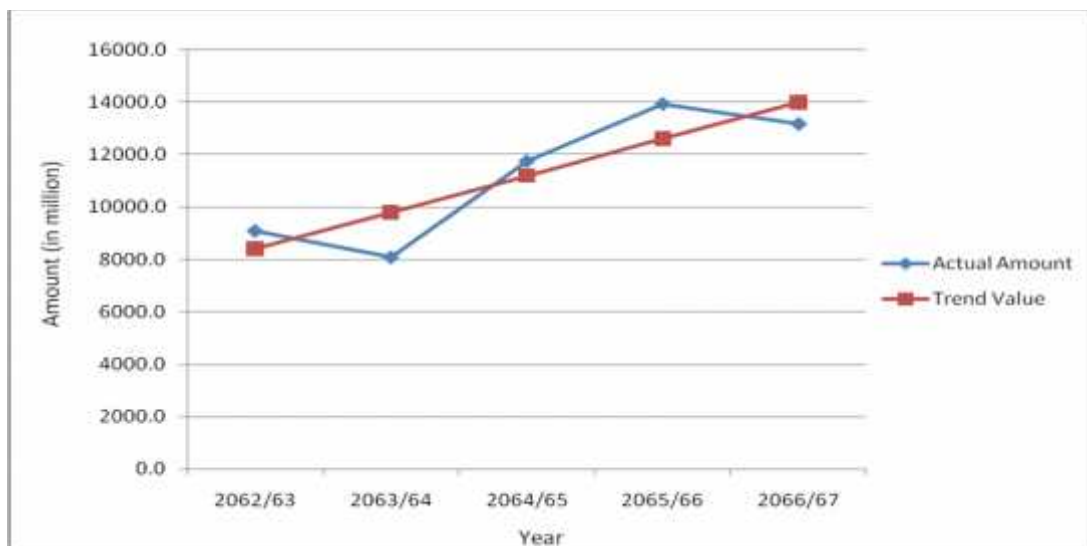


Table 4.22
Trend Analysis of Loan Collection in Others

Amount (in millions)

Year	Actual Amount	Trend Value
2062/63	7101.0	7117.9
2063/64	8086.0	8884.7
2064/65	11351.5	10651.5
2065/66	13481.8	12418.3
2066/67	13237.3	14185.1

Sources; Annual Report of ADBN and Appendix 17

Table no. 4.22 shows that the loan collection policy of others is in continuously increasing trend except in the last F/Y 2066/67 during the five years of study period whereas, in trend amount of loan collection we see increasing trend. It increased from Rs. 7117.9 million to Rs. 14185.1 million from F/Y 2062/63 to F/Y 2066/67. It increased by Rs. 1766.8 million per year, which is expressed by this equation: $Y_c = 10651.5 + 1766.8x$. The increasing trend of loan collection is much better for bank. Actual amount as well as trend amount of loan collection in others of ADBN can plot in following figure.

Figure 4.21
Trend Analysis of Loan Collection in Others

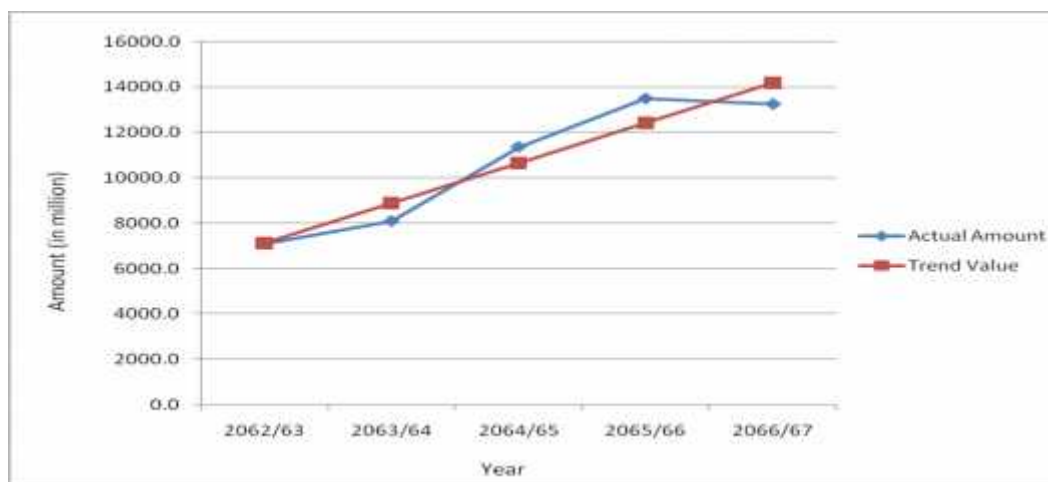


Table 4.23

Trend Analysis of Loan Outstanding in Others

Amount (in millions)

Year	Actual Amount	Trend Value
2062/63	4593.7	4521.7
2063/64	4596.8	4760.4
2064/65	4998.5	4999.1
2065/66	5442.3	5237.8
2066/67	5364.2	5476.5

Sources: Annual Report of ADBN and Appendix 18

Above table depicted the loan outstanding amount of ADBN in others loan is Rs. 4593.7 million in F/Y 2062/63. Then it goes on slightly increment year by year and becomes to Rs. 5442.3 million in F/Y2065/66. In last year, F/Y 2066/67 the outstanding amount shows little decrement to Rs. 5364.2 million whereas, in trend amount the outstanding amount of others loan goes on increasing state. It increases from Rs. 4521.7 million to Rs. 5476.5 million from F/Y 2062/63 to F/Y 2066/67 respectively. It increases by Rs. 238.7 million per year. Increasing trend of loan outstanding is bad sign for bank. It means the banks collection policy is not good as compared to loan disbursed. Calculated trend value is; $Y_c = 4999.1 + 238.7x$

By using trend line we can estimate or forecast the trend values for future coming years. Future forecasting trend value for upcoming next three years will be;

Trend equation $Y_c = a + b x$ (Note: $a=4999.1$, $b= 238.7$)

Loan outstanding amount in others on the 6th year

$$Y_{2067/68} = \text{Rs. } 5715.2 \text{ million}$$

Loan outstanding amount in others on the 7th year

$$Y_{2068/69} = \text{Rs. } 5953.9 \text{ million}$$

Loan outstanding amount in others on the 8th year

$$Y_{2069/70} = \text{Rs. } 6192.6 \text{ million}$$

Table 4.24
Trend Analysis of Loan Outstanding in Others

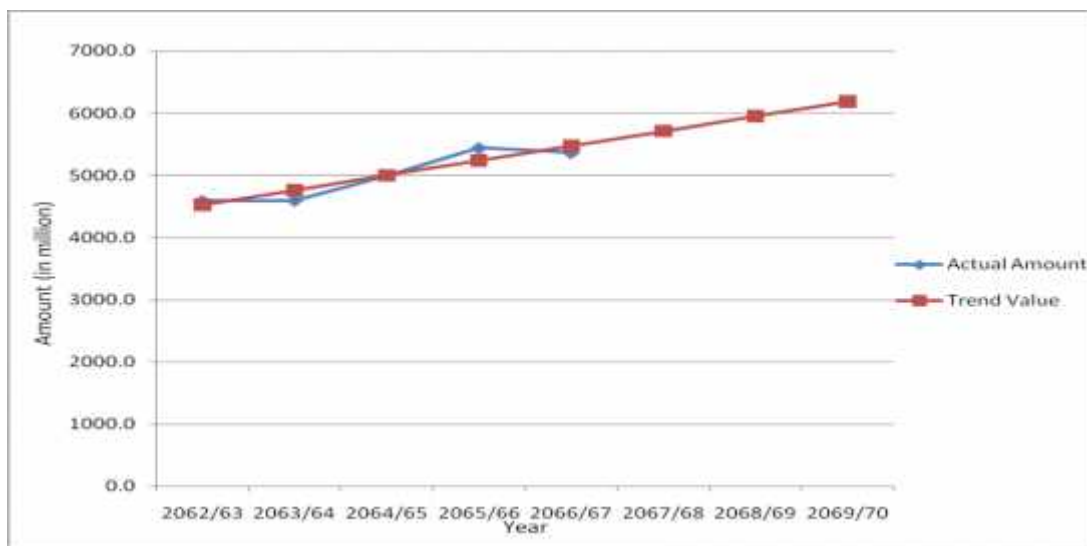
Amount (in millions)

Year	Actual Amount	Trend Value
2062/63	4593.7	4521.7
2063/64	4596.8	4760.4
2064/65	4998.5	4999.1
2065/66	5442.3	5237.8
2066/67	5364.2	5476.5
2067/68		5715.2
2068/69		5953.9
2069/70		6192.6

Sources Annual Report of ADBN and Appendix 18

The actual value and trend value as well as future forecast trend value for coming next three years of others in loan outstanding situation can be plot in following figure.

Figure 4.22
Trend Analysis of Loan Outstanding in Others



4.1.8 Ratio Analysis

4.1.8.1 Liquidity Ratio

Liquidity refers to the ability of a firm to meet its short-term or current obligations. So, liquidity ratios are used to measure the ability of a firm to meet its short-term obligations. Inadequate liquidity can lead to unexpected cash short falls that must be covered at excessive cost reducing profitability. In the worst case, inadequate liquidity can lead to the liquidity insolvency of the institution. To find out the ability of the bank to meet their short-term obligations, which are likely to mature in the short period.

A. Cash and Bank Balance to Total Deposit Ratio:

Cash and bank balance to total deposit ratio shows that percentage relation between cash and bank balance to total deposit. It means the liquid balance available in respect to total deposit of the bank whereas the difference between the cash and bank balance to total deposit is said as the investment of the bank.

The ratio calculations are as follows.

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

Table 4.25
Cash and Bank Balance to Total Deposit Ratio

Amount (in millions)

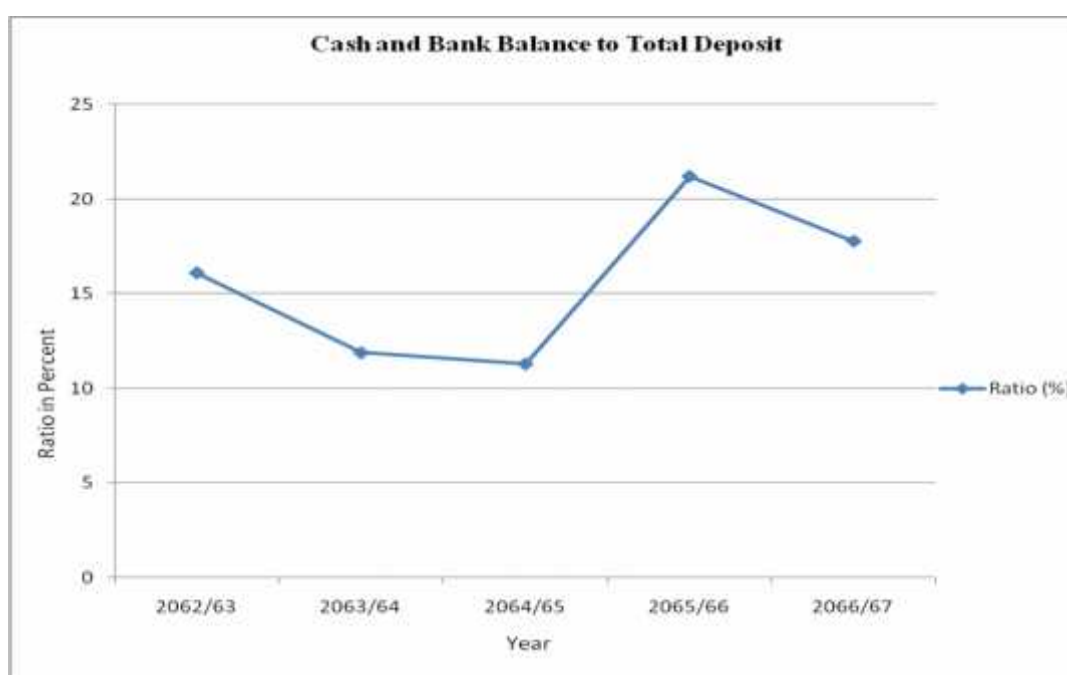
Year	Cash and Bank Balance	Total Deposit	Ratio (%)
2062/63	4772	29632	16.10
2063/64	3851	32416	11.88
2064/65	3674	32553	11.29
2065/66	7452	35159	21.20
2066/67	5773	32472	17.78
Total			78.25
Mean			15.65
S.D.			3.71
C.V.			23.71

Source: Annual Report of ADBN and Appendix 19

The above table shows that the cash and bank balance to total deposit ratio of ADBN for five years. The ratios are 16.10%, 11.88%, 11.29%, 21.20% and 17.78% respectively. The average mean ratio is 15.65% in the study period. The highest ratio is 21.20% in F/Y 2065/66. This shows that a high liquidity position of the bank. The lowest ratio is 11.29% in F/Y 2064/65 and in F/Y 2063/64 ratio is 11.88%. These shows that low liquidity position of the bank. Ratios are 16.10% in F/Y 2062/63 and 17.78% in F/Y 2066/67. This means that the bank is able to maintain this ratio in the good liquidity position of the bank. The standard deviation and coefficient of variance of the bank remains 3.71 and 23.71% respectively. Cash and bank balance to total deposit ratio of banks can be presented in line diagram as follows.

Figure 4.23

Cash and Bank Balance to Total Deposit Ratio



B. Cash and Bank Balance to Current Assets Ratio

Cash and bank balance to current assets ratio shows that percentage relation between cash and bank to current assets. Higher ratio indicates the banks sound ability to meet the daily cash requirement of their customer's deposit. The ratio calculations are as follows.

$$\text{Cash and Bank Balance to Current Assets Ratio} = \frac{\text{Cash and Bank Balance}}{\text{Current Assets}}$$

Table 4.26
Cash and Bank Balance to Current Assets Ratio

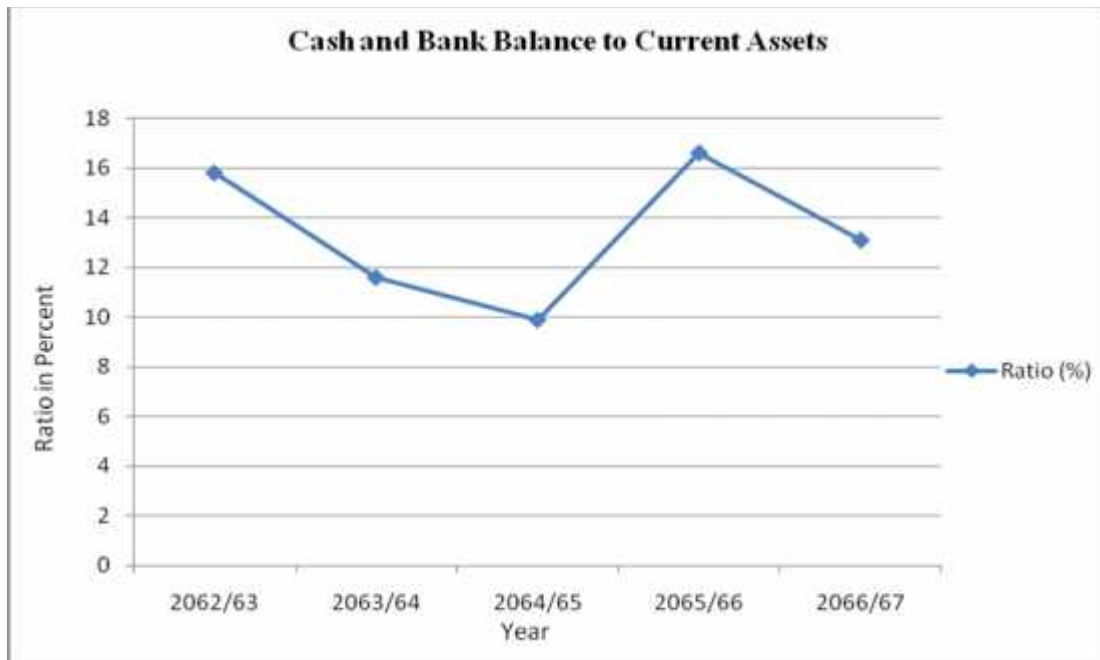
Amount (in millions)

Year	Cash and Bank Balance	Current Assets	Ratio (%)
2062/63	4772	30176	15.8
2063/64	3851	32969	11.6
2064/65	3674	37076	9.9
2065/66	7452	44835	16.6
2066/67	5773	44079	13.1
Total			67
Mean			13.4
S.D.			2.51
C.V.			18.73

Source: Annual Report of ADBN and Appendix 20

The above table shows that the cash and bank balance to current assets ratio of ADBN is in fluctuating trend. The highest ratio is 16.6% in F/Y 2065/66 and lowest ratio is 9.90% in F/Y 2064/65. The mean ratio is 13.4% and standard deviation and coefficient of variance of the ratio is 2.51 and 18.73% respectively in the study period. Ratio is 16.6% in F/Y 2065/66. This indicates the bank is in sound ability to meet the daily cash requirement of their customer's deposit. The ratio is 9.90% in F/Y 2064/65. It shows the bank may not be able to make the payment against cheque. Ratios are 15.8%, 11.6% and 13.1% in F/Y 2062/63, 2063/64 and 2066/67 respectively. Credit management is good position of the bank. Thus, ADBN is maintaining cash and bank balance to current assets ratio properly. Cash and bank balance to current assets ratio of ADBN can be presented in line figure as follows:

Figure 4.24
Cash and Bank Balance to Current Assets Ratio



4.1.8.2 Assets Management Ratio

This ratio measures the efficiency of bank in its fund mobilization. A bank must be able to manage its assets properly to earn high profit, maintaining the appropriate level of liquidity. Assets management ratio measures the efficiency of the bank. By the help of the following ratios, asset management of ADBN has been analyzed.

A. Loan and Advances to Total Deposit Ratio

Loan and advance is the investing activities of the bank and total deposit is the deposit amount of the bank collected from its customers or depositor. This ratio measures to the extent that bank is successful to manage its total deposit on loan and advances for the purpose of income generation or not. A high ratio indicates better mobilization of collected deposit and vice-versa. But it should be noted that too high ratio might not be better from liquidity point of view.

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

Table 4.27
Loan and Advances to Total Deposit Ratio

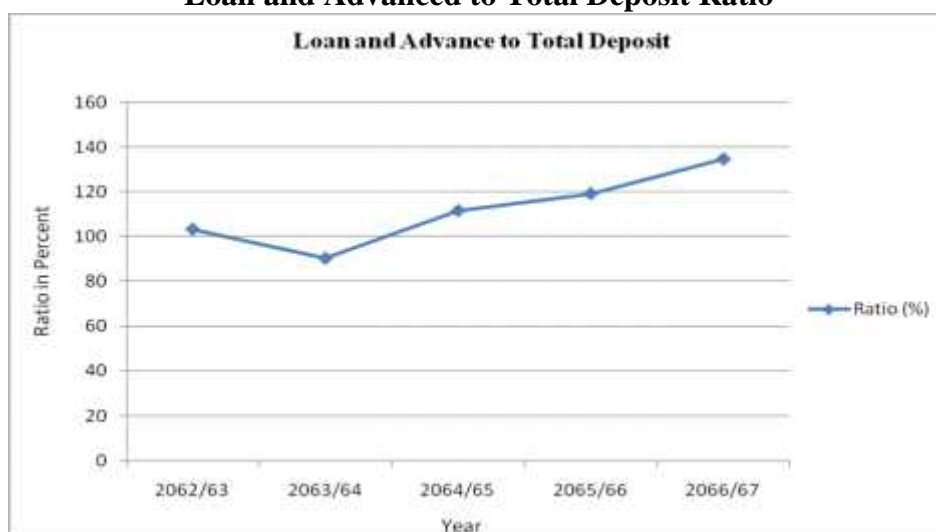
Amount (in millions)

Year	Loan and Advance	Total Deposit	Ratio (%)
2062/63	30608	29632	103.3
2063/64	29281	32416	90.33
2064/65	36336	32553	111.62
2065/66	41912	35159	119.21
2066/67	43730	32472	134.67
Total			559.13
Mean			111.83
S.D.			14.91
C.V.			13.33

Source: Annual Report of ADBN and Appendix 21

Above table depicted the loan and advance to total deposit ratio of ADBN over the five years period from 2062/63 to 2066/67. The ratios are 103.3%, 90.33%, 111.62%, 119.21% and 134.67% in F/ Y 2062/63, 2063/64, 2064/65, 2065/66 and 2066/67 respectively. Similarly, mean ratio remains at 111.83% during the five years of study period. This means that the bank is able to mobilization of collected deposit. Likewise standard deviation is 14.91 and coefficient of variation is 13.33%. Loan and advances to total deposit ratio of ADBN can be shown by following diagram.

Figure 4.25
Loan and Advanced to Total Deposit Ratio



B. Investment on Share and Debenture to Total Deposit Ratio:

This ratio measures the extent to which banks are able to mobilize their deposits on investment in share and debenture. This ratio indicates the proportion of deposits utilized for the purpose of income generation as well as for maintaining liquidity in appropriate level. A high ratio is the indicator of high success of mobilizes deposits in share and debenture and vice-versa.

$$\text{Invest on Share and Debentures to Total Deposit Ratio} = \frac{\text{Invest on Share and Debenture}}{\text{Total Deposit}}$$

Table 4.28
Investment on Share and Debenture to Total Deposit Ratio

Amount (in millions)

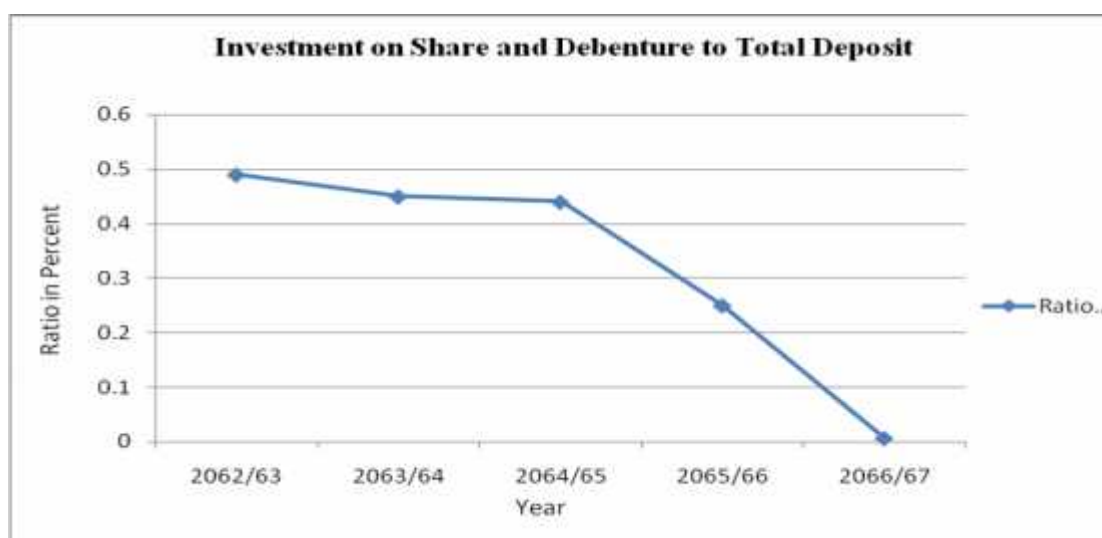
Year	Investment on Share and Debenture	Total Deposit	Ratio (%)
2062/63	147	29632	0.49
2063/64	145	32416	0.45
2064/65	144	32553	0.44
2065/66	88	35159	0.25
2066/67	2	32472	0.006
Total			1.636
Mean			0.33
S.D.			0.18
C.V.			54.55

Source: Annual Report of ADBN and Appendix 22

The data in table no. 4.28 indicated the investment on share and debenture to total deposit ratio of ADBN for five years is in decreasing trend. The ratios are 0.49 %, 0.45%, 0.44%, 0.25% and 0.006% respectively from F/Y 2062/063 to F/Y 2066/067.

The mean value is 0.33%, means ADBN goes on reducing its deposit funds in investment on share and debenture. The bank is not success to mobilize deposits in share and debenture. Standard deviation and coefficient of variance of the ratio remain 0.18 and 54.55% respectively in the study period. Investment on shares and debentures to total deposit ratio are presented below in figure.

Figure 4.26
Investment on Share and Debenture to Total Deposit Ratio



C. Investment on Government Securities to Total Deposit Ratio:

ADBN may mobilize its deposit by investing in different securities issued by government and other financial and non-financial organizations. A high ratio is the indicator of high success of mobilizes deposits in securities and vice-versa.

$$\text{Invest on Govt. Security to Total Deposit Ratio} = \frac{\text{Investment on Government Sec.}}{\text{Total Deposit}}$$

Table 4.29
Investment on Government Securities to Total Deposit Ratio

Amount (in millions)

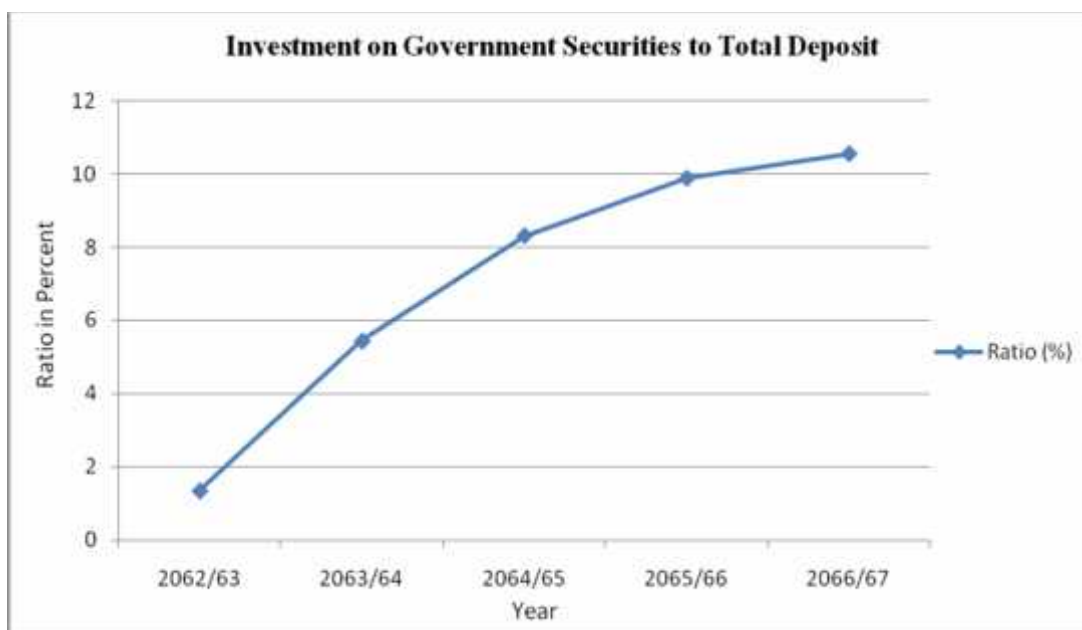
Year	Investment on Government Securities	Total Deposit	Ratio (%)
2062/63	397	29632	1.34
2063/64	1759	32416	5.43
2064/65	2706	32553	8.31
2065/66	3473	35159	9.88
2066/67	3426	32472	10.55
Total			35.51
Mean			7.1
S.D.			3.38
C.V.			47.61

Source: Annual Report of ADBN and Appendix 23

Above table depicted the investment on government securities to total deposit ratio of ADBN over the five years period is in increasing trend. The ratios are 1.34%, 5.43%, 8.31%, 9.88% and 10.55% respectively from F/Y 2062/63 to F/Y 2066/67 respectively. Similarly, mean ratio remains at 7.10% during the study period. This shows that ADBN is success to mobilize deposits in securities.

The standard deviation and coefficient of variance of the banks is 3.38 and 47.61% respectively. Investment on government securities to total deposit ratio of ADBN can be shown by following diagram.

Figure 4.27
Investment on Government Securities to Total Deposit Ratio



4.1.8.3 Profitability Ratio

Profit is major objective of any business organization. Profit is engine that drives the business enterprises. Profitability ratios are very helpful to measure the overall efficiency in operation of a bank. Profitability ratio is calculated on the basis of sales and investment. In the context of banks, no bank can survive without profit. Profit is one of the major indicators of efficient operation of a bank. The banks acquire profit by providing different services to its customers or by providing loan and advances and making various kinds of investment opportunities. Profitability ratios measure the efficiency of a bank. A higher profit ratio shows the higher efficiency of a bank. The following ratios are calculated:

A. Return on Loan and Advances Ratio

This ratio measures the earning capacity of ADBN through its fund mobilization as loan advances and vice-versa.

$$\text{Return on Loan and Advances Ratio} = \frac{\text{Net Profit (Loss)}}{\text{Loan and Advances}}$$

Table 4.30
Return on Loan and Advances Ratio

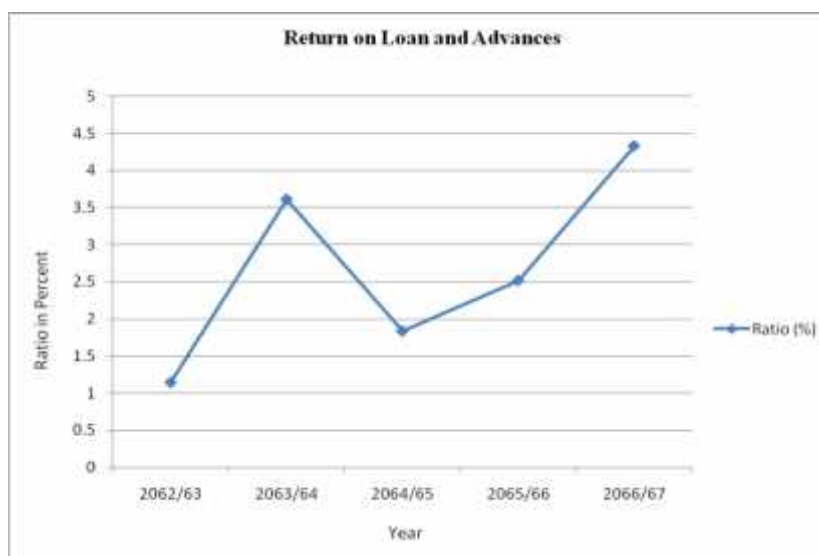
Amount (in millions)

Year	Net Profit/Loss	Loan and Advances	Ratio (%)
2062/63	353	30608	1.15
2063/64	1058	29281	3.61
2064/65	669	36336	1.84
2065/66	1057	41912	2.52
2066/67	1892	43730	4.33
Total			13.45
Mean			2.69
S.D.			1.15
C.V.			42.75

Source: Annual Report of ADBN and Appendix 24

Data in table No. 4.30 indicated that return on loan and advances ratio of ADBN is in fluctuating trend. The highest ratio is 4.33% in F/Y 2066/67 and lowest ratio is 1.15% in F/Y 2062/63. The average mean ratio is 2.69%. It shows the normal earning capacity of ADBN in loan and advance. This means lending policy of bank is not so sound and credits are not granted in profitable sectors but satisfactorily in the present economic situation. The ratios are 3.61%, 1.84% and 2.52% in F/Y 2063/64, 2064/65 and 2065/66 respectively. Standard deviation of ADBN is 1.15 and coefficient of variation remains 42.75%. Return on loan and advances ratio is represented in the line diagram as follows.

Figure 4.28
Return on Loan and Advances Ratio



B. Return on Total Assets Ratio

This ratio shows that relationship of net profit and total assets is to determine how efficiently the total assets have been used by the management. It indicates the ability of generating profit per rupees of total assets. Higher ratio shows more efficient and lower ratio show low efficient operating management.

$$\text{Return on Total Assets Ratio} = \frac{\text{Net Profit (Loss)}}{\text{Total Assets}}$$

Table 4.31

Return on Total Assets Ratio Amount (in millions)

Year	Net Profit/Loss	Total Assets	Ratio (%)
2062/63	353	35297	1.00
2063/64	1058	38160	2.77
2064/65	669	44085	1.52
2065/66	1057	51818	2.04
2066/67	1892	54020	3.50
Total			10.83
Mean			2.17
S.D.			0.89
C.V.			41.01

Source: Annual Report of ADBN and Appendix 25

Table No. 4.31 shows that return on total assets of ADBN for five years is in fluctuating trend. The ratios are 1%, 2.77%, 1.52%, 2.04% and 3.50% in F/Y 2062/63, 2063/64, 2064/65, 2065/66 and F/Y 2066/67 respectively. The highest ratio is 3.50% in F/Y 2066/67 and the lowest ratio is 1% in F/Y 2062/63. The average mean ratio is 2.17. This shows the normal earning capacity through assets utilization. In above the five year research period net profit is fluctuating trend whereas the total asset is in increasing trend. Standard deviation is 0.89 and coefficient of variance is 41.01%. Net profit to total assets ratio of ADBN can be show by following figure.

Figure 4.29
Return on Total Assets Ratio



C. Total Interest Earned to Total Interest Paid Ratio

Total interest earned to total interest paid ratio is the gap between interest rates offered and interest rate charged. NRB has restricted the gap between interests taken in loan and advances and interest offered in deposit.

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

Table 4.32

Total Interest Earned to Total Interest Paid Ratio

Amount (in millions)

Year	Total Interest Earned	Total Interest Paid	Ratio (Times)
2062/63	4033	1439	2.80
2063/64	4623	1605	2.88
2064/65	3961	1641	2.41
2065/66	4231	1157	3.66
2066/67	5464	1507	3.63
Total			15.38
Mean			3.08
S.D.			0.49
C.V.			15.91

Source: Annual Report of ADBN and Appendix 26

Above table depicted the total interest earned to total interest paid ratio of ADBN over the five years period from F/Y 2062/63 to F/Y 2066/67 is in fluctuating trend. The ratios are 2.80 times, 2.88 times, 2.41 times, 3.66 times and 3.63times in the F/Y 2062/63, 2063/64, 2064/65, 2065/66 and F/Y 2066/67 respectively.

The highest ratio is 3.66 times in F/Y 2065/66. Mean ratio remains 3.08 during the five years study period. This shows that ADBN has charged high interest rate to borrower and offering low interest rate to depositors. Similarly, standard deviation is 0.49 and coefficient of variation is 15.91%. Total interest earned to total interest paid of ADBN can be shown in following figure.

Figure 4.30
Total Interest Earned to Total Interest Paid Ratio



4.2 Major Findings of the Study

Based on the analysis of data the main findings are summarized as follows;

- Out of total fund available, loan and advances shows highest invested which is Rs. 30608 million to Rs. 43730 million from F/Y 2062/63 to F/Y 2066/67 respectively. Invested in government securities also shows increasing trend from Rs. 397 million to Rs. 3426 million respectively from F/Y 2062/63 to F/Y 2066/67. Whereas, bank's investment made in share and debenture shows continuously decreasing trend. Percentage of cash and bank balance remains 8.57% to 14.08%.
- Out of total loan provided, loan disbursement on wholesale and retail business sector is highest. This loan is very high in F/Y 2064/65 which is

Rs. 12481.7 million (34.35%). Loan on Agriculture sector is second highest. This loan is very high in the F/Y 2062/63, which is Rs. 5629.3 million (18.39%). Loan on Manufacturing and construction is third position. The loan is highest in F/Y 2065/66, which is Rs. 6592.9 million (15.08%).

- The ratio of loan collection from wholesale and retail business sector is highest in F/Y 2064/65 which is Rs. 11771.3 million (34.45%). But amount of loan collection from this sector is highest in F/Y 2066/67 which is Rs. 13095.9 million (30.85%). The second highest ratio of loan collection is from Agriculture sector in the F/Y 2062/63, which is Rs. 5953.1 million (20.81%). The second highest amount of loan collection is from Manufacturing and Construction Sector in the F/Y2066/67 which is Rs. 6094.1 million (14.36%).
- The amount of loan outstanding in Wholesale and Retail business is highest in F/Y 2066/67, which is Rs. 11130 million (28.12%). The ratio of loan outstanding in Agriculture sector in F/Y 2062/63 is highest which Rs. 10112.8 million is (30.35%).
- Multiple correlation coefficients have found out that 98.01% of total loan collection is dependent on two variables i.e. loan disbursement and loan outstanding.
- In trend analysis, trend of loan disbursement, loan collection and loan outstanding in Agriculture loan all are in decreasing trend by Rs. 288.51 million, Rs. 21.4 million and Rs. 477.6 million per year respectively.
- Trend analysis of loan disbursement, loan collection and loan outstanding in manufacturing and construction sector all are in increasing trend. They increase by Rs. 1006.5 million, Rs. 866.4 million and Rs. 615.6 million per year respectively.
- Trend analysis of loan disbursement, loan collection and loan outstanding in Wholesale and Retail Business show all are in increasing trend by Rs. 1576.5 million, Rs. 1218.2 million and Rs. 568.7 million per year respectively.
- Trend analysis of loan disbursement, loan collection and loan outstanding in Entertainment and Other services all shows increasing trend. They

increase per year by Rs. 114.5 million, Rs. 179.4 million and Rs. 425 million respectively.

- Trend analysis of loan disbursement and loan outstanding in Consumption loan are in increasing trend. They increase by Rs. 51.3 million and Rs. 271.8 million respectively per year whereas; the loan collection is in decreasing trend by Rs. 28.7 million per year.
- Trend analysis of loan disbursement, loan collection and loan outstanding in other sector all shows increasing trend. They increase Rs. 391.1 million, Rs. 1766.8 million and Rs. 238.7 million per year respectively.
- Cash and bank balance to total deposit of ADBN shows the fluctuating trend during the study period. The mean ratio is 15.65 in the study period.
- Cash and bank balance to current assets of the bank shows the fluctuating trend during the study period. The mean ratio is 13.4%.
- Loan and advances to total deposit of ADBN shows decline in second year and then increasing trend thereafter in the study period. The mean value is 111.83%.
- Ratio of investment on share and debenture to total deposit of ADBN shows in decreasing trend in the study period. The average mean value also shows 0.33%.
- Investment on government securities to total deposit ratio of ADBN is in increasing trend. The average mean ratio remains 7.1% during the study period.
- Return on loan and advances ratio of ADBN is in fluctuating trend. The mean value is 2.69% during the five years of study period.
- Return on total assets of ADBN is in fluctuating trend. The average mean value is 2.17% in the five years of study period.
- Total interest earned to total interest paid ratio of ADBN shows fluctuating trend. The average mean value is 3.08 times.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The research is about the credit management of ADBN. In this chapter, summary, conclusion and recommendation are made including. All the summary and conclusion are made according to obtained data from analysis. Recommendation has been made which would be beneficial for the management of the bank and other stake holders.

5.1 Summary

In the beginning, the bank established for the help and development of agriculture sector is the Agriculture Development Bank. But in present situation Agriculture Development Bank has registered under public limited company on 14th July, 2005. This study was carried out as an academic requirement for master's degree of business studies, on the topic of "Credit Management of ADBN". This study was started with the objective to find out the fact about credit management of selected bank, ADBN. The collection of data was based on secondary data and these collected data were based on five fiscal years from F/Y 2062/63 to F/Y 2066/67 on the annual report published by ADBN. In this case study, various financial and statistical tools like ratio analysis, mean, standard deviation, correlation coefficient and trend analysis etc. have been used to get the meaningful result and to meet the research objectives. The study focused on the analysis of the soundness of ADBN in relation to loan disbursement and recovery as well.

Out of 88 development banks and 32 commercial banks ADBN has been selected for the study by using Judgment or Purposive sampling. To complete this study, many books, journals, articles and various published and unpublished dissertation are followed as guideline to make the study easier and smooth. Analytical and Descriptive research design has been applied for this research work. To evaluate the credit management Agriculture Development Bank is selected under the study and five years financial statements of bank has been used for the study.

The study has been made for allocation of fund available in ADBN. The study has been focused on loan disbursement, loan collection and loan outstanding of the

bank. Different ratios have been calculated and also has been tried to find out the relationship between loan collection, disbursement and outstanding. Trend of different factors has been calculated with the help of trend analysis. Liquidity and Assets management of the bank has been analyzed. Profitability of the bank has been analyzed with the help of profitability ratios.

The study has been divided into five chapters which include introduction, review of literature, research methodology, data presentation and analysis and summary, conclusion and recommendation.

5.2 Conclusions

This part focuses on conclusion made from the study. Following conclusions can be made from the study.

- Highest investment on loan and advances shows better performance of ADBN. Investment on government securities also shows increasing trend whereas, investment on share and debenture shows continuously decreasing trend.
- Loan disbursement and collection from Wholesale and Retail Business sector is very effective. Loan collection from Agriculture sector is very weak, loan collection from Manufacturing and Construction sector is also satisfactory.
- The relationship between loan disbursement, loan collection and loan outstanding shows positive relations.
- Trend analysis in loan disbursement, loan collection and loan outstanding on wholesale and retail business is in increasing trend which shows better performance for bank. Trend analysis in agriculture shows decreasing trend which is bad sign for bank.
- Liquidity ratio shows that ADBN is able to maintain the good liquidity position and also maintain current assets properly. These all show that the liquidity position of bank is better. Thus, credit management is in good position.
- Loan and advances to total deposit of ADBN shows that the bank is successful to utilize more than 100% of outsider's fund in loan and advances. This ratio also shows investment in loan and advances is safe and not taking more risk. Thus credit management is in good position.
- Ratio of investment on share and debenture to total deposit of ADBN shows that the bank is continuously decreasing its deposit for investing in share and debenture whereas, in ratio of investment on government securities to total

deposit indicates that bank has utilized its deposit properly in government securities.

- Return on loan and advances ratio shows normal earning capacity of ADBN in loan and advances. Whereas, return on total assets also shows the normal earning capacity through the assets utilization. Thus, credit management situation is better.
- Total interest earned to total interest paid ratio indicates that ADBN has charged high interest rate to borrower and offering low interest rate to depositors.

5.3 Recommendations

From the analysis of the findings and conclusions of the study, the following recommendation is offered to improve the present lending and collection procedure and change the present management system of the bank.

- Loan outstanding amount on Agriculture sector is very high. So bank should be very careful in loan disbursement in this sector and effective collection system should be developed.
- Cash and bank balance of ADBN is high. Therefore some percentage of cash and bank balance should be invested in profitable sectors.
- The increasing trend in assets management is good for bank. It is shown that the bank is successful to utilize the outsider's funds in loan and advances and in government securities. Thus it is advised to keep continuous but recommended to adopt the stable policy.
- ADBN must concentrate on decreasing ratio of return on total assets as well as return on loan and advances and suggested to invest in profitability areas only, which give high return with low risk.

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APPENDIX –1
Trend Analysis of Agricultural Loan Disbursement

Amount (in millions)

Year(X)	Amount(y)	x = X - 2064	x ²	xy	y_c = a + b x
2062/63	5629.3	-2	4	-11258.6	5419.9
2063/64	5296.9	-1	1	-5296.9	5161.4
2064/65	4776.1	0	0	0	4902.9
2065/66	3653.8	1	1	3653.8	4644.4
2066/67	5158.3	2	4	10316.6	4385.9
n = 5	y = 24514.4	x = 0	x² = 10	xy = -2585.0	

y_c = a + b x

Where,

a = y intercept or value of y when x = 0,

b = slope of trend line or annual growth rate,

x = deviation from some convenient time periods.

Let trend line be

y_c = a + b x..... (i)

Where x = X - Middle year

Here,

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

$$= \frac{24514.4}{5} = 4902.88$$

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

$$= \frac{-2585.1}{10} = -258.51$$

Substituting these values of a and b in equation (i) we get the required trend line

y_c = a + b x = 4902.88-258.51x

For estimation of trend values

y_{2062/63} = 4902.88+(-258.51)×-2
= 5419.9

y_{2063/64} = 4902.88+(-258.51)×-1
= 5161.4

y_{2064/65} = 4902.88+(-258.51)×0
= 4902.9

y_{2065/66} = 4902.88+(-258.51)×1
= 4644.4

y_{2066/67} = 4902.88+(-258.51)×2
= 4385.

APPENDIX -2

Trend Analysis of Agricultural Loan Collection

Amount (in millions)

Year(X)	Amount(y)	x = X - 2064	x ²	xy	y _c = a + b x
2062/63	5953.1	-2	4	-11906.2	5326.2
2063/64	4792.9	-1	1	-4792.9	5304.8
2064/65	4808.3	0	0	0	5283.4
2065/66	5240.3	1	1	5240.3	5262.0
2066/67	5622.3	2	4	11244.6	5240.6
n = 5	y = 26416.9	x = 0	x² = 10	xy = -214.2	

Let trend line be

$$y_c = a + b x \dots\dots\dots (i)$$

Here,

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

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

$$= \frac{26416.9}{5} = 5283.4$$

$$= \frac{-214.2}{10} = -21.4$$

Substituting these values of a and b in equation (i) we get the required trend line

$$y_c = a + b x = 5283.4 - 21.4x$$

For estimation of trend values

$$y_{2062/63} = 5283.4 + (-21.4) \times -2 \\ = 5326.2$$

$$y_{2063/64} = 5283.4 + (-21.4) \times -1 \\ = 5304.8$$

$$y_{2064/65} = 5283.4 + (-21.4) \times 0 \\ = 5283.4$$

$$y_{2065/66} = 5283.4 + (-21.4) \times 1 \\ = 5262.0$$

$$y_{2066/67} = 5283.4 + (-21.4) \times 2 \\ = 5240.6$$

APPENDIX –3

Trend Analysis of Agricultural Loan Outstanding

Amount (in millions)

Year(X)	Amount(y)	x = X - 2064	x ²	xy	y _c = a + b x
2062/63	10112.0	-2	4	-20224.0	10723.7
2063/64	10616.0	-1	1	-10616.0	10246.1
2064/65	10583.9	0	0	0	9768.5
2065/66	8997.4	1	1	8997.4	9290.9
2066/67	8533.3	2	4	17066.6	8813.3
n = 5	y = 48842.6	x = 0	x² = 10	xy = -4776.0	

Let trend line be

$$Y_c = a + b x \dots\dots\dots (i)$$

Here,

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

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

$$= \frac{48842.6}{5} = 9768.5$$

$$= \frac{-4776.0}{10} = -477.6$$

Substituting these values of a and b in equation (i) we get the required trend line

$$Y_c = a + b x = 9768.5 - 477.6x$$

For estimation of trend values

$$Y_{2062/63} = 9768.5 + (-477.6) \times -2 = 10723.7$$

$$Y_{2063/64} = 9768.5 + (-477.6) \times -1 = 10246.1$$

$$Y_{2064/65} = 9768.5 + (-477.6) \times 0 = 9768.5$$

$$Y_{2065/66} = 9768.5 + (-477.6) \times 1 = 9290.9$$

$$Y_{2066/67} = 9768.5 + (-477.6) \times 2 = 8813.3$$

APPENDIX –4

Trend Analysis of Manufacturing and Construction Loan Disbursement

Amount (in millions)

Year(X)	Amount(y)	x = X - 2064	x ²	xy	y _c = a + b x
2062/63	3402.7	-2	4	-6805.4	2895.3
2063/64	3164.1	-1	1	-3164.1	3901.8
2064/65	4532.6	0	0	0	4908.3
2065/66	6849.8	1	1	6849.8	5914.8
2066/67	6592.4	2	4	13184.8	6921.3
n = 5	y = 24541.6	x = 0	x² = 10	xy = 10065.1	

Let trend line be

$$y_c = a + b x \dots\dots\dots (i)$$

Here,

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

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

$$= \frac{24541.6}{5} = 4908.3$$

$$= \frac{10065.1}{10} = 1006.5$$

Substituting these values of a and b in equation (i) we get the required trend line

$$y_c = a + b x = 4908.3 + 1006.5x$$

For estimation of trend values

$$Y_{2062/63} = 4908.3 + 1006.5 \times -2 = 2825.3$$

$$Y_{2063/64} = 4908.3 + 1006.5 \times -1 = 3901.8$$

$$Y_{2064/65} = 4908.3 + 1006.5 \times 0 = 4908.3$$

$$Y_{2065/66} = 4908.3 + 1006.5 \times 1 = 5914.8$$

$$Y_{2066/67} = 4908.3 + 1006.5 \times 2 = 6921.3$$

APPENDIX -5

Trend Analysis of Manufacturing and Construction Loan Collection

Amount (in millions)

Year(X)	Amount(y)	x = X - 2064	x ²	xy	y _c = a + b x
2062/63	3100.9	-2	4	-6201.8	2664.0
2063/64	3050.9	-1	1	-3050.9	3530.4
2064/65	4009.4	0	0	0	4396.8
2065/66	5728.9	1	1	5728.9	5263.2
2066/67	6094.1	2	4	12188.2	6129.6
n = 5	y = 21984.2	x = 0	x² = 10	xy = 8664.4	

Let trend line be

$$y_c = a + b x \dots\dots\dots (i)$$

Here,

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

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

$$= \frac{21984.2}{5} = 4396.8$$

$$= \frac{8664.4}{10} = 866.4$$

Substituting these values of a and b in equation (i) we get the required trend line

$$y_c = a + b x = 4396.8 + 866.4x$$

For estimation of trend values

$$Y_{2062/63} = 4396.8 + 866.4 \times -2 = 2664.0$$

$$Y_{2063/64} = 4396.8 + 866.4 \times -1 = 3530.4$$

$$Y_{2064/65} = 4396.8 + 866.4 \times 0 = 4396.8$$

$$Y_{2065/66} = 4396.8 + 866.4 \times 1 = 5263.2$$

$$Y_{2066/67} = 4396.8 + 866.4 \times 2 = 6129.6$$

APPENDIX –6

Trend Analysis of Manufacturing and Construction Loan Outstanding

Amount (in millions)

Year(X)	Amount(y)	x = X - 2064	x ²	xy	y _c = a + b x
2062/63	5605.4	-2	4	-11210.8	5327.0
2063/64	5718.9	-1	1	-5718.9	5942.6
2064/65	6242.2	0	0	0	6558.2
2065/66	7363.1	1	1	7363.1	7173.8
2066/67	7861.4	2	4	15722.8	7789.4
n = 5	y = 32791.0	x = 0	x² = 10	xy = 6156.2	

Let trend line be

$$y_c = a + b x \dots\dots\dots (i)$$

Here,

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

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

$$= \frac{32791.0}{5} = 6558.2$$

$$= \frac{6156.2}{10} = 615.6$$

Substituting these values of a and b in equation (i) we get the required trend line

$$y_c = a + b x = 6558.2 + 615.6x$$

For estimation of trend values

$$y_{2062/63} = 6558.2 + 615.6 \times -2 = 5327.0$$

$$y_{2063/64} = 6558.2 + 615.6 \times -1 = 5942.6$$

$$y_{2064/65} = 6558.2 + 615.6 \times 0 = 6558.2$$

$$y_{2065/66} = 6558.2 + 615.6 \times 1 = 7173.8$$

$$y_{2066/67} = 6558.2 + 615.6 \times 2 = 7789.4$$

APPENDIX -7

Trend Analysis of Wholesale and Retail Business Loan Disbursement

Amount (in millions)

Year(X)	Amount(y)	x = X - 2064	x ²	xy	y _c = a + b x
2062/63	8301.6	-2	4	-16603.2	8208.6
2063/64	8785.6	-1	1	-8785.6	9785.1
2064/65	12481.7	0	0	0	11361.6
2065/66	13323.8	1	1	13323.8	12938.1
2066/67	13915.1	2	4	27830.2	14514.6
n = 5	y = 56807.8	x = 0	x² = 10	xy = 15765.2	

Let trend line be

$$y_c = a + b x \dots\dots\dots (i)$$

Here,

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

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

$$= \frac{56807.8}{5} = 11361.6$$

$$= \frac{15765.2}{10} = 1576.5$$

Substituting these values of a and b in equation (i) we get the required trend line

$$y_c = a + b x = 11361.6 + 1576.5x$$

For estimation of trend values

$$Y_{2062/63} = 11361.6 + 1576.5 \times -2 = 8208.6$$

$$Y_{2063/64} = 11361.6 + 1576.5 \times -1 = 9785.1$$

$$Y_{2064/65} = 11361.6 + 1576.5 \times 0 = 11361.6$$

$$Y_{2065/66} = 11361.6 + 1576.5 \times 1 = 12938.1$$

$$Y_{2066/67} = 11361.6 + 1576.5 \times 2 = 14514.6$$

APPENDIX –8

Trend Analysis of Wholesale and Retail Business Loan Collection

Amount (in millions)

Year(X)	Amount(y)	x = X - 2064	x ²	xy	y _c = a + b x
2062/63	8944.0	-2	4	-17888.0	8621.0
2063/64	8799.0	-1	1	-8799.0	9839.2
2064/65	11771.3	0	0	0	11057.4
2065/66	12676.7	1	1	12676.7	12275.6
2066/67	13095.9	2	4	26191.8	13493.8
n = 5	y = 52286.9	x = 0	x² = 10	xy = 12181.5	

Let trend line be

$$y_c = a + b x \dots\dots\dots (i)$$

Here,

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

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

$$= \frac{52286.9}{5} = 11057.4$$

$$= \frac{12181.5}{10} = 1218.2$$

Substituting these values of a and b in equation (i) we get the required trend line

$$y_c = a + b x = 11057.4 + 1218.2x$$

For estimation of trend values

$$y_{2062/63} = 11057.4 + 1218.2 \times -2 = 8621.0$$

$$y_{2063/64} = 11057.4 + 1218.2 \times -1 = 9839.2$$

$$y_{2064/65} = 11057.4 + 1218.2 \times 0 = 11057.4$$

$$y_{2065/66} = 11057.4 + 1218.2 \times 1 = 12275.6$$

$$y_{2066/67} = 11057.4 + 1218.2 \times 2 = 13493.8$$

APPENDIX -9

Trend Analysis of Wholesale and Retail Business Loan Outstanding

Amount (in millions)

Year(X)	Amount(y)	x = X - 2064	x ²	xy	y _c = a + b x
2062/63	8966.6	-2	4	-17933.2	8667.9
2063/64	8953.2	-1	1	-8953.2	9236.6
2064/65	9663.6	0	0	0	9805.3
2065/66	10313.1	1	1	10313.1	10374.0
2066/67	11130.0	2	4	22260.0	10942.7
n = 5	y = 49026.5	x = 0	x² = 10	xy = 5686.7	

Let trend line be

$$y_c = a + b x \dots\dots\dots (i)$$

Here,

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

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

$$= \frac{49026.5}{5} = 9805.3$$

$$= \frac{5686.7}{10} = 568.7$$

Substituting these values of a and b in equation (i) we get the required trend line

$$y_c = a + b x = 9805.3 + 568.7x$$

For estimation of trend values

$$Y_{2062/63} = 9805.3 + 568.7 \times -2 = 8667.9$$

$$Y_{2063/64} = 9805.3 + 568.7 \times -1 = 9236.6$$

$$Y_{2064/65} = 9805.3 + 568.7 \times 0 = 9805.3$$

$$Y_{2065/66} = 9805.3 + 568.7 \times 1 = 10374.0$$

$$Y_{2066/67} = 9805.3 + 568.7 \times 2 = 10942.7$$

APPENDIX –10

Trend Analysis of Entertainment and Other Services Loan Disbursement

Amount (in millions)

Year(X)	Amount(y)	x = X - 2064	x ²	xy	y _c = a + b x
2062/63	3058.9	-2	4	-611.78	2746.3
2063/64	2839.4	-1	1	-283.94	2860.8
2064/65	2415.5	0	0	0	2975.3
2065/66	3022.9	1	1	302.29	3089.8
2066/67	3539.7	2	4	707.94	3204.3
n = 5	y = 14876.4	x = 0	x² = 10	xy = 1145.1	

Let trend line be

$$y_c = a + b x \dots\dots\dots (i)$$

Here,

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

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

$$= \frac{14876.4}{5} = 2975.3$$

$$= \frac{1145.1}{10} = 114.5$$

Substituting these values of a and b in equation (i) we get the required trend line

$$y_c = a + b x = 2975.3 + 114.5x$$

For estimation of trend values

$$y_{2062/63} = 2975.3 + 114.5 \times -2 = 2746.3$$

$$y_{2063/64} = 2975.3 + 114.5 \times -1 = 2860.8$$

$$y_{2064/65} = 2975.3 + 114.5 \times 0 = 2975.3$$

$$y_{2065/66} = 2975.3 + 114.5 \times 1 = 3089.8$$

$$y_{2066/67} = 2975.3 + 114.5 \times 2 = 3204.3$$

APPENDIX –11

Trend Analysis of Entertainment and Other Services Loan Collection

Amount (in millions)

Year(X)	Amount(y)	x = X - 2064	x ²	xy	y _c = a + b x
2062/63	2433.7	-2	4	-4867.4	2159.0
2063/64	2395.0	-1	1	-2395.0	2338.4
2064/65	1943.9	0	0	0	2517.8
2065/66	2576.6	1	1	2576.6	2697.2
2066/67	3239.9	2	4	6479.8	2876.6
n = 5	y = 12589.1	x = 0	x² = 10	xy = 1794.0	

Let trend line be

$$y_c = a + b x \dots\dots\dots (i)$$

Here,

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

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

$$= \frac{12589.1}{5} = 2517.8$$

$$= \frac{1794.0}{10} = 179.4$$

Substituting these values of a and b in equation (i) we get the required trend line

$$y_c = a + b x = 2517.8 + 179.4x$$

For estimation of trend values

$$y_{2062/63} = 2517.8 + 179.4 \times -2 = 2159.0$$

$$y_{2063/64} = 2517.8 + 179.4 \times -1 = 2338.4$$

$$y_{2064/65} = 2517.8 + 179.4 \times 0 = 2517.8$$

$$y_{2065/66} = 2517.8 + 179.4 \times 1 = 2697.2$$

$$y_{2066/67} = 2517.8 + 179.4 \times 2 = 2876.6$$

APPENDIX –12

Trend Analysis of Entertainment and Other Services Loan Outstanding

Amount (in millions)

Year(X)	Amount(y)	x = X - 2064	x ²	xy	y _c = a + b x
2062/63	2841.2	-2	4	-5682.4	2869.1
2063/64	3285.4	-1	1	-3285.4	3294.1
2064/65	3757.0	0	0	0	3719.1
2065/66	4206.1	1	1	4206.1	4144.1
2066/67	4505.7	2	4	9011.4	4569.1
n = 5	y = 18595.4	x = 0	x² = 10	xy = 4249.7	

Let trend line be

$$y_c = a + b x \dots\dots\dots (i)$$

Here,

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

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

$$= \frac{18595.4}{5} = 3719.1$$

$$= \frac{4249.7}{10} = 425.0$$

Substituting these values of a and b in equation (i) we get the required trend line

$$y_c = a + b x = 3719.1 + 425x$$

For estimation of trend values

$$y_{2062/63} = 3719.1 + 425 \times -2 = 2869.1$$

$$y_{2063/64} = 3719.1 + 425 \times -1 = 3294.1$$

$$y_{2064/65} = 3719.1 + 425 \times 0 = 3719.1$$

$$y_{2065/66} = 3719.1 + 425 \times 1 = 4144.1$$

$$y_{2066/67} = 3719.1 + 425 \times 2 = 4569.1$$

APPENDIX –13

Trend Analysis of Consumption Loan Disbursement

Amount (in millions)

Year(X)	Amount(y)	x = X - 2064	x ²	xy	y _c = a + b x
2062/63	1122.6	-2	4	-2245.2	919.5
2063/64	1105.7	-1	1	-1105.7	970.8
2064/65	380.4	0	0	0	1022.1
2065/66	1139.9	1	1	1139.9	1073.4
2066/67	1361.8	2	4	2723.6	1124.7
n = 5	y = 5110.4	x = 0	x² = 10	xy = 512.6	

Let trend line be

$$y_c = a + b x \dots\dots\dots (i)$$

Here,

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

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

$$= \frac{5110.4}{5} = 1022.1$$

$$= \frac{512.6}{10} = 51.3$$

Substituting these values of a and b in equation (i) we get the required trend line

$$y_c = a + b x = 1022.1 + 51.3x$$

For estimation of trend values

$$Y_{2062/63} = 1022.1 + 51.3 \times -2 = 919.5$$

$$Y_{2063/64} = 1022.1 + 51.3 \times -1 = 970.8$$

$$Y_{2064/65} = 1022.1 + 51.3 \times 0 = 1022.1$$

$$Y_{2065/66} = 1022.1 + 51.3 \times 1 = 1073.4$$

$$Y_{2066/67} = 1022.1 + 51.3 \times 2 = 1124.7$$

APPENDIX –14

Trend Analysis of Consumption Loan Collection

Amount (in millions)

Year(X)	Amount(y)	$x = X - 2064$	x^2	xy	$y_c = a + b x$
2062/63	1045.1	-2	4	-2090.2	864.1
2063/64	1028.2	-1	1	-1028.2	835.4
2064/65	287.2	0	0	0	806.7
2065/66	514.4	1	1	514.4	778.0
2066/67	1158.4	2	4	2316.8	749.3
n = 5	y = 4033.3	x = 0	x² = 10	xy = -287.2	

Let trend line be

$$y_c = a + b x \dots\dots\dots (i)$$

Here,

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

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

$$= \frac{4033.3}{5} = 806.7$$

$$= \frac{-287.2}{10} = -28.7$$

Substituting these values of a and b in equation (i) we get the required trend line

$$y_c = a + b x = 806.7 - 28.7x$$

For estimation of trend values

$$Y_{2062/63} = 806.7 + (-28.7) \times -2 = 864.1$$

$$Y_{2063/64} = 806.7 + (-28.7) \times -1 = 835.4$$

$$Y_{2064/65} = 806.7 + (-28.7) \times 0 = 806.7$$

$$Y_{2065/66} = 806.7 + (-28.7) \times 1 = 778.0$$

$$Y_{2066/67} = 806.7 + (-28.7) \times 2 = 749.3$$

APPENDIX –15

Trend Analysis of Consumption Loan Outstanding

Amount (in millions)

Year(X)	Amount(y)	x = X - 2064	x ²	xy	y _c = a + b x
2062/63	1188.7	-2	4	-2377.4	1054.0
2063/64	1266.3	-1	1	-1266.3	1325.8
2064/65	1359.5	0	0	0	1597.6
2065/66	1985.0	1	1	1985.0	1869.4
2066/67	2188.4	2	4	4376.8	2141.2
n = 5	y = 7987.9	x = 0	x² = 10	xy = 2718.1	

Let trend line be

$$y_c = a + b x \dots\dots\dots (i)$$

Here,

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

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

$$= \frac{7987.9}{5} = 1597.6$$

$$= \frac{2718.1}{10} = 271.8$$

Substituting these values of a and b in equation (i) we get the required trend line

$$y_c = a + b x = 1597.6 + 271.8x$$

For estimation of trend values

$$Y_{2062/63} = 1597.6 + 271.8 \times -2 = 1054.0$$

$$Y_{2063/64} = 1597.6 + 271.8 \times -1 = 1325.8$$

$$Y_{2064/65} = 1597.6 + 271.8 \times 0 = 1597.6$$

$$Y_{2065/66} = 1597.6 + 271.8 \times 1 = 1869.4$$

$$Y_{2066/67} = 1597.6 + 271.8 \times 2 = 2141.2$$

APPENDIX –16

Trend Analysis of Others Loan Disbursement

Amount (in millions)

Year(X)	Amount(y)	x = X - 2064	x ²	xy	y _c = a + b x
2062/63	9092.8	-2	4	-18185.6	8409.1
2063/64	8089.8	-1	1	-8089.8	9806.2
2064/65	11749.7	0	0	0	11203.3
2065/66	13921.9	1	1	13921.9	12600.4
2066/67	13162.4	2	4	26324.8	13997.5
n = 5	y = 56016.6	x = 0	x² = 10	xy = 13971.3	

Let trend line be

$$y_c = a + b x \dots\dots\dots (i)$$

Here,

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

$$= \frac{56016.6}{5} = 11203.3$$

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

$$= \frac{13971.3}{10} = 1397.1$$

Substituting these values of a and b in equation (i) we get the required trend line

$$y_c = a + b x = 11203.3 + 1397.1x$$

For estimation of trend values

$$y_{2062/63} = 11203.3 + 1397.1 \times -2 = 8409.1$$

$$y_{2063/64} = 11203.3 + 1397.1 \times -1 = 9806.2$$

$$y_{2064/65} = 11203.3 + 1397.1 \times 0 = 11203.3$$

$$y_{2065/66} = 11203.3 + 1397.1 \times 1 = 12600.4$$

$$y_{2066/67} = 11203.3 + 1397.1 \times 2 = 13997.5$$

APPENDIX –17

Trend Analysis of Others Loan Collection

Amount (in millions)

Year(X)	Amount(y)	x = X - 2064	x ²	xy	y _c = a + b x
2062/63	7101.0	-2	4	-14202.0	7117.9
2063/64	8086.0	-1	1	-8086.0	8884.7
2064/65	11351.5	0	0	0	10651.5
2065/66	13481.8	1	1	13481.8	12418.3
2066/67	13237.3	2	4	26474.6	14185.1
n = 5	y = 53257.6	x = 0	x² = 10	xy = 17668.4	

Let trend line be

$$y_c = a + b x \dots\dots\dots (i)$$

Here,

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

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

$$= \frac{53257.6}{5} = 10651.5$$

$$= \frac{17668.4}{10} = 1766.8$$

Substituting these values of a and b in equation (i) we get the required trend line

$$y_c = a + b x = 10651.5 + 1766.8x$$

For estimation of trend values

$$y_{2062/63} = 10651.5 + 1766.8 \times -2 = 7117.9$$

$$y_{2063/64} = 10651.5 + 1766.8 \times -1 = 8884.7$$

$$y_{2064/65} = 10651.5 + 1766.8 \times 0 = 10651.5$$

$$y_{2065/66} = 10651.5 + 1766.8 \times 1 = 12418.3$$

$$y_{2066/67} = 10651.5 + 1766.8 \times 2 = 14185.1$$

APPENDIX –18

Trend Analysis of Others Loan Outstanding

Amount (in millions)

Year(X)	Amount(y)	x = X - 2064	x ²	xy	y _c = a + b x
2062/63	4593.7	-2	4	-9187.4	4521.7
2063/64	4596.8	-1	1	-4596.8	4760.4
2064/65	4998.5	0	0	0	4999.1
2065/66	5442.3	1	1	5442.3	5237.8
2066/67	5364.2	2	4	10728.4	5476.5
n = 5	y = 24995.5	x = 0	x² = 10	xy = 2386.5	

Let trend line be

$$y_c = a + b x \dots\dots\dots (i)$$

Here,

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

$$= \frac{24995.5}{5} = 4999.1$$

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

$$= \frac{2386.5}{10} = 238.7$$

Substituting these values of a and b in equation (i) we get the required trend line

$$y_c = a + b x = 4999.1 + 238.7x$$

For estimation of trend values

$$y_{2062/63} = 4999.1 + 238.7 \times -2 = 4521.7$$

$$y_{2063/64} = 4999.1 + 238.7 \times -1 = 4760.4$$

$$y_{2064/65} = 4999.1 + 238.7 \times 0 = 4999.1$$

$$y_{2065/66} = 4999.1 + 238.7 \times 1 = 5237.8$$

$$y_{2066/67} = 4999.1 + 238.7 \times 2 = 5476.5$$

APPENDIX –19

Cash and Bank Balance to Total Deposit Ratio

FY	Ratio (x)	$x-\bar{x}$	$(x-\bar{x})^2$
2062/63	16.10	0.45	0.20
2063/64	11.88	-3.77	14.21
2064/65	11.29	-4.36	19.01
2065/66	21.20	5.55	30.80
2066/67	17.78	2.13	4.54
n=5	$\bar{x}=78.25$		$(x-\bar{x})^2=68.76$

$$\begin{aligned}\text{Mean } (\bar{x}) &= \frac{\sum x}{n} \\ &= \frac{78.25}{5} \\ &= 15.65\end{aligned}$$

$$\begin{aligned}\text{SD } (\sigma) &= \sqrt{\frac{\sum (x-\bar{x})^2}{N}} \\ &= \sqrt{\frac{68.76}{5}} \\ &= 3.71\end{aligned}$$

$$\begin{aligned}\text{CV} &= \frac{\sigma}{\bar{x}} \times 100 \\ &= \frac{3.71}{15.65} \times 100\% \\ &= 23.71\%\end{aligned}$$

APPENDIX –20
Cash and Bank Balance to Current Assets Ratio

Year	Ratio (x)	$x-\bar{x}$	$(x-\bar{x})^2$
2062/63	15.80	2.40	5.76
2063/64	11.60	-1.80	3.24
2064/65	9.90	-3.50	12.25
2065/66	16.60	3.20	10.24
2066/67	13.10	-0.30	0.09
n=5	x=67		$(x-\bar{x})^2=31.58$

$$\begin{aligned}\text{Mean } (\bar{x}) &= \frac{\sum x}{n} \\ &= \frac{67}{5} \\ &= 13.4\end{aligned}$$

$$\begin{aligned}\text{SD } (\sigma) &= \sqrt{\frac{\sum (x-\bar{x})^2}{N}} \\ &= \sqrt{\frac{31.58}{5}} \\ &= 2.51\end{aligned}$$

$$\begin{aligned}\text{CV} &= \frac{\sigma}{\bar{x}} \times 100\% \\ &= \frac{2.51}{13.4} \times 100\% \\ &= 18.73\%\end{aligned}$$

APPENDIX -21

Loan and Advances to Total Deposit Ratio

Year	Ratio (x)	$x-\bar{x}$	$(x-\bar{x})^2$
2062/63	103.3	-8.53	72.76
2063/64	90.33	-21.5	462.25
2064/65	111.62	-0.21	0.04
2065/66	119.21	7.38	54.46
2066/67	134.67	22.84	521.67
n=5	x=559.13		$(x-\bar{x})^2=1111.18$

$$\begin{aligned}\text{Mean } (\bar{x}) &= \frac{\sum x}{n} \\ &= \frac{559.13}{5} \\ &= 111.83\end{aligned}$$

$$\begin{aligned}\text{SD } (\sigma) &= \sqrt{\frac{\sum (x-\bar{x})^2}{N}} \\ &= \sqrt{\frac{1111.18}{5}} \\ &= 14.91\end{aligned}$$

$$\begin{aligned}\text{CV} &= \frac{\sigma}{\bar{x}} \times 100\% \\ &= \frac{14.91}{111.83} \times 100\% \\ &= 13.33\%\end{aligned}$$

APPENDIX –22

Investment on share and Debenture to Total Deposit Ratio

Year	Ratio (x)	$x-\bar{x}$	$(x-\bar{x})^2$
2062/63	0.49	0.16	0.026
2063/64	0.45	0.12	0.014
2064/65	0.44	0.11	0.012
2065/66	0.25	-0.08	0.006
2066/67	0.006	-0.324	0.105
n = 5	x = 1.636		$(x-\bar{x})^2 = 0.163$

$$\begin{aligned}\text{Mean } (\bar{x}) &= \frac{\sum x}{n} \\ &= \frac{1.636}{5} \\ &= 0.33\end{aligned}$$

$$\begin{aligned}\text{SD } (\sigma) &= \sqrt{\frac{\sum (x-\bar{x})^2}{N}} \\ &= \sqrt{\frac{0.163}{5}} \\ &= 0.18\end{aligned}$$

$$\begin{aligned}\text{CV} &= \frac{\sigma}{\bar{x}} \times 100\% \\ &= \frac{0.18}{0.33} \times 100\% \\ &= 54.55\end{aligned}$$

APPENDIX –23

Investment on Government Securities to Total Deposit Ratio

Year	Ratio (x)	$x-\bar{x}$	$(x-\bar{x})^2$
2062/63	1.34	-5.76	33.18
2063/64	5.43	-1.67	2.79
2064/65	8.31	1.21	1.46
2065/66	9.88	2.78	7.73
2066/67	10.55	3.45	11.90
n = 5	x = 35.51		$(x-\bar{x})^2 = 57.06$

$$\begin{aligned}\text{Mean } (\bar{x}) &= \frac{\sum x}{n} \\ &= \frac{35.51}{5} \\ &= 7.10\end{aligned}$$

$$\begin{aligned}\text{SD } (\sigma) &= \sqrt{\frac{\sum (x-\bar{x})^2}{N}} \\ &= \sqrt{\frac{57.06}{5}} \\ &= 3.38\end{aligned}$$

$$\begin{aligned}\text{CV} &= \frac{\sigma}{\bar{x}} \times 100\% \\ &= \frac{3.38}{7.10} \times 100\% \\ &= 47.61\%\end{aligned}$$

APPENDIX –24
Return on Loan and Advances Ratio

Year	Ratio (x)	$x - \bar{x}$	$(x - \bar{x})^2$
2062/63	1.15	-1.54	2.37
2063/64	3.61	0.92	0.85
2064/65	1.84	-0.85	0.72
2065/66	2.52	-0.17	0.03
2066/67	4.33	1.64	2.69
n = 5	x = 13.45		$(x - \bar{x})^2 = 6.66$

$$\begin{aligned} \text{Mean } (\bar{x}) &= \frac{\sum x}{n} \\ &= \frac{13.45}{5} \\ &= 2.69 \end{aligned}$$

$$\begin{aligned} \text{SD } (\sigma) &= \sqrt{\frac{\sum (x - \bar{x})^2}{N}} \\ &= \sqrt{\frac{6.66}{5}} \\ &= 1.15 \end{aligned}$$

$$\begin{aligned} \text{CV} &= \frac{\sigma}{\bar{x}} \times 100\% \\ &= \frac{1.15}{2.69} \times 100\% \\ &= 42.75 \end{aligned}$$

APPENDIX –25
Return on Total Assets Ratio

Year	Ratio (x)	$x-\bar{x}$	$(x-\bar{x})^2$
2062/63	1.00	-1.17	1.37
2063/64	2.77	0.60	0.36
2064/65	1.52	-0.65	0.42
2065/66	2.04	-0.13	0.02
2066/67	3.50	1.33	1.77
n = 5	x=10.83		$(x-\bar{x})^2 = 3.94$

$$\begin{aligned}\text{Mean } (\bar{x}) &= \frac{\sum x}{n} \\ &= \frac{10.83}{5} \\ &= 2.17\end{aligned}$$

$$\begin{aligned}\text{SD } (\sigma) &= \sqrt{\frac{\sum (x-\bar{x})^2}{N}} \\ &= \sqrt{\frac{3.94}{5}} \\ &= 0.89\end{aligned}$$

$$\begin{aligned}\text{CV} &= \frac{\sigma}{\bar{x}} \times 100\% \\ &= \frac{0.89}{2.17} \times 100\% \\ &= 41.01\%\end{aligned}$$

APPENDIX –26

Total Interest Earned to Total Interest Paid Ratio

Year	Ratio (x)	$x - \bar{x}$	$(x - \bar{x})^2$
2062/63	2.80	-0.28	0.08
2063/64	2.88	-0.20	0.04
2064/65	2.41	-0.67	0.45
2065/66	3.66	0.58	0.34
2066/67	3.63	0.55	0.30
n = 5	x = 15.38		$(x - \bar{x})^2 = 1.21$

$$\begin{aligned} \text{Mean } (\bar{x}) &= \frac{\sum x}{n} \\ &= \frac{15.38}{5} \\ &= 3.08 \end{aligned}$$

$$\begin{aligned} \text{SD } (\sigma) &= \sqrt{\frac{\sum (x - \bar{x})^2}{N}} \\ &= \sqrt{\frac{1.21}{5}} \\ &= 0.49 \end{aligned}$$

$$\begin{aligned} \text{CV} &= \frac{\sigma}{\bar{x}} \times 100\% \\ &= \frac{0.49}{3.08} \times 100\% \\ &= 15.91\% \end{aligned}$$