

“Financial Soundness of Select Scheduled Commercial Banks”

BY

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REG NO: 15PCO010

Under the guidance of

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**In Partial Fulfillment of the Requirement for Award of the Degree of
MASTER OF COMMERCE.**

DEPARTMENT OF COMMERCE

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DEPARTMENT OF COMMERCE
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This is to certify that the project entitled,
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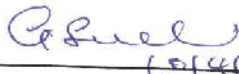
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I hereby declare that the work entitled "Financial Soundness of select Scheduled Commercial Banks" is submitted in partial fulfillment of the requirements for the award of the degree of Master of Commerce, under the supervision and guidance of **Mrs.A.R.Rihana Banu, M.Com(CA), PGDCA., SET., (Ph.D), Assistant Professor**, Department of Commerce, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore-641043.

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SYNOPSIS

Financial sector is one of the most significant sector, if a country is developing in nature. The sustainability and growth of banking sector is important for development of the financial sector as well as economic growth. The soundness of the banking system reflects the development of the economy. Therefore in order to sustain and grow banks have to be financially sound. Thus it become important to measure the financial soundness of the banks in order to judge their respective position.

The study was conducted on “Financial Soundness of select Scheduled Commercial Banks” to measure the financial health of select banks with the help of Z-Score. Tools used for the study was Z-Score to evaluate the financial soundness, Time series to predict the Z Score for the period 2017 to 2020, to test the hypothesis t-test was worked by using SPSS. 10 banks were selected based on the asset value. Among the select banks five are public and the other five are private sector. Data for this study was collected from secondary source in Statistical tables issued by RBI and various websites and covered the study period of five years from 2011-12 to 2015-2016.. The study reveals that the Bank of India was highly safe to lend money. It valuation of Z score was widely useful to investors to monitor the safety of their investments. During the study period six select banks are in safe zone and four of the select banks are in grey zone. Bank of India and Kotak Mahindra Bank were in top position. Canara Bank secured the last position among the select banks. Prediction was made to show the financial soundness of select scheduled commercial banks for the period between 2017-2020.

CHAPTER I

INTRODUCTION

A bank is just like a heart in the economic structure and the capital provided by it is like blood. Banks are the backbone of the global economy, providing capital for innovation, infrastructure, job creation and overall prosperity. Economic development of the economy is reflected through the soundness of the banking system and its sound application. Commercial banking segment has strong effect on the economy of a country. The basic role of this segment is to make the overall financial system attractive, effective and commercial banks are the financial institutions which collect idle money of the people and give loans to businesses and households. These banks also provide a number of services to their customers. Banking is now an essential part of any economic system. It plays very important role in economic development of any country. They help both consumers and businesses to raise funds to meet their needs. The commercial banks in India have played a significant role in the development of the economy. Modern trade and commerce would almost be impossible without the availability of suitable banking services. First, banking promotes savings. All manner of people, from the ordinary laborers and workers to the rich land owners and businessmen, can keep their money safely in banks and saving centers. Secondly, banking promotes investments. Banks easily invest the money they get in industry, agriculture and trade. They either invest it directly or advance loans to other investors. Thirdly, it is most through banks that foreign trade is carried on. Whether we export or import, it is through banks that money is transferred from one country to another. It also helps us to evaluate how well a bank is using its resources to make a profit. Financial performance is a subjective measure of how well a bank can use assets from its primary mode of business and generate revenues.

The health and efficiency of the financial sector are crucial to economic growth of a country because the pace of economic growth, a balanced capital market, an efficient flow of fund between savers and investors cannot be preserved without a sound financial sector. In every country, the banking sector is the most important mechanism for performing a lot of tasks related to deposit mobilization, credit evaluation and monitoring, providing access to a payments system and to a clearing house for transactions. As banks play the most major roles in the economy. Hence it is important to evaluate the financial soundness of banks.

1.1 Crowther's Definition of Banking

- Bank is an institution which collects money from those who have in spare or who are saving it out of their income and lend this out to those who require it.
- All those institutions which are in the business of banking are called financial institutions.

1.2 Reserve Bank of India (RBI)

The country had no central bank prior to the establishment of the RBI. The RBI is the supreme monetary and banking authority in the country and controls the banking system in India. It is called the Reserve Bank' as it keeps the reserves of all commercial banks. Now, banks in India are primarily of two types Schedule and Non Schedule.

Schedule Bank

Schedule bank are further classified into commercial bank and cooperative banks.

1.3 Meaning of Commercial Bank

A commercial bank is a financial institution which performs the functions of accepting deposits from the general public and giving loans for investment with the aim of earning profit. They generally finance trade and commerce with short-term loans. They charge high rate of interest from the borrowers but pay much less rate of Interest to their depositors with the result that the difference between the two rates of interest becomes the main source of profit to the commercial banks.

Scheduled Commercial Bank

A scheduled bank, in India, refers to a bank which is listed in the 2nd Schedule of the Reserve Bank of India Act, 1934. Banks not under this Schedule are called non-scheduled banks. Scheduled banks are usually private, foreign and nationalized banks operating in India. However, cooperative banks are allowed to seek scheduled bank status if they satisfy certain criteria. A scheduled bank is eligible for loans from the Reserve Bank of India at bank rate.

Scheduled commercial banks includes

- Nationalized banks
- State Bank of India and its associates
- Regional Rural Bank (RRBs)
- Foreign banks
- Other Indian private sector banks

Definition

- Scheduled banks in India are those banks which have been included in the second schedule of Reserve Bank Of India (RBI) Act, 1934.
- Reserve Bank Of India in turn includes only those banks in this schedule which satisfies the criteria mentioned on section 42(6)(a) of the Reserve Bank Of India Act , 1934.

Criteria for Scheduled Banks

- Scheduled banks are those banks whose minimum paid up capital and reserve amount to Rs.25 lakhs.
- These banks have to submit details of their activities to the Reserve Bank of India every week.
- These banks are listed on the second schedule of the Reserve Bank of India Act 1934.
- It should be a cooperation or co-operative society and not a partnership or a single owner firm.

1.4 Functions of Commercial Banks

The two most distinctive features of a commercial bank are borrowing and lending, i.e., acceptance of deposits and lending of money to projects to earn Interest (profit). In short, banks borrow to lend. The rate of interest offered by the banks to depositors is called the borrowing rate while the rate at which banks lend out is called lending rate.

The difference between the rates is called 'spread' which is appropriated by the banks. Mind, all financial institutions are not commercial banks because only those which perform dual functions of (i) accepting deposits and (ii) giving loans are termed as commercial banks. Functions of commercial banks are classified in to two main categories :

(A) Primary functions and

(B) Secondary functions

(A) Primary Functions:

1. It accepts deposits:

A commercial bank accepts deposits in the form of current, savings and fixed deposits. It collects the surplus balances of the Individuals, firms and finances to satisfy the temporary needs of commercial transactions. Deposits are the lifeline of banks.

Deposits are of three types as under:

(i) Current account deposits : Such deposits are payable on demand and are, therefore, called demand deposits. These can be withdrawn by the depositors any number of times depending upon the balance in the account. The bank does not pay any Interest on these deposits but provides cheque facilities. These accounts are generally maintained by businessmen and Industrialists who receive and make business payments of large amounts through cheques.

(ii) Fixed deposits (Time deposits) : Fixed deposits have a fixed period of maturity and are referred to as time deposits. These are deposits for a fixed term, i.e., period of time ranging from a few days to a few years. These are neither payable on demand nor they enjoy cheque facilities.

They can be withdrawn only after the maturity of the specified fixed period. They carry higher rate of interest. They are not treated as a part of money supply Recurring deposit in which a regular deposit of an agreed sum is made is also a variant of fixed deposits.

(iii) Savings account deposits : The saving deposits main objective is to save. Savings account is most suitable for individuals, households. They combine the features of both current account and fixed deposit account. They are payable on demand and also withdraw by cheque. But bank gives this facility with some restrictions, e.g., a bank may allow four or five cheques in a month. Interest paid on savings account deposits is lesser than that of fixed deposit.

Difference between demand deposits and time (term) deposits:

Two traditional forms of deposits are demand deposit and term (or time) deposit:

(i) Deposits which can be withdrawn on demand by depositors are called demand deposits. Term deposits, also called time deposits, are deposits which are payable only after the expiry of the specified period.

(ii) Demand deposits do not carry interest whereas time deposits carry a fixed rate of interest.

(iii) Demand deposits are highly liquid whereas time deposits are less liquid.

2. It gives loans and advances:

The second major function of a commercial bank is to give loans and advances particularly to businessmen and entrepreneurs and thereby earn interest. This was, in fact,

the main source of income of the bank. A bank keeps a certain portion of the deposits with itself as reserve and gives (lends) the balance to the borrowers as loans and advances in the form of cash credit, demand loans, short-run loans, overdraft as explained under.

(i) Cash Credit : An eligible borrower is first sanctioned a credit limit and within that limit he is allowed to withdraw a certain amount on a given security. The withdrawing power depends upon the borrower's current assets, the stock statement of which is submitted by him to the bank as security. Interest is charged by the bank on the drawn or utilized portion of credit (loan).

(ii) Demand Loans : A loan which can be recalled on demand is called demand loan. There is no stated maturity. The entire loan amount is paid in lump sum by crediting it to the loan account of the borrower. Those like security brokers whose credit needs fluctuate generally, take such loans on personal security and financial assets.

(iii) Short-term Loans : Short-term loans are given against some security as personal loans to finance working capital or as priority sector advances. The entire amount was repaid either in one installment or in a number of installments over the period of loan.

Investment:

Commercial banks invest their surplus fund usually in 3 types of securities:

- (i) Government securities,
- (ii) Other approved securities and
- (iii) Other securities. Banks earn interest on these securities.

(B) Secondary Functions:

Apart from the above-mentioned two primary (major) functions, commercial banks perform the following secondary functions also.

3. Discounting bills of exchange:

A bill of exchange represents a promise to pay a fixed amount of money at a specific point of time in future. It can also be en-cashed earlier through discounting process of a commercial bank. Alternatively, a bill of exchange is a document acknowledging an amount of money owed in consideration of goods received. It is a paper asset signed by the debtor and the creditor for a fixed amount payable on a fixed date. It works like this.

4. Overdraft facility:

An overdraft is an advance given by allowing a customer keeping current account to overdraw his current account up to an agreed limit. It is a facility to a depositor for overdrawing the amount than the balance amount in his account.

In other words, depositors of current account make arrangement with the banks that in case a cheque has been drawn by them which are not covered by the deposit, then the bank should grant overdraft and honor the cheque.

Difference between Overdraft facility and Loan:

- Overdraft is made without security in current account but loans are given against security.
- In the case of loan, the borrower has to pay interest on full amount sanctioned but in the case of overdraft, the borrower is given the facility of borrowing only as much as he requires.
- Whereas the borrower of loan pays Interest on amount outstanding against him but customer of overdraft pays interest on the daily balance.

5. Agency functions of the bank:

The bank acts as an agent of its customers and gets commission for performing agency functions as under:

(i) Transfer of funds : It provides facility for cheap and easy remittance of funds from place-to-place through demand drafts, mail transfers, telegraphic transfers, etc.

(ii) Collection of funds : It collects funds through cheques, bills, bundles and demand drafts on behalf of its customers.

(iii) Payments of various items : It makes payment of taxes. Insurance premium, bills, etc. as per the directions of its customers.

(iv) Purchase and sale of shares and securities : It buys sells and keeps in safe custody securities and shares on behalf of its customers.

(v) Collection of dividends, interest on shares and debentures is made on behalf of its customers.

(iv) Acts as Trustee and Executor of property of its customers on advice of its customers.

It gives information about economic position of its customers to traders and provides similar information about other traders to its customers.

6. Performing general utility services:

The banks provide many general utility services, some of which are as under:

- (i) Traveller's cheques - The banks issue traveler's cheques and gift cheques.
- (ii) Locker facility - The customers can keep their ornaments and important documents in lockers for safe custody.
- (iii) Underwriting securities issued by government, public or private bodies.
- (iv) Purchase and sale of foreign exchange (currency).

1.5 Significance of Commercial Bank:

Commercial bank plays an important role in the economic development of a country that modern industrial economy cannot exist without them. In the words of Wick-sell, "Bank is the heart and central point of modern exchange economy."

The following points highlight the significance of commercial banks:

- (i) They promote savings and accelerate the rate of capital formation.
- (ii) They promote balanced regional development by opening branches in backward areas.
- (iii) Bank credit enables entrepreneurs to innovate and invest which accelerates the process of economic development.
- (iv) They help in promoting large-scale production and growth of priority sectors such as agriculture, small-scale industry, retail trade and export.
- (v) They create credit in the sense that they are able to give more loans and advances than the cash position of the depositor's permits.
- (vi) They help commerce and industry to expand their field of operation.
- (vii) Thus, they make optimum utilization of resources possible.

1.6 Banks help in accelerating the economic growth of a country in the following ways:

1. Accelerating the Rate of Capital Formation:

Commercial banks encourage the habit of thrift and mobilize the savings of people. These savings are effectively allocated among the ultimate users of funds, i.e., investors for productive investment. So, savings of people result in capital formation which forms the basis of economic development.

2. Provision of Finance and Credit:

Commercial banks are a very important source of finance and credit for trade and industry. The activities of commercial banks are not only confined to domestic trade and commerce, but extend to foreign trade also.

3. Developing Entrepreneurship:

Banks promote entrepreneurship by underwriting the shares of new and existing companies and granting assistance in promoting new ventures or financing promotional activities. Banks finance sick (loss-making) industries for making them viable units.

4. Promoting Balanced Regional Development:

Commercial banks provide credit facilities to rural people by opening branches in the backward areas. The funds collected in developed regions may be channelized for investments in the under developed regions of the country. In this way, they bring about more balanced regional development.

5. Help to Consumers:

Commercial banks advance credit for purchase of durable consumer items like Vehicles, T.V., refrigerator etc., which are out of reach for some consumers due to their limited paying capacity. In this way, banks help in creating demand for such consumer goods.

6. Innovations

Innovations are an essential prerequisite for economic development. These innovations are mostly financed by bank credit in the developed countries.

7. Development of Foreign Trade:

Letter of credit is issued by the importer's bank to the exporters to ensure the payment. The banks also arrange foreign exchange mechanism.

6. Others

- Promote Industrial development
- Fulfillment of socio-economic objectives
- Support to more production (Agriculture & Industry)

Three categories of Scheduled Commercial Banks

Public Sector Bank : These are banks where majority stake is held by the Government of India.

Private Sector Bank : These are banks majority of share capital of the bank is held by private individuals. These banks are registered as companies with limited liability.

Foreign Bank : These banks are registered and have their headquarters in a foreign country but operate their branches in our country.

Regional Rural Bank

Regional Rural Banks were established under the provisions of an Ordinance promulgated on the 26th September 1975 and the RRB Act, 1976 with an objective to ensure sufficient institutional credit for agriculture and other rural sectors. The area of operation of RRBs is limited to the area as notified by Government of India covering one or more districts in the State.

Cooperative Bank

A co-operative bank is a financial entity which belongs to its members, who are at the same time the owners and the customers of their bank. Co-operative banks are often created by persons belonging to the same local or professional community or sharing a common interest. Co-operative banks generally provide their members with a wide range of banking and financial services (loans, deposits, banking accounts, etc).

Non –scheduled Banks

Non- scheduled banks are those which are not included in the second schedule of the RBI Act, 1934.

1.7 AN OVERVIEW OF THE SELECTED BANKS

Public Sector banks

Public sector banks are banks where a majority stake (more than 50%) is held by the government. The shares of these banks are listed in stock exchanges. There are total of 27 public sector banks in India. In which, top 5 Public sector bank are selected for the present study.

Bank of Baroda

The bank is founded by the Maharaja of Baroda, Maharaja Sayajirao Gaekwad on 20 July 1908. The bank, along with 13 other major commercial banks of India, is nationalized on 19 July 1969, by the Government of India and has been designated as a profit-making public sector undertaking (PSU). Bank of Baroda is an Indian state-owned International banking and financial services company headquartered in Vadodara (earlier

known as Baroda) in Gujarat, India. It is the second largest bank in India, next to State Bank of India. Its headquarters is in Vadodara, it has a corporate office in the in Mumbai. Capital employed in Bank of Baroda during 2016 is Rs. 40,54,921. Net Interest Margin(NIM) in global operation 2.05% and in domestic 2.60%.The total asset value of the bank is Rs. 67,13,765.

Bank of India

Bank of India is founded on September 7, 1906 by a group of eminent businessmen from Mumbai. In July 1969 Bank of India is nationalized along with 13 other banks. Initially they start with a paid-up capital of Rs.50 lakh and 50 employees. Bank of India is the first Indian Bank to open a branch outside the country, at London, in 1946. Bank of India has 5100 branches as on 31 January 2017, including 56 offices outside India, which includes five subsidiaries, five representative offices, and one joint venture. Bank of India is a founder member of SWIFT (Society for Worldwide Inter Bank Financial Telecommunications), which facilitates provision of cost-effective financial processing and communication services. The bank has a total net worth value of Rs. 60,99,139 during the end of the financial year 2015 – 2016.

Canara Bank

Canara Bank is founded by Shri Ammembal Subba Rao Pai, a great visionary and philanthropist, in July 1906. The Bank has gone through the various phases of its growth over hundred years of its existence. Canara Bank is an Indian state-owned bank headquartered in Bangalore, Karnataka. The government nationalized the bank in 1969. As of September 2016, the bank had a network of 5849 branches and more than 10026 ATMs spread across India. Today, Canara Bank occupies a premier position in the communal of Indian banks. They has a total asset value of Rs. 55,29,608. “A good bank is not only the financial heart of the community, but also one with an obligation of helping in every possible manner to improve the economic conditions of the common people”. These insightful words of our founder continue to resonate even today in serving the society with a purpose.

Punjab National Bank

Punjab National Bank is an Indian multinational banking and financial services company. It is a state-owned corporation based in New Delhi, India, founded in 1894, the bank has over 6,968 branches and 9,935 ATMs across 764 cities. It serves over 80 million

customers. It has a banking subsidiary in the UK (PNB International Bank, with seven branches in the UK), as well as branches in different countries. In Bhutan it owns 51% of Druk PNB Bank, which has five branches. Punjab National Bank has the asset value of Rs.66,73,905.

Union Bank of India

Union Bank of India (Union Bank) is registered on 11 November 1919 as a limited company in Mumbai and is inaugurated by Mahatma Gandhi. Union Bank began its international expansion in 2007 with the opening of representative offices in Abu Dhabi, United Arab Emirates, and Shanghai, Peoples Republic of China. It is one of the largest government-owned banks of India (the government owns 63.44% of its share capital). Its online Telebanking facility are available to all its Core Banking Customers – individual as well as corporate. As of September 2016, UBI has 4214 branches. At present, the offshore banking operations of Union Bank of India are led by its branches in Hong Kong and newly opened branch in Dubai at Dubai International Financial Centre.

Private sector bank

The private sector banks are banks where greater parts of the state or equity are held by the private shareholders and not by the government. It encompasses all for profit businesses that are not owned or operated by the government. Top 5 private sector banks were selected based on the highest value of the Total assets.

Axis Bank

Axis Bank is the third largest of the private-sector banks in India offering a comprehensive suite of financial products. The bank has its head office in Mumbai and Registered office in Ahmedabad. It has 2,959 branches, 12,743 ATMs, and nine international offices. It had a market capitalization of 1.0583 trillion (US\$16 billion) (as on March 31, 2016). As of 30 Jun. 2016, 30.81% shares are owned by promoters & promoter group, Remaining 69.19% shares are owned by Mutual Funds Institutions, FIIs, & individual investors among others. Axis bank has a total asset value of Rs. 5,25,44,676 in 2015-2016. The company's global depository receipts (GDRs) are listed on the London Stock Exchange.

HDFC Bank

The HDFC Bank is amongst the first to receive an 'in principal' approval from the Reserve Bank of India to set up a bank in the private sector. The bank is incorporated in

August 1994 in the name of “HDFC Bank Limited”, with its registered office in Mumbai, India. HDFC Bank commenced its operations as a Scheduled Commercial Bank in January 1995. It operates in a highly automated environment in terms of international technology and communication systems. HDFC Bank cater to a wide range of banking services covering commercial and investment banking on the wholesale side and transactional/branch banking on the retail side. The bank has three key business segments they are Wholesale banking, Treasury and Retail banking. HDFC Bank is India’s second-largest private sector lender by assets. It is the largest bank in India by market capitalization as of February 2016.

ICICI Bank

ICICI is an Indian multinational banking and financial services company headquartered in Mumbai, Maharashtra, India, with its registered office in Vadodara. ICICI Bank launched internet banking operations in 1998. In 2014, it is the second largest bank in India, in terms of assets and third in terms of market capitalization. The bank has a network of 4,450 branches and 14,404 ATMs in India, and has a presence in 19 countries including India. The bank has subsidiaries in the United Kingdom and Canada and branches in 10 Countries. ICICI Bank has total asset value Rs. 72,06,951. The year on year growth in current and retain portfolio crossed Rs. 2,00,000 crore (US \$ 30.2 billion) and grew by 23% year on year.

Kotak Mahindra Bank

Kotak Mahindra Bank is an Indian private sector bank headquartered in Mumbai, Maharashtra, India. In February 2003, Reserve Bank of India (RBI) gave the licence to Kotak Mahindra Finance Ltd., to carry on banking business. It offers a wide range of banking products and financial services for corporate and retail customers through a variety of delivery channels and specialized subsidiaries. It has a network of 1,348 branches across 675 locations and 2,051 ATMs in the country. In 2014, Kotak bank acquired ING Vysya Bank in a deal valued at 15,000 crore (US\$2.2 billion). With the merger, total employment will jump to almost 40,000, and the count of branched reached 1261. Post the merger, ING Group, which controlled ING Vysya Bank, will own a 7% share in Kotak Mahindra Bank. In 2016, it is the third largest private bank in India by market capitalization.

YES Bank

YES Bank is India's fifth largest private sector bank, founded by Rana Kapoor in 2004. YES Bank is the only Green field Bank licence and awarded by the RBI in the last two decades. YES Bank is a “Full Service Commercial Bank”, and has steadily built a Corporate, retail & SME Banking franchise, financial markets, investment banking, corporate finance, branch banking, business and transaction banking across the country. As on 31st December 2015, the bank had 630 branches and 2000 ATMs. It had a total asset value of Rs. 16,52,634 crore and Gross NPA of 0.42% and fifth largest bank in private sector.

1.8 SCOPE OF THE STUDY

The study is undertaken to measure the financial soundness of select scheduled commercial banks. Altman's Z Score formula is used to access the monetary health of the commercial banks.

1.9 STATEMENT OF THE PROBLEM

After financial crisis of 2007-08, financial performance and stability have become a top most priority for the banking sector. The competition increases in the global level. Hence, it is important to evaluate the financial soundness to sustain in the banking sector. The present study is undertaken to analyze the financial soundness entitle “Financial Soundness of select Scheduled Commercial Banks”.

1.10 OBJECTIVES OF THE STUDY

The basic objective of the study includes:

1. To evaluate the financial soundness of the select scheduled commercial banks.
2. To predict the financial soundness of the select scheduled commercial banks from 2017 to 2020.

1.11 LIMITATIONS OF STUDY

The following are the limitations of the study

- The study is limited to ten banks only so, it may not represent whole of the universe.

- Secondary data has been sourced for the research study so, it limits the accuracy and authenticity of the conclusion.

1.12 HYPOTHESIS OF STUDY

Following are the hypothesis used in the study:

H₀: There is no significant difference in total assets of select scheduled commercial banks during the study period.

H₀: There is no significant difference in return on equity of select scheduled commercial banks during the study period.

1.13 CHAPTER SCHEME

“Financial Soundness of select scheduled commercial banks” has been prepared in five chapters:

1. **CHAPTER-I.** This chapter deals with the Introduction and design of the study, objectives, scope, limitation, hypothesis of the study.
2. **CHAPTER-II.** This deals with the Review of Literature, under which a brief description of studies carried out earlier were included.
3. **CHAPTER-III.** This deals with Research Methodology, which includes description regarding sources of data, collection of data and tools used for analysis of data.
4. **CHAPTER-IV.** This deals with Results and Discussions, under which data collected were analyzed and interpreted.
5. **CHAPTER-V.** This deals with Summary of findings and conclusions.

CHAPTER –II

REVIEW OF LITERATURE

2.1 Introduction

To understand the research problem in depth various studies were reviewed. This helps to have a comprehensive understanding of the proposed study.

2.2 Papers on Financial Soundness of select scheduled commercial banks in particular are reviewed :

Md. Abdul Kaium Masud, Md. Mahbubul Haq(2016), conducted a study on financial soundness measurement and trend analysis of commercial banks in Bangladesh. The study was to analyze the financial performance of seven select scheduled commercial banks of Bangladesh. The study covered a period starting from 2006 to 2014 and the necessary data was gathered from books, annual reports, journals. Trend analysis and descriptive statistics were used to analyze the financial performance of the select banks. It was concluded that private sector commercial banks playing a major role in the development of the economy. The social profitability of the banking industry can be measured by branch expansion and employment generation. All the select banks had positive result in these two factors.

Irina – Raluca Badea, Gheorghe Matei(2015), studies the Z-Score model for predicting periods of financial instability. This study focused on theoretical approach in conjunction study based on an alternative measure of financial stability, namely the Z-score model proposed by Altman. Three banks were select to analyze the financial health for the period of three years from 2011-12 to 2014-15. In this study they use both initial model and the revised model to examine the financial soundness. The result outline the evolution of the financial stability for decision making and helpful to improve the techniques for monitoring and managing risks.

Swaricha Johri and Manjeet Singh(2015), study with an objective to examine the financial performance of public and private banks in India. ICICI and SBI are the two banks select for the study and the required data was gathered from secondary source. The study covers the period of 5 years i.e. from year 2009-10 to year 2013-14. Camel analyzed and t-test are the tools used to evaluate the soundness of select banks. The study concluded that ICICI bank was more efficient in terms of capital adequacy and can resist risk more effectively than SBI. SBI's earning capabilities, return on asset, return on net worth,

dividend per share are far better than ICICI and ICICI bank has better profitability position.

Ihsan Ilahi, Raja Ahmed Jamil, Sibtain kazmi , Naveeda Ilahi, Muhammad Saeed Lodhi(2015) conducted a study on financial performance analysis of Pakistan banking sector using the Altman Z Score model of corporate bankruptcy. In this study six banks were taken as sample based on the asset value. The aim of this study was to explore, if commercial banks have financial difficulties. In order to attain the goal of the study expressive statistically analyzed and two Altman's Z score model were applied to evaluate the commercial banks financial statements. Data was gathered from respective banks for the period from 2009 to 2013. As a result, all the six banks are in monetary trouble having z score less than 2.6 but operate their activities normally. It shows that the revised Altman Z Score model was not applicable in the financial institutions.

Dr. Sneha S. Shukla(2015), has studied a paper to evaluate the performance & financial soundness of various public & private sector banks using CAMEL approach. The required data was collected from annual reports of the respective banks and various websites. It covers the period of 2009-10 to 2011-12. It concluded that, the select different banks have obtained different performances with respect to CAMEL ratios. Most of these banks, including HDFC, ICICI, IDBI, lie in a similar rank region. However, these banks' assets etc. vary a great deal and they cannot be judged solely based on the absolute values of the CAMEL ratios. It shows that the private sector banks are growing at a faster pace than public sector banks.

S.K.Khatik- Amit Kr Nag(2014) analyzed the soundness of five nationalized banks in India. The main aim of the study was to measure the overall performance and soundness of these banks using CAMEL MODEL. The required data was gathered from secondary sources. The study covers the period of six years, i.e, from 2007-08 to 2012-13. The tools used for the study was CAMEL model using five parameters and ANOVA –one way classification model. The finding of the study shows that Bank of Baroda has been ranked at the top position, the Union Bank of India and Dena Bank secured the 2nd position, the next was the State Bank of India which secured the 4th position and in the last position was the UCO Bank which secured the 5th position.

Roli Pradhan (2014) studied a paper on Z Score Estimation for Indian Banking Sector. This paper provides the Z score value for the public sector banks. In this paper an attempt was made to predict the Z score value up to 2020 using BPNN model. Oriental

Bank of Commerce, Punjab National Bank and State Bank of India are the three banks select for the study and the required data were collected from secondary source. The tools used for the study are Z score and its four components. It covered the study period from 2000-01 to 2007-08. The prediction of Z score value was for the period of 2008-09 to 2019-2020. The study concludes that the Z score of Oriental Bank of Commerce has the highest value among the above mentioned three banks. The state of banks has improved from 2011 onwards.

Parul Chotalia (2014) carried a study to measure the financial health and soundness of the sample private sector bank. The study was conducted by taking selected six major private sector banks for the period starting from 1st April 2007 to 31st March 2012. Tools used for the study was Altman Z Score and average and the required data was collected from secondary source. The study concluded that all the sampled banks fall in Grey Zone yet out of six selected banks four banks i.e. ICICI, Kotak Mahindra, Axis and HDFC have better financial position compared to DCB and YES Banks. All the select banks are required to improve their financial performance to avoid bankruptcy.

Priyanka Salgotra¹, Dr. Ruchika Wadhwa (2014) was aimed to analyze the financial performance of select 26 public sector banks in India. The data were collected for a period of five years from 2007-2012 from various secondary sources. The study used ratio analysis, descriptive analysis, compound annual growth rate and comparative ranks to analyze the data. It was concluded that all the select public sector banks achieve the prescribed norm of 9%. The corporation bank ranked first followed by union bank of India has maximum SD and maximum coefficient of variation and maximum compound annual growth rate indicates the result downfall in Capital to risk weighted assets ratio.

Angela Romana, Alina Camelia(2013), carried a study on analyzing the financial soundness and insolvency of the 15 commercial banks that operate in Romania. To analyze the aim of the study they have used one of the most popular methods for the analyzing of the financial soundness of banks, namely the CAMELS framework. The research has been focused on 15 banking institutions that operate in Romania and covers a period starting from 2003-04 to 2010-11. The data was gathered from annual reports and Bureau Van Dijk Bankscope database. The result of the study shows that RBS bank and Raiffeisen Bank are in top position. In order to highlight the strength and the weakness of the select banks and they underlining the need to strength the concerns of the decision making from banks to improve and increase their soundness.

Matias Costa Navajas and Aaron Thegeya1 (2013), undertook a study on financial soundness indicators and banking crises. This study tests the effectiveness of financial soundness indicators (FSIs) banking crises, using multivariate logit models across countries over the period of 2005 to 2012. Results shows that FSIs significantly correlated with the occurrence of banking crises. The CAR and ROE show a negative correlation with the occurrence of banking crises and suggest that some indicators are signs to the occurrence of banking crises. It also indicate that the lack of return on equity may be a leading indicator of banking crises.

C. Kandasamy, C. Indirani (2013) carried a study on financial performance of new generation private sectors commercial banks in India. The study was conducted by taking seven selected private sector banks on the basis of profitability. The necessary data were collected through annual reports of the respective banks. The study covers the period of ten years i.e. from the year 2003-04 to 2012-13. To examine the growth and profitability of the chosen bank, the following tools were used. The tools used for the study are mean, standard Deviation (SD), coefficient of Variation (CV), Compound Annual Growth Rate (CAGR), Average Annual Growth Rate (AAGR), ANOVA. The study reveals that the significance of liquidity and profitability was not to be neglected. The financial viability of the banking system was certainly essential; not only to instill public confidence but also to make banks capable of discharging their social responsibilities.

argu Alina Camelia, Roman Angela(2011) were studied a cross-country analyzes of the banks financial soundness. The aim of their research was empirically examine the financial soundness of the banks operating in Bulgaria, Czech Republic and Romania, Central and Eastern Europe (CEE-3). This study selects a sample of 40 commercial banks. 11 from Bulgaria, 14 from the Czech Republic, 15 from Romania. The study was analyzed based on the average value of these three countries. The secondary data was collected from the annual reports of the respective banks and Bureau Van Dijk Bankscope database. CAMEL framework and Z score analyzes was used to determine the insolvency of the banks. As a result all the banks had a positive impact on their performance during the study period 2004 – 2011.

Daniela zapodeanu, mihail-ioan cociuba (2010), to examine a financial soundness indicators proposed by IMF. It overview important indicators in financial stability and they analyze the main indicators of financial health. Two banks were selected for the study, they are BRD and Transylvania Bank for the period of 2008-09 to 2001-12. The study finds that

banks with foreign shareholders tend to be more riskier than domestic banks. An important role in banks stability was the presence of an institutional investor. As a result shows that the main indicator of the financial soundness are Assets, loans, return on equity, profit and market share.

Mabwe Kumbirai and Robert Webb (2010) carried a study investigates the overall performance of south africa's commercial bank during the period 2005 – 2009. The tools used for the study was descriptive analyzes and t-test analyzes. The results indicate that the overall bank performance in terms of profitability, liquidity, and credit quality has been improving, so bank increase their loan portfolio up to 2007. After that the banks performance deteriorated during 2008-2009 as the banks' operating environment declined due to the global financial crises and a slowing economy.

Ramona Birua, Jatin Trivedib, Mihail Antonescuc (2010), was to examine the volatility patterns of the S&P Bombay Stock Exchange (BSE) Bankex Index. The major objective of this research paper was to investigate the behavior of S&P Bombay Stock Exchange Bankex Index volatility patterns using GARCH model(1,1). It performs to capture the asymmetric volatility clustering and leptokurtosis. The findings reveals that the Bankex grown 17 times in 12 years and the volatility return found in listed stocks. The return ratios and the index growth i.e. 1000 to over 17000 represent the great investor interest in the Bankex stocks. The stock fluctuations are abnormal and highly volatile during the study period.

Jasmina Popovska(2007) has studied the modeling financial stability in the case of the banking sector in Macedonia. This paper made an attempt towards creating a more appropriate framework for evaluation of the financial stability. The necessary data was collected through annual reports of the respective banks and websites. CAMEL analyzes, Z score analysis and S score analysis was used to analyze the stability of the banks. In this study a construction index was framed to overview the stress period of the banking sector in Macedonia. As a result, the index could be used for predicting the reactions of the banking sector in the economy.

2.3 Conclusion

Various papers are reviewed to know about the "Financial Soundness of select Scheduled Commercial Banks". In conclusion many authors stated that Z Score analysis was a useful tool for tracking the risk of insolvency over a period of time

CHAPTER III

RESEARCH METHODOLOGY

Research commonly refers to a search for knowledge. Research methodology is a systematic way to solve the research problem. In order to achieve the objective of the study and to analyze the factors considered, an appropriate methodology is adopted. Research consists of various steps that are generally implemented by a researcher in studying the research problem along with the logic behind them. In order to achieve the objective of the study and to analyze the factors considered, an appropriate methodology is developed.

This chapter has been divided into various sessions as follows:

The study was conducted to know the financial soundness of select Scheduled Commercial Banks.

3.1 Sources of Data

3.2 Period of Study

3.3 Selection of the Sample

3.4 Tools used for the study

3.1 Sources of Data

Data was collected from secondary sources. The major sources of data were acquired from the RBI website and the data pertaining to the study were collected from the select banks website, articles and journals

3.2 Period of Study

The research has been carried out for the period of five consecutive years starting from the financial year 2011-2012 to 2015-2016.

3.3 Selection of the Sample

The study is undertaken to analyze the financial soundness of select scheduled commercial banks. 10 banks were selected for the study. These banks are selected because the total assets of these banks are high in the financial year 2015-2016.

3.4 Tools used for the study

The following tool were applied to picture the conclusion of the research

- Z-Score analysis
- Time series
- T-test analysis

Z – Score Components

Working Capital to Total Assets

Working capital to total asset shows a liquidity that expresses the current assets or working capital of a company as a percentage of its total assets. It measures the banks ability to cover its short term financial obligations (Total current liabilities) by comparing its current assets to its Total assets.

Formula

$$\text{Working Capital to Total Assets} = \text{Working Capital} / \text{Total Assets}$$

$$\text{Working Capital} = \text{Total Assets} - \text{Total Liabilities}$$

Return on Total Assets

The return on total assets measures a company's earnings before interest and taxes (EBIT) against its total assets. The return on assets ratio or ROA measures how efficiently a company can manage its assets to produce profits during a period. Since company assets sole purpose is to generate revenues and produce profits and this ratio helps both management and investors see how well the company can convert its investments in assets into profits. This allows the organization to see the relationship between its resources and its income, and it can provide a point of comparison to determine if an organization is using its assets more or less effectively than it had previously.

Formula

$$\text{Return on Total Assets} = \text{EBIT} / \text{Total Assets}$$

Retained Earnings

Retained earnings refer to the percentage of net earnings not paid out as dividends, but retained by the company to be reinvested in its core business, or to pay debt. It is recorded under shareholders equity on the balance sheet. Strong retained earnings typically

mean that the company remains in a growth stage and wants to use earnings to expand. Your company may issue dividend payments to shareholders when it earns profits.

Formula

$$\text{Retained Earnings to Total Assets} = \text{Retained Earnings} / \text{Total assets}$$

Market Value on Equity/Total Liabilities

It shows – if a firm were to become insolvent – how much the firm's asset value decline before liabilities exceed assets on the financial statements and the firm become insolvent. This component adds a market value dimension and it is purely based on fundamentals. It is important for the company's owners and investors, as in some sense it shows market's reaction to the firm's financial position.

Formula

$$\text{Equity Ratio} = \text{Market Value of Equity} / \text{Total Liabilities}$$

Z-Score analysis

The Z-Score was developed by Professor Edward Altman, New York University in 1968. It is an effective tool to analyze the financial health and credit worthiness of companies. The Z-score methodology was developed to provide a more effective financial assessment tool for credit risk analysts and lenders. It is employed by credit professionals to mitigate risk in debt portfolios and by lenders to extend loans. It is widely utilized because it uses multiple variables to measure the financial health and credit worthiness of a borrower.

Z-score function has been constantly revised in order to adjust new parameters, conditions of the business environment and, generally to the global social and economic dynamics. The revised model eliminates the X5 variable from the previous formulas.

$$\mathbf{Z = 6.56T1 + 3.26T2 + 6.72T3 + 1.05T4}$$

X1 = Net Working Capital/Total Assets,

X2 = Retained Earnings/Total assets,

X3 = Earnings before interest and taxes/Total assets,

X4 = Market value equity/Total liabilities.

The result of Altman Z-score Model is interpreted as follows:

Z-score above 2.6 – the firm is in the ‘safe zone’ and it is financially healthy;

Z-score less than 2.6 but above 1.1 – the firm lies in the ‘grey area’ and it carries a low risk;

Z-score less than 1.1 –the firm is in the ‘distress zone’ and carries a high risk of bankruptcy in a short time horizon (2 years).

Time Series analysis

Time series is the arrangement of statistical data according to the time of occurrence. It helps to find out variations in the values of data due to changes in time. It helps for understanding past behavior. The data related to past and present periods gives more idea about the future. In this study the method of least square is adopted to predict the Z Score value from 2017 to 2020.

$$Y_c = a + bX$$

$$\Sigma Y = Na + b\Sigma X$$

$$\Sigma XY = a\Sigma X + b\Sigma X^2$$

t-test analysis

The t-test is probably the most commonly used statistical data analysis procedure for hypothesis testing. It is used to determine whether the sample mean is statistically different from a known or hypothesized population mean. It is a parametric test. In a one sample t-test, the test variable is compared against a ‘test value’, which is known or hypothesized value of the mean in the population.

$$t = \frac{\bar{X} - sd}{\sqrt{S^2 / n}}$$

CHAPTER IV

RESULTS AND DISCUSSIONS

Analysis is considered to be an important step in the research work. After the collection of data, the next step is to analyze and interpret data with a view of arriving at an empirical solution to the problem. The present chapter focuses to study the financial soundness of the select scheduled commercial banks by adopting various tools like Z-Score analysis, Time series analysis and t-test analysis. Data analysis was done with the help of the following objectives:

- Evaluation of the financial soundness of select scheduled commercial banks
- Prediction of financial soundness of the select scheduled commercial banks from 2017 to 2020.

Evaluation of the financial soundness of select scheduled commercial banks

Altman Z Score was used to analyze the financial soundness of the select scheduled commercial banks. It was the output of a financial strength and used to determine the level of business bankruptcy. It was based on four components that can be calculated with the help of financial statement of the respective banks.

- o Working capital into total assets
- o Retained earnings into total assets
- o EBIT into total assets
- o Market value of equity into total assets

These are the four components and the results are discussed below.

Table 1 Working capital to Total assets of select scheduled commercial banks

Name of the Bank / Year	2016	2015	2014	2013	2012
Bank of Baroda	0.1905	0.1969	0.1890	0.1468	0.1341
Bank of India	0.1569	0.1113	0.1019	0.1150	0.0843
Canara Bank	0.0960	0.0832	0.0853	0.0787	0.0701
Punjab National Bank	0.1042	0.0866	0.0754	0.0503	0.0568
Union Bank of India	0.0654	0.0103	0.0588	0.0453	0.1458
Axis Bank	0.0516	0.0651	0.0613	0.0472	0.0357
HDFC Bank	0.0394	0.0469	0.0638	0.0387	0.0303
ICICI Bank	0.0718	0.0512	0.0551	0.0641	0.0599
Kotak Mahindra Bank	0.0468	0.0448	0.0548	0.0308	0.0252
Yes Bank	0.0399	0.0440	0.0440	0.0308	0.0370

Source : Compiled and calculated by using published RBI reports

Working capital to total assets shows liquidity position relative total capitalization. An increasing ratio screen a positive sign, it shows the company liquidity is improving over the periods of time. Working capital is a company's current assets less its current liabilities. It is to measures a company's efficiency and its short-term financial health.

Table 1 reveals the proportion of working capital to total assets. Bank of Baroda recorded 0.1905 which was the highest among all the select scheduled commercial banks, and Union Bank of India recorded 0.0103 which is least among all the select banks. A decreasing ratio indicates the company may have too many current liabilities, they have to reduce the amount of working capital available to improve the soundness of business. The public sector banks show the increasing trend and the Union Bank of India keeps fluctuating during the study period.

In private sector, ICICI Bank (0.0718) has the highest value among all the select banks. All the banks shows increasing trend except HDFC and Yes Bank, has fluctuations.

Table 2 Retained earnings to Total assets of select scheduled commercial banks

Name of the Bank / Year	2016	2015	2014	2013	2012
Bank of Baroda	-0.0803	0.0373	0.0548	0.0653	0.0964
Bank of India	0.1300	0.1704	0.1509	0.2489	0.2435
Canara Bank	-0.0508	0.0394	0.0392	0.0556	0.0747
Punjab National Bank	-0.0595	0.0403	0.0541	0.0792	0.0903
Union Bank of India	0.0300	0.0365	0.0405	0.6168	0.1309
Axis Bank	0.9289	0.4280	0.3994	0.3425	0.2994
HDFC Bank	0.3113	0.3872	0.3654	0.3451	0.3057
ICICI Bank	0.7714	0.3342	0.2868	0.2435	0.1959
Kotak Mahindra Bank	0.9493	0.5460	0.5087	0.2116	0.3860
Yes Bank	0.3835	0.3552	0.3364	0.2768	0.2649

Source : Compiled and calculated by using published RBI reports

Retained earnings to total assets, is an indicator of how profitable a company is virtual to its total assets. The higher the value, the greater the financial stability of the banks, lower the value reveals the lesser financial stability of the banks. It also depicts that the banks have been utilizing its own earnings as cheaper source of finance rather than debt finance. It outlines the capacity of the bank to accumulate profit based on its assets.

Table 2 shows that, there was decreasing trend in the public sector bank. Bank of Baroda (-0.0803), Canara Bank (-0.0508), Punjab National Bank (-0.0595) recorded negative value, which indicates that it is less capable to retain more earnings.

In private sector, Kotak Mahindra Bank (0.9493) which is highest among all the select banks and followed by Axis Bank (0.9289) showed an increasing trend in private sector banks during the study period.

**Table 3 Earnings Before Interest and Tax (EBIT) to Total assets
of select scheduled commercial banks**

Name of the Bank / Year	2016	2015	2014	2013	2012
Bank of Baroda	0.1387	0.1434	0.0014	0.1699	0.1980
Bank of India	0.0737	0.6470	0.5834	0.7119	0.8472
Canara Bank	0.1323	0.1346	0.1428	0.1474	0.1630
Punjab National Bank	0.1889	0.2042	0.2132	0.2343	0.2380
Union Bank of India	0.1454	0.1583	0.1529	0.1836	0.5293
Axis Bank	0.3149	0.2985	0.3084	0.2834	0.2721
HDFC Bank	0.3113	0.3058	0.3057	0.3017	0.2809
ICICI Bank	0.3408	0.3153	0.2887	0.2550	0.1800
Kotak Mahindra Bank	0.2251	0.3009	0.3131	0.2735	0.5285
Yes Bank	0.2670	0.2448	0.2523	0.2213	0.2147

Source : Compiled and calculated by using published RBI reports

Earnings Before Interest and Tax (EBIT) into Total Assets was an indicator of how effectively a bank is using its assets to generate earnings. The greater the banks earnings ratio indicates that, they are using their assets more effectively. This ratio measures the ability of the company in generating profits from their asset.

Table 3 reveals that there was a decreasing trend in public sector bank. In EBIT into total assets, Bank of India and Union Bank of India are 0.8472 and 0.5293 which are highest among all the select scheduled commercial banks. This indicates that this bank has the capacity to generate high earning in proportion to its assets. Bank of Baroda had only 0.0014, which is least among all the select banks. It shows that they have low earning in proportion to its assets.

In private sector, three of the select banks are in increasing trend, two banks are in decreasing trend. Kotak Mahindra Bank (05285) is highest among all the select banks and followed by HDFC Bank (0.3057).

Table 4 Market value of equity to Total liabilities of select scheduled commercial banks

Name of the Bank / Year	2016	2015	2014	2013	2012
Bank of Baroda	0.0068	0.0062	0.0065	0.0077	0.0092
Bank of India	0.0013	0.0107	0.0112	0.0131	0.0014
Canara Bank	0.0098	0.0086	0.0093	0.0107	0.0011
Punjab National Bank	0.0058	0.0061	0.0065	0.0073	0.0074
Union Bank of India	0.0169	0.0166	0.1529	0.0022	0.0113
Axis Bank	0.0090	0.0102	0.0122	0.0013	0.0014
HDFC Bank	0.0071	0.0084	0.0097	0.0011	0.0013
ICICI Bank	0.0016	0.0179	0.0194	0.0021	0.0023
Kotak Mahindra Bank	0.0047	0.0364	0.0439	0.0047	0.0056
Yes Bank	0.0025	0.0306	0.0330	0.0036	0.0479

Source : Compiled and calculated by using published RBI reports

It is calculated to know the long-term financial soundness of the select scheduled commercial banks and it expresses the financial stability of the banks on a long term, mainly on how much the firm's market value can decline in value before the liabilities exceed assets.

Table 4 shows the market value of equity into total liabilities of select scheduled commercial banks. Canara Bank (0.0098) and Union Bank of India (0.0169) shows an increasing trend in the case of public sector banks. During the study period Bank of India keeps fluctuating. Decreasing trend has been found in Bank of Baroda and Punjab National Bank.

In private sector banks, Axis Bank(0.0090) and HDFC (0.0084) showed an increasing trend, ICICI and Yes Bank are in decreasing trend. Kotak Mahindra Bank value fluctuated during the study period.

Table 5 Z Score Value of select scheduled commercial banks

Name of the Bank / Year	2016	2015	2014	2013	2012
Bank of Baroda	1.9210	2.3783	1.4293	2.3194	2.5257
Bank of India	1.9501	5.6351	5.0829	6.3514	7.0422
Canara Bank	1.3546	1.5800	1.6481	1.6899	1.8006
Punjab National Bank	1.7603	2.0734	2.1051	2.1642	2.2677
Union Bank of India	1.5067	1.2530	1.5486	3.5450	4.9534
Axis Bank	5.4839	3.830	3.7784	3.3329	3.0408
HDFC Bank	3.3665	3.6212	3.6660	3.4085	3.0854
ICICI Bank	5.2784	3.5470	3.2395	2.9308	2.2437
Kotak Mahindra Bank	4.9203	4.1006	4.1272	2.7353	4.9824
Yes Bank	3.3093	3.0958	3.0849	2.5963	2.5548

Source : Compiled and calculated by using published RBI reports

Table 5 exposes the financial health of all the select scheduled commercial banks. The value above 2.6 indicate that the banks are under safe zone financially healthy, if the values lies between 2.6 to 1.1 they falls under grey zone, carries a low risk and the value below 1.1 then the bank are under the distress zone, which carries high risk.

The public sector bank falls under Grey zone, which means it carries a low risk. The value of z score lies between 1.1 to 2.6. the Z score value for the private sector banks are above 2.6, which comes under safe zone. During 2012 and 2013, the ICICI and Yes Bank are under grey zone. The table shows that the public sector banks are in decreasing trend and the private sector banks are in increasing trend during the study period .

Table 6 Ranking of select scheduled commercial banks

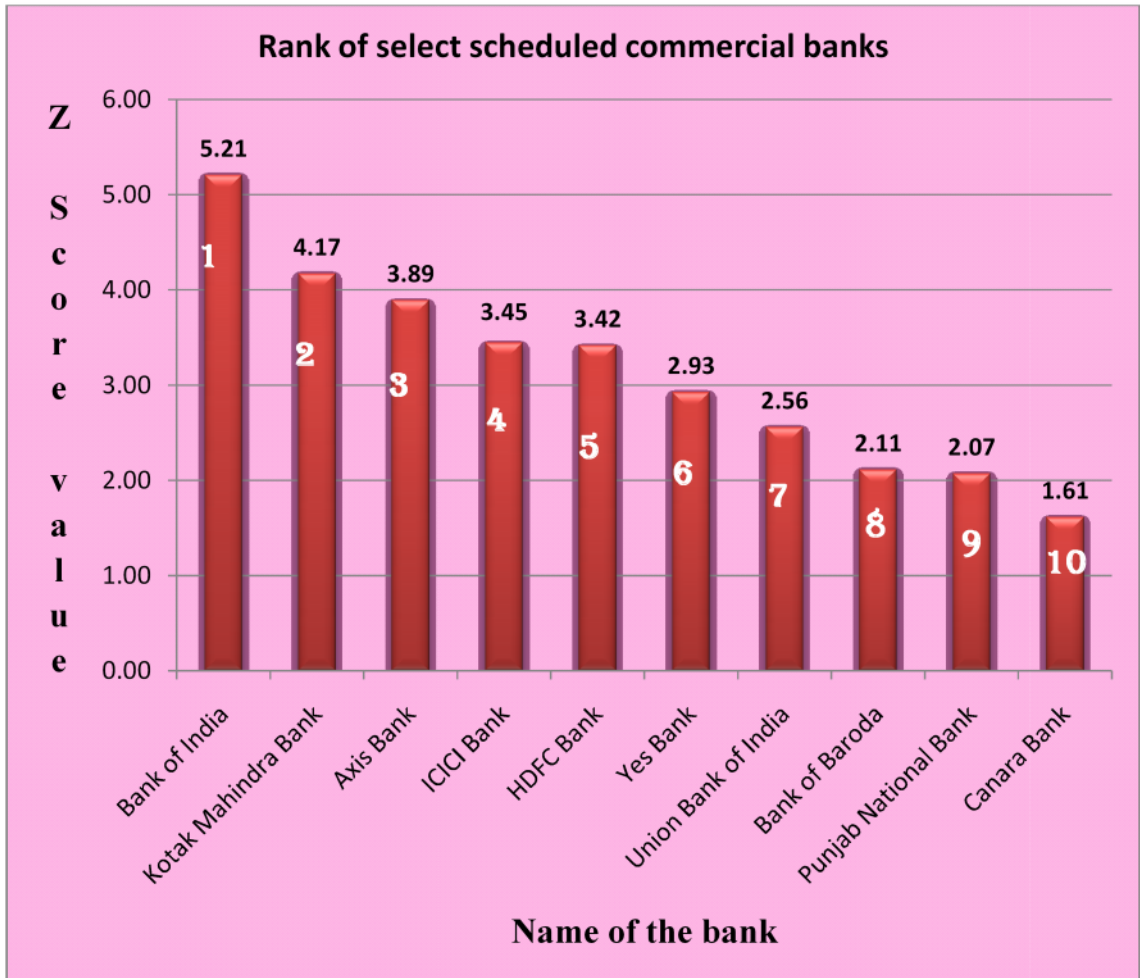
Name of the Bank	Average	Rank	Discriminant zone
Bank of Baroda	2.1147	8	Grey Zone
Bank of India	5.2123	1	Safe Zone
Canara Bank	1.6147	10	Grey Zone
Punjab National Bank	2.0742	9	Grey Zone
Union Bank of India	2.5613	7	Grey Zone
Axis Bank	3.8932	3	Safe Zone
HDFC Bank	3.4295	5	Safe Zone
ICICI Bank	3.4479	4	Safe Zone
Kotak Mahindra Bank	4.1732	2	Safe Zone
Yes Bank	2.9282	6	Safe Zone

Source : Compiled and calculated by using published RBI reports

Table 6 shows Rank obtained by the select banks by considering the Z Score average value during the study period and was found that Bank of India held the first position in financial soundness with an average Z-Score value of (5.2123), followed by Kotak Mahindra Bank (4.1732) and the third position by Axis Bank (3.4295). Next to that is ICICI Bank(3.4479), HDFC Bank (3.4295), Yes Bank (2.9282), Union Bank of India (2.5613), Bank of Baroda and Punjab National Bank. Canara Bank (1.6147) secures the last position among the select banks.

In public sector banks, Bank of India and Kotak Mahindra Bank in case of private sector banks were in top position. The present study shows that 6 of the banks are in Safe zone, 4 of the banks are in Grey zone and none of the banks are in Distress zone.

Exhibit 1 Rank of select scheduled commercial banks



Prediction of the Z-Score value of the select scheduled commercial banks from 2017 to 2020.

Time series (least square method) were used to predict the financial soundness of select scheduled commercial banks between 2017 – 2020.

Table 7 Prediction of Z-score for select scheduled commercial banks

Name of the Bank / Year	2017	2018	2019	2020
Bank of Baroda	2.459	2.574	2.688	2.803
Bank of India	8.482	9.572	10.662	11.752
Canara Bank	1.313	1.212	1.112	1.012
Punjab National Bank	1.742	1.642	1.521	1.411
Union Bank of India	0.195	1.118	2.031	2.949
Axis Bank	5.506	6.044	6.582	7.120
HDFC Bank	3.645	3.718	3.790	3.863
ICICI Bank	5.453	6.195	6.791	7.459
Kotak Mahindra Bank	4.545	4.6692	4.793	4.917
Yes Bank	3.530	3.731	3.932	4.133

Source : Compiled and calculated by using published RBI reports

The prediction were drawn using time series analysis (least square method) from 2017 to 2020. The Z score reveals that it is highly safe to deposit in Bank of India, ICICI and Axis Bank, in which the value is highest among all the select banks. It shows that both the public sector banks and the private sector banks are in the increasing trend.

Table 7 shows that Bank of India (11.752) which is highest and Canara Bank (1.012) which is least in case of public sector banks. In private sector ICICI Bank(7.459) was in top position and HDFC (3.863) was in the least position among select scheduled commercial banks.

Exhibit 2 Prediction of Z Score value of select public sector banks

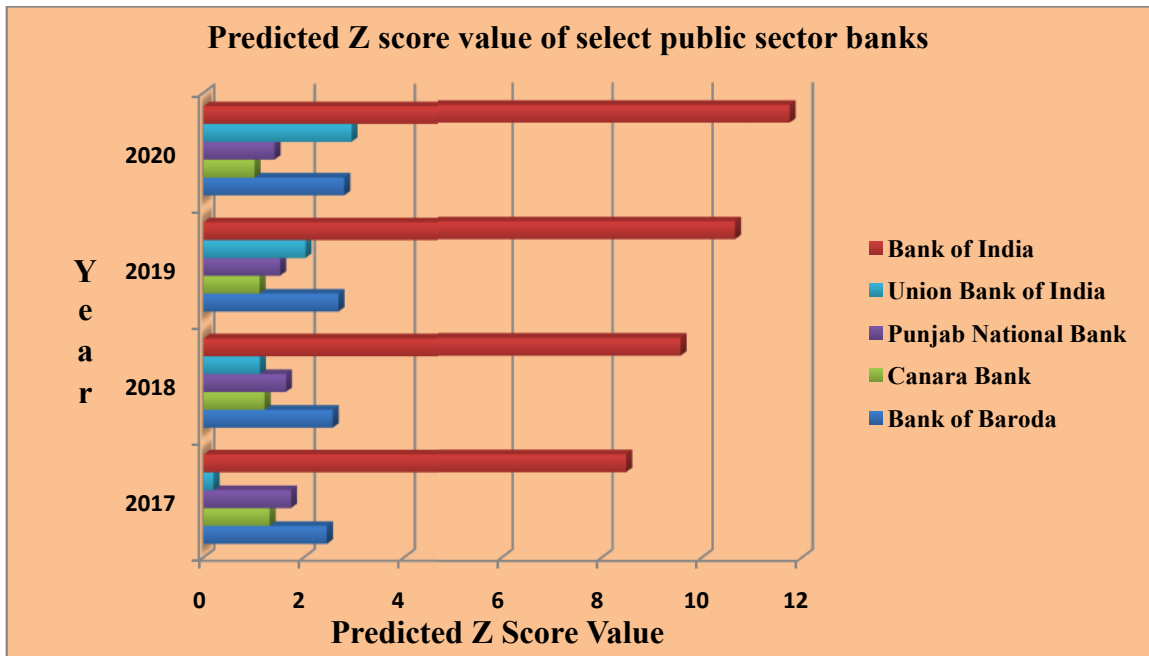
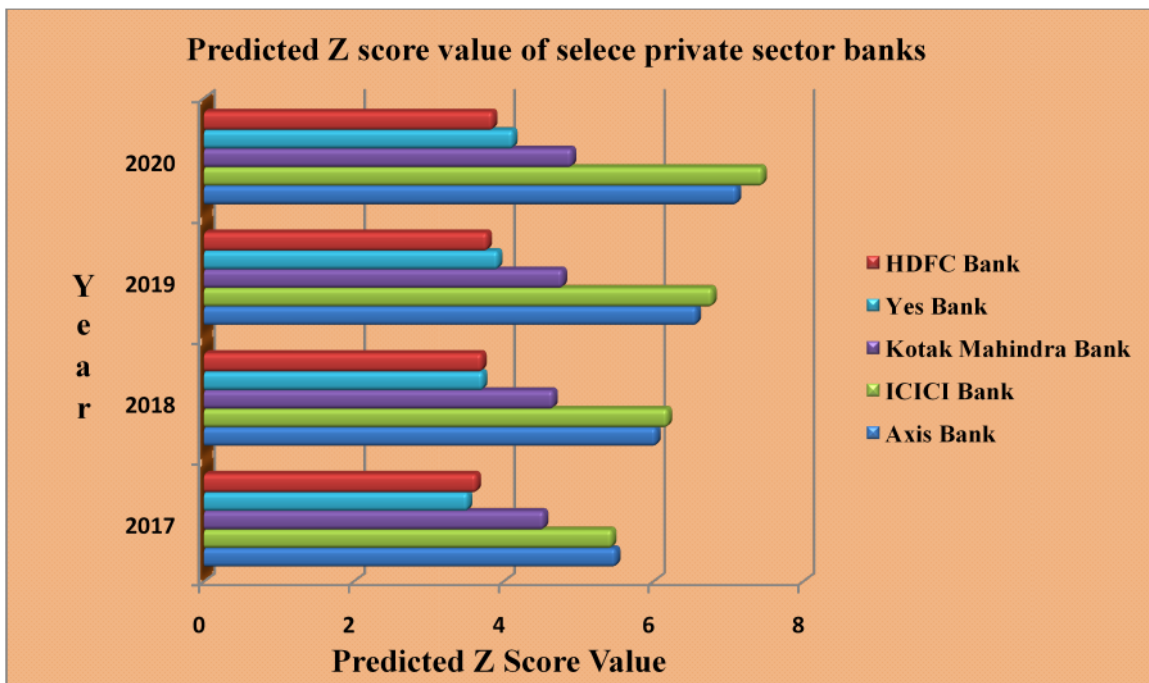


Exhibit 3 Prediction of Z Score value of select private sector banks



t-test analysis

Hypothesis

H₀: There is no significant difference in Total assets among selected banks during the study period

Table 8 Total assets of select banks during the study period 2011-12 to 2015-16.

Name of the Bank / Year	t-test value	Significance (P – Value)	Result
Bank of Baroda	12.459	.000	Reject
Bank of India	11.350	.000	Reject
Canara Bank	13.254	.000	Reject
Punjab National Bank	14.223	.000	Reject
Union Bank of India	6.048	.004	Reject
Axis Bank	9.352	.000	Reject
HDFC Bank	7.630	.000	Reject
ICICI Bank	14.710	.000	Reject
Kotak Mahindra Bank	4.812	.009	Reject
Yes Bank	7.405	.002	Reject

Source : Computed data

Table 9 reveals the results of the hypothesis, if there was difference in total assets of the select banks during the study period t-test was applied to test the hypothesis and was found that total assets of the select public sector banks and private sector banks are varied during the study period. The result shows that, there is significant differences in total assets of the select banks. The value of p is found to be $p=0.000, 0.001$, which is less than $p<0.05$. The null hypothesis does not support statistically. Hence, null hypothesis was rejected and alternative hypothesis was accepted.

H₀: There is no significant difference in Return on equity of the selected banks during the study period

**Table 9 Return on equity of select banks during the study period
2011-12 to 2015-16.**

Name of the Bank / Year	t-test value	Significance (P – Value)	Result
Bank of Baroda	50.293	.000	Reject
Bank of India	15.458	.000	Reject
Canara Bank	25.579	.000	Reject
Punjab National Bank	40.665	.000	Reject
Union Bank of India	8.269	.001	Reject
Axis Bank	38.740	.000	Reject
HDFC Bank	67.551	.000	Reject
ICICI Bank	582.699	.000	Reject
Kotak Mahindra Bank	4.515	.011	Reject
Yes Bank	25.185	.000	Reject

Source : computed data

Table 10 reveals the results of the hypothesis, if there was difference in Return on equity of the select banks during the study period t-test was applied to test. It was found that return on equity of the select public sector banks and private sector banks varied during the study period. The result showed that, there is a significant difference in return on equity of the select banks. The value of p was found to be p=0.000, 0.001, which is less than p<.05. The null hypothesis does not supported statistically. Hence, null hypothesis was rejected and alternative hypothesis was accepted.

Summary of the Study

The study exposes the financial health of all the select scheduled commercial banks. The tools used for the study was Z-Score analysis, Time series analysis and t-test analysis. It was a useful tools to analyze the financial soundness of the banks and to predict the future financial performance.

The outcome of the research study shows that all the select banks fall under safe zone and grey zone. Among all the select banks, six banks i.e, Bank of India, Axis Bank, HDFC Bank, ICICI Bank, Kotak Mahindra Bank, Yes Bank are in better position when compare to Bank of Baroda, Canara Bank, Punjab National Bank and Union Bank of India. ICICI Bank, Axis Bank and Yes Bank shows a good improvement during the study period. Analysis was made by using Z-Score, time serious analysis was used to predict the financial soundness of the bank for the period (2017-2020).

CHAPTER – V

SUMMARY OF FINDINGS AND CONCLUSIONS

5.1 Findings of study

Findings mean principal outcomes of a research project. This usually refers to the totality of outcomes rather than the conclusions or recommendations drawn from them. The research study was carried out using the secondary data collected. This chapter provides the crisp findings based on the analysis of the data collected.

The findings of the analyzed data were presented in the following headings.

- Evaluation of the financial soundness of select scheduled commercial banks
- Prediction of financial soundness of the select scheduled commercial banks from 2017 to 2020.

Evaluation of the financial soundness of select scheduled commercial banks

- **Working capital to Total assets of select scheduled commercial banks**

Bank of Baroda recorded 0.1905 which was the highest among all the select scheduled commercial banks, and Union Bank of India recorded 0.0103 which is least among all the select banks. All the banks shows increasing trend except HDFC and Yes Bank, it keeps fluctuating during the study period.

- **Retained earnings to Total assets of select scheduled commercial banks**

In public sector bank there was a decreasing trend in the public sector bank. Bank of Baroda (-0.0803), Canara Bank (-0.0508), Punjab National Bank (-0.0595) recorded negative value, which indicates that it is less capable to retain more earnings. In private sector, Kotak Mahindra Bank (0.9493) which is highest among all the select banks, followed by Axis Bank (0.9289), showed an increasing trend in private sector banks during the study period.

- **Earning Before Interest and Tax (EBIT) to Total assets of select scheduled commercial banks**

There was a decreasing trend in public sector bank. In EBIT into total assets, Bank of India and Union Bank of India are 0.8472 and 0.5293 which are highest among all the

select scheduled commercial banks. It indicates that the bank has the capacity to generate high earning in proportion to its assets.

In private sector, three of the select banks are in increasing trend, two banks are in decreasing trend. Kotak Mahindra Bank (0.5285) is highest among all the select banks, followed by HDFC Bank (0.3057).

- **Market value of equity to Total liabilities of select scheduled commercial banks**

Canara Bank (0.0098) and Union Bank of India (0.0169) shows an increasing trend in the case of public sector banks Bank of India keeps fluctuating. Decreasing trend has been found in Bank of Baroda and Punjab National Bank.

In private sector banks, Axis Bank(0.0090) and HDFC (0.0084) showed an increasing trend, ICICI and Yes Bank are in decreasing trend. Kotak Mahindra Bank value fluctuated during the study period.

- **Z Score Value of select scheduled commercial banks**

In 2016, The public sector bank fall under grey zone, which mean carries a low risk. The value of z score lies between 1.1 to 2.6. the Z score value for the private sector banks are above 2.6, which comes under safe zone. During 2012 and 2013, the ICICI and Yes Bank are under grey zone.

All private sector banks Z score value are above 2.6, it falls under safe zone, which is financially very healthy. It showed that the private sector banks are in increasing trend during the study period.

- **Ranking of select scheduled commercial banks**

Bank of India held the first position in financial soundness with an average Z-Score value of (5.2123), followed by Kotak Mahindra Bank (4.1732) and the third position by Axis Bank (3.4295). Next to that is ICICI Bank(3.4479), HDFC Bank (3.4295), Yes Bank (2.9282), Union Bank of India (2.5613), Bank of Baroda and Punjab National Bank. Canara Bank (1.6147) secures the last position among the select banks.

In public sector banks, Bank of India and Kotak Mahindra Bank in case of private sector banks was in top position. The present study shows that 6 of the banks are in Safe zone, 4 of the banks are in Grey zone and none of the banks are in Distress zone.

t-test analysis

- **Difference in Total assets among selected banks.**

The t-test value of total assets of the select public sector banks and private sector banks are varied during the study period. The result shows that, there is a significant difference in total assets of the select banks. It was found that all the public and private sector banks p value is less than .05. Hence the null hypothesis was rejected, alternative hypothesis was accepted.

- **Difference in Return on equity among selected banks.**

The t-test values of total assets of select scheduled commercial banks are varied during the study period. The result shows that, there is a significant difference in total assets of the select banks. It was found that all the public and private sector banks p value is less than .05. Hence the null hypothesis was rejected, alternative hypothesis was accepted.

Prediction of the Z-Score value of the select scheduled commercial banks from 2017 to 2020.

- **Prediction of Z-score for select scheduled commercial banks**

The predicted Z score reveals that it is highly safe to deposit in Bank of India, ICICI and Axis Bank, in which the value is highest among all the select banks. that Bank of India (11.752) which is highest and Canara Bank (1.012) which is least in case of public sector banks. In private sector ICICI Bank(7.459) was in top position and HDFC (3.863) was in the least position among select scheduled commercial banks.

It shows that both the public sector banks and the private sector banks are in the increasing trend.

5.2 SUGGESTIONS

The study was made to know the financial soundness of select scheduled commercial banks. Based on the findings, the following suggestion are offered.

- Liquidity is a critical criteria for the banks. Hence, the banks much have adequate working capital without much of deviations.
- The retained earnings by the banks must be maintained at a significant level, to use it for productive purposes.

- Banks must take measures to improve its earning through effective business operations.

5.3 CONCLUSION

Banking sector plays a vital role in strengthening the economic conditions. Keeping in view the importance of commercial banks, we have selected the banking industry as our research study. The study was conducted to measure the financial soundness of selected scheduled commercial banks for the period 2011-12 to 2015-16. In this paper, an attempt was made to analyze the financial soundness of selected banks using Z score and t-test analysis. The study reveals that six of the select banks are in safe zone and four of the select banks are in grey zone and none of the banks are in distress zone. Hence, All the private sector banks are in safe zone, it indicates that the financial soundness of these banks shows a healthy performance during the study period. Canara Bank and Punjab National Bank of the select banks are required to improve their financial performance to avoid bankruptcy. Prediction was made to know the future performance of the banks for the period 2017 to 2020.

As a result in public sector bank, Bank of India was in top position followed by Union Bank of India and least position was Canara bank. In private sector banks Kotak Mahindra Bank and Axis bank was in top position. The study was concluded that the Bank of India followed by Kotak Mahindra Bank was highly safe to lend, in which the value is highest among all the select banks.

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