Non-Fund Based Income and Financial Performance of Scheduled Commercial Banks in India

A Thesis Submitted

To

Sikkim University

In Partial Fulfilment of the Requirement for the

Degree of Doctor of Philosophy

By

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February 2022

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DECLARATION

I, **Ruchita Sharma,** hereby declare that the research work embodied in the thesis titled **"Non-Fund Based Income and Financial Performance of Scheduled Commercial Banks in India"** submitted to Sikkim University for the award degree of **Doctor of Philosophy**, is my original work and it has not been submitted earlier to this or any other University for any degree.

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ACKNOWLEDGEMENTS

Countless people have supported and guided me through my research over the period, it gives me immense pleasure to express my sincere thanks and gratitude to everyone who helped me in many ways during the tenure of my research.

I am indebted to my research supervisor Professor S.S Mahapatra, Head of Department of Commerce, Sikkim University, for his continued guidance and an endless support. His unassuming approach to research and data is a source of inspiration. This approach is reflected by his simple but clear vision and guidance, which is something I hope to carry forward throughout my career.

I acknowledge my gratitude to my supervisor Professor Abhijit Dutta, Department of Commerce for the inspiration, guidance, support and encouragement that he has been to me for the successful completion of my research work. I truly appreciate his initial ideas which inspired me to explore such an interesting area for my Ph.D work. His updated and contemporary information and advice were of immense help to enrich my research work.

I acknowledge the generous financial assistance provided by Indian Council for Social Science Research (ICSSR) by funding my research. My thanks are also due to faculty members of Department of Commerce, Sikkim University, especially Dr. A.N Sankar, Dr. Ravi Shekhar, Dr. M. Pandian for their valuable suggestions and constant support.

I gratefully recognize and acknowledge the help of several research Scholars at Sikkim University especially Dr. Dinesh Gupta, Dr. Promesh Chettri, Dr. Sonam Topgay Bhutia and Prasansa Dong for inspiring me to complete my work and for their thoughtful suggestions. Special thanks to Dr. Sopan Jena for guiding me with software tools to make my research compact and data centric.

And above all, my heartfelt thanks to my family members especially my mother for her immense love, support and constant encouragement. With her constant support my whole Ph.D journey has been easier.

(Ruchita Sharma)

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LEGEND OF ABBREVIATIONS

ATM	:	Automated Teller Machine
CAR	:	Capital Adequacy Ratio
CB	:	Commercial Banks
GOI	:	Government of India
NBFI	:	Non-Fund Based Income
NFBI	:	Non-Fund Based Income
NIM	:	Net Interest Margin
PBT	:	Profit before Tax
PSB	:	Public Sector Bank
RAROA	:	Risk-adjusted Return on Asset
RAROE	:	Risk-adjusted Return on Equity
RBI	:	Reserve Bank of India
ROA	:	Return on Asset
ROE	:	Return on Equity
SBI	:	State Bank of India
SCBs	:	Scheduled Commercial Banks
SD	:	Standard Deviation

CHAPTER 1

INTRODUCTION

1.1 . OVERVIEW

Banking sector plays a dominant role in nourishing the financial health of an economy. The success of an economy highly depends on how effectively the financial institutions are channelizing the savings. Banks mainly allows its customers to deposit money and borrow loans (Al-Tarawneh et al., 2017). It basically helps in affective allocation of surplus fund to the ones who need money.

Before 1990 the condition of financial sector was imprinted with controlled interest rate, large number of regulations on flow of fund, limited disclosure of information and ambiguous accounting principles (Mohan, 2005). Since the reforms of 1991 the banking structure and the way it does its business has drastically improved. The financial reforms have totally changed the banking scenario in India. The banking business went from totally guarded to deregulated environment. That's when more emphasis was given to Private and Foreign banks in India. The changing business environment and bank's ownership has led the banks in India to strive for its growth and profitability at its best.

One of the crucial purposes of banking reforms in India was to improve efficiency and transparency through competition (Reddy, 2005). The main outcome of financial reforms introduced in Indian banking sector was technological development, economic integration, and increase in competition, deregulation, involvement of foreign and private sector banks. The exposure of Indian banking sector to competition has led the banks to strive for its growth and development. In order to survive the changing banking environment to withstand the volatility of changing

interest rates the banks has started to diversify its income source from traditional activities to non-traditional activities to withstand the volatility of changing interest rates. Traditional income/Fund Based Income/interest income can be defined as the income source derived from the core activities or which are ancillary to the business of accepting deposit and lending. Whereas non-traditional income/Non-Fund Based Income/Non-interest Income can be defined as the income derived from commissions, exchanges, brokerages, rental income, income on sale of investment, income on sale of premises, etc. (Das,2013)

The share of Non-Fund Based Income on total income of Scheduled Commercial Banks in India accounts for 1.15 during the period 2014-15. Although the proportion of NFBI of Scheduled Commercial Banks in India is quite lower than compared to most of the developed countries like U.S. but the fact cannot be denied that the proportion of its contribution in net operating income is increasing in the studied period.

There are number of studies which have been conducted in and outside of India where the researchers have tried to evaluate the financial performance before and after banking reforms and financial performance in commercial banks with the help of CAMEL model, different ratio analysis. In the process of reviewing different literature, it was also found that there exists literature where studies related to Non-Fund Based Income of Commercial Banks were conducted in many developed and developing countries where they have tried to analyze the impact of NFBI on financial performance of the banks and there are studies which has tried to analyse the volatility of income diversification. Studies like (Stiroh, 2004; DeYoung & Rice, 2004; Stiroh & Rumble, 2006) specified that income source diversification worsens the risk-return trade-off for U.S. Commercial Banks. Whereas Studies like (Chiarozza

et al., 2008; Baele et al., 2007; Smith et al.,2003) indicates that income diversification increases risk-return trade-off for European Banks. The studies conducted in India indicate a contradictory result on financial performance across different Bank Ownership. In this study the researcher has tried to analyse the proportion of Non-Fund Based Income, the impact of Non-Fund Based Income on financial Performance and enquire the existence risk associated with NFBI over the period of Ten years between 2006 to 2015 in Public and Private Sector Banks in India.

1.2. RATIONALE OF THE STUDY

The changing needs of the customer and rigorous competition has led the banks to diversify its income from traditional to non-traditional source of income. One very reason for diversifying into NFBI of bank is to mitigate the risk of unstable interest income. In order to study the determinants of NFBI and the influence of NFBI on the financial performance of the public and private sector banks in India various bank specific factors like traditional activities of bank, bank size, liquidity position in the form of CAR, lending strategy, loan quality captured by NPA along with technical development of the bank in the form of establishment and usage of ATM were considered in the study. For the purpose of capturing the traditional aspect of the banking business various ratios like loan to asset ratio (RLTA), ratio of demand deposit and savings bank deposit (SBDTD), ratio of interest income to total asset (RINTA) and ratio of priority sector loan (RPRTA) were used in the study.

The influence of NFBI on the financial performance of the banks were captured taking into consideration the widely used ratio Return on Asset (ROA). Further the study also analysed the variability of bank earnings with the help of Risk-adjusted on Return on Asset (named in the study as RAROA) and Risk-adjusted on Return on

Equity (named in the study as RAROE). The main aim of including RAROA and RAROE is to determine the volatility of diversifying into NFBI over the period of the study.

The present study has excluded foreign banks from the study as the main variables considered in studying the determinants of NFBI and its relationship on the financial performance are based on the traditional aspect of the business and foreign bank does not contribute much in the traditional activities of the bank. The other reason for excluding foreign banks from the study was due to the fact that important variables under study were mostly insignificant and giving erroneous result. Therefore, the study is confined to the public and private sector banks in India.

1.3. OBJECTIVES OF THE STUDY

Study will have the following objectives:

1. To analyse the proportion of Non-Fund Based Income of Scheduled Commercial Banks in India and determine the trend of share of Non-Fund based Income in Scheduled Commercial Banks over the specified period of the study.
2. To make a comparative study of the proportion of non-fund based income of Public sector banks and Private sector banks and explore reasons for significant differences in proportion of non-fund based income.
3. To investigate whether traditional activities has an affect on the level of non-fund based income of the bank.

4. To investigate the influence of NFBI on Return on Asset (ROA), Risk adjusted Return on Asset (RAROA) and Risk adjusted Return on Equity (RAROE).

1.4. HYPOTHESES OF THE STUDY

To address the above issues the study uses the following hypotheses:

H_{01} = Non-fund based income (NFBI) of SCBs is evenly spread over the decade under the study.

H_{02} = There is no significance difference in the proportion of NFBI across Public and Private sector banks in India

H_{03} =NBFI is not significantly affected by the Banking parameters such as size, traditional activities, CAR, operating expenses, bank efficiency and technological development.

$H_{04=}$ There is no effect of NFBI on ROA, RAROA and RAROE.

Similarly, the alternative hypothesis of the study is stated below:

H_{a1} = Non-fund based income (NFBI) of SCBs is unevenly spread over the decade under the study.

H_{a2} = There is a significance difference in the proportion of NFBI across Public and Private sector banks in India

H_{a3} = NBFI is significantly affected by the Banking parameters such as size, traditional activities, CAR, operating expenses, bank efficiency and technological development.

H_{a4} = There is an effect of NBFI on ROA, RAROA and RAROE.

1.5. Chapter Plan

The study aims at finding out the determinants of NFBI and investigate the influence of NFBI on the financial performance of the public and private sector banks in the study. The plan of the study is discussed as under:

Chapter 2: Review of Literature

This chapter consists of various literature reviewed on the area of the study. The literatures are segregated into three different subsections. The first section discusses the literature based on banking reforms in India, second part discusses the literature based on financial performance of banks in and outside India, and lastly the chapter delves into the discussion of literature related to NFBI and financial performance outside India followed by literature related to NFBI and financial performance in India.

Chapter 3: Research Design

This chapter includes the blueprint of the study. It defines the scope of the study, objective and hypothesis of the study, sample size, sources of data, period of the study, methods of the study and empirical model of the study.

Chapter 4: Theoretical background of the study.

This chapter consists of the theoretical background of the study which comprises of evolution of banking sector in India, reforms of Indian Banking sector, ownership structure of the banks in India, function of commercial banks, technological change in the sector and definition of the variables used in the study. This section of the study has tried to develop a conceptual framework of the study.

Chapter 5: Determinants of Non-Fund Based Income

This chapter basically starts with the trend analysis of the NFBI of public and private sector banks in India and further investigates the determinants of NFBI of the banks. The various bank-specific factors are taken into consideration to study the determinants of NFBI with the help of a panel data model. The chapter concludes with an important findings on the determinants of NFBI and how it is different over the years and across the bank ownership.

Chapter 6: Non –Fund based Income and Financial Performance - A Panel Regression Analysis

This chapter consists of a panel data regression analysis of NFBI and financial performance of public and private sector banks in India. The analysis is conducted on the basis of the FEM and REM in the study, which is chosen with the help of the Hausman specification test. The study tries to find the influence of NFBI on ROA, RAROA and RAROE.

Chapter 7: Conclusion and Recommendation

This chapter includes the summary of the entire chapter, summary of the findings and possible recommendations on the basis of the analysis and significant results. Chapter 7 of the study also includes the hypothesis result, limitation of the study and scope for further research.

1.6 CONCLUSION

In this chapter, the plan of the study is put forward. It includes the overview of the NFBI in public and private sector banks, variables of the study, objectives and hypothesis of the study and the chapter schemes of the study. In the next chapters different literature related to the study are discussed and other related aspect of the study are discussed briefly in the subsequent chapters.

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CHAPTER 2

REVIEW OF LITERATURE

2.1. INTRODUCTION

Banks play a very important role in improving the economic activities of the country. It serves primarily to bridge the gap between surplus and the deficit units in an economy. The changing business environment has led the banks to shift their focus from interest income to fee-based activities in order to improve their financial performance.

Various literatures have been incorporated in the study to gain an in-depth knowledge of the area studied and to find out the relationship between non-Fund based income and financial performance of banks in India. The study has reviewed several literatures based on the research area in and outside India. The main motive of reviewing literature is to make an attempt to bridge the gap between the previous literatures of different author and to identify the potential research gap in the area of the study. It also helped in identifying the method of determining the financial performance of the banks studied. The important literature has been classified into four main categories viz.

2.2. Literature related to banking reforms in India.

2.3. Literature related to financial performance of Banks.

2.4. Literature related to non-fund-based Income and Financial Performance outside India.

2.5. Literature related to non-fund-based Income and Financial Performance in India.

2.2. LITERATURE RELATED TO BANKING REFORMS IN INDIA.

Berg et al. (1992) evaluated productivity growth of Norwegian banks during the period 1980-1989 using Data Envelopment Analysis (DEA) and Malmquist productivity index. The study tried to analyse average productivity growth along with frontier growth and spread of growth rate across the industry. They found that the productivity growths were mainly witnessed by inefficient units of the banking industry. A considerable improvement was noticed in the relative efficiency of most of the banks which indicates that deregulation has initiated a competitive banking industry in Norway.

Zaim (1995) investigated the effect of post liberalization on the economic improvement and efficiency in Turkish commercial banks. The study applied nonparametric frontier methodology to find the result. The paper found that the reforms in Turkey helped commercial banks to increase their productivity and at the same time helped the banks to enhance technical and allocative efficiency.

Elyasiani & Mehdian (1995) studied efficiency of small and large US commercial banks before and after financial reforms using a non-parametric approach. The paper found that during pre-reform period the performance of small banks were better than large banks in US. Further it was witnessed that the performance of both large and small sized banks was equally efficient.

Bhattacharyya et al. (1997a) analysed total factor productivity growth and deregulation in Indian Public Sector Banks using panel data regression for the period of 23 years. The study found that deregulation improved the productivity growth of Public Sector Banks in India.

Bhattacharyya et al. (1997b) the study tried to examine the performance of 70 commercial Banks in India during the beginning stage of liberalization using data envelopment analysis and stochastic Frontier analysis. They found an improvement in the performance of Public-owned banks followed by foreign-owned and private-owned banks.

Leightner & Lovell (1998) studied the impact of financial liberalization on the performance of the banks in Thailand during the period 1989 to 1994. The study found that the banks experienced rapid growth in production as well as an improvement in total factor productivity. The study also emphasized on important findings about the different outcome when bank of Thai objectives is used, it witnessed a decline in total factor productivity for Thai Banks but an improvement in the same with respect to foreign banks.

Lozano- Vivas (1998) studied the effect of deregulation on cost efficiency and technical change in the Spanish banks from the period 1985 to 1991. The paper used the DEA approach to obtain the result of the study. The result suggests an improvement in the cost efficiency of the banks in Spain after the deregulation, but no positive result was obtained on the part of technical change after deregulation.

Rebelo and Mendes (2000) tried to study the change in the productivity of the banks in Portuguese over the period 1990 to 1997. They have used the Malmquist productivity index to find the result. The findings of the study suggest that deregulation has improved the productivity and technological efficiency in both large and small sized banks. Here it is also seen that government owned banks and rural banks are less efficient in catching up with the changing policies whereas urban banks showed higher productivity and technological improvement.

Mukherjee et al. (2001) analysed the productivity growth in the initial phase of deregulation in large US commercial banks between the periods 1984 to 1990. The paper used a non-parametric method of DEA to measure productivity. They found that the productivity growth existed on an average, but they also acknowledge that productivity declined between the years 1984-1985 by 7.61% and 1988 -1989 by 0.33%. The study also reveals that the larger banks witness higher productivity growth and higher equity to asset associate with lower productivity of the banks.

Ishik et al. (2002) this paper tries to examine the productivity of public, private and foreign banks established in Turkey after the initial phase of the post liberalization period from 1981-1989. The study has utilized a non-parametric approach of DEA type Malmquist index to find out the outcome. This methodology helps to get a clear view on technological change, efficiency change and scale change to productivity change in the banks studied. They found that liberalization posed a boon to all types of banks, moreover the performance of public and private banks improved to a greater extent. The productivity growth advanced with the increase in competition. The productivity growth improved more in foreign banks due to liberal banking reforms.

Canhoto & Dermine (2003) evaluated bank's efficiency and deregulation affect on the banks in Portugal during the period 1990-1995 using nonparametric DEA approach. The study found that the deregulation has succeeded in improving the efficiency of the banks in Portugal. The paper also witnessed an improvement in the productivity efficiency of new domestic banks after the introduction of financial reforms.

Isik & Hassan (2003) examined the impact of financial reforms on the productivity, efficiency and technical improvement, using a DEA-type Malmquist total factor

productivity change index approach, in the commercial banks of Turkey during the period 1981 to 1990. The outcome of the paper suggests that deregulation helped to increase the productivity efficiency of almost all types of banks in Turkey but the improvement with regards to technical efficiency was not seen as expected in the banks studied.

Ataullah et al. (2004) studied a comparative analysis of the bank efficiency before and after the implementation of financial liberalization in the banks of Pakistan and India between the period from 1988-1998. This paper has used a non-parametric DEA approach and found that the overall technical efficiency of the banks improved mainly after 1995 to 1996. The public sector banks in India were successful in increasing both technical and scale efficiency whereas; the banks of Pakistan were able to improve scale efficiency only. Further it was found that the banks in both the countries succeeded in increasing earning assets rather than generating income. The result suggested that financial liberalization reduced the efficiency gap of both large and small banks in both the countries.

Maghyereh (2004) studied the effect of financial liberalization on the efficiency of the commercial banks in Jordan using Data Development analysis (DEA). The study covered the period 1984 to 2001 and considered eight Jordan banks. The paper finds that financial liberalization has improved the efficiency of the banks. The benefit of financial liberalization was mainly taken by large banks in Jordan.

Mohan & Ray (2004) compared the performance of three categories of banks in India i.e., Public, Private and Foreign banks, using DEA approach during the period 1992 to 2000. The paper found that public sector banks performed well when compared to private sector banks. The performance of public sector banks was like

that of foreign banks. During the post reform period it was seen that the performance of public and private sector banks was in convergence to each other.

Reddy (2004) examined the effect of deregulation and bank's efficiency in India banks during the period from 1996 to 2002 using Data Envelopment Analysis and window analysis on different groups of bank ownership viz. State banks, nationalized banks, private and foreign banks. The paper found that deregulation improved technical efficiency and scale efficiency in most of the banks in India.

Shanmugam & Das (2004) analysed the efficiency of the banks during the reform period between 1992 to 1999. The study tried to examine an unbalanced panel of 94 banks in India broadly categorized into four groups of ownership using a stochastic frontier approach. They tried to study the four outputs i.e., interest margins, non-interest income, investment and credit. The findings suggest that the reforms were unable to increase interest margin due to technical inefficiency of the banks but succeeded in improving non-interest income, credit and investment of the banks in India. The result also showed an improvement in investment in all the banks, especially in private banks.

Sturm & Williams (2004) the paper tried to analyse the impact of foreign banks entry on the bank's efficiency of Australia over the period of 1988 to 2001 using Data Envelopment Analysis, Malmquist approach and stochastic Frontier analysis. The study found out the bank's efficiency has increased after deregulation. The foreign banks were found to be more efficient than domestic Australian banks to capture the benefit of deregulation.

Chen et al. (2005) tried to study the effect of deregulation on the efficiency of the banks in China. The study was confined to the period during1993 to 2000. This paper

found out that large sized banks and small sized banks are more productive than medium sized banks in China. The banks in China have been able to grasp the benefit of financial liberalization to a greater extent. Deregulation in Chinese banks has helped the banks to improve cost efficiency levels along with technical and allocative efficiency.

Patti & Hardy (2005) the paper examined the effect of financial reform on cost efficiency and profit efficiency of banks in Pakistan between the periods 1982 to 2002. The paper also tried to study the impact of financial reform on the group of banks operating in Pakistan. The study used different estimation techniques like OLS, GLS and LAD to find the result. The findings suggest that the reforms have improved the performance of the banks and new banks have benefitted from the deregulation. While analysing the group of banks it was found that new private domestic banks were more efficient and sometimes performed better than the foreign banks. The state-owned banks were least efficient when compared to other groups of banks in Pakistan in the light of financial reforms.

Mohan (2007) tried to study the impact of reforms in banks using various parameters such as return on asset, net interest spread, intermediation cost, cost income ratio, capital adequacy and non-performing asset. The study found out that the efficiency and stability of banks have increased post reform. Moreover, the efficiency of PSBs is in convergence with Private sector Banks. The study also revealed that the performance of PSBs highly depends on their capacity to meet future challenges along with the government union with the PSB in dealing with the uncertainties of the banking business.

Ariss (2008) this paper tried to study the effect of deregulation on the performance of the bank taking into consideration cost efficiency, ownership aspect and bank size using stochastic frontier approach in Lebanese banks. The period of the study is stretched over two phases of six years from 1990-1995 and from 1996-2001. The study found that deregulation has improved the efficiency of the banks and domestic banks are equally efficient as foreign banks in combating the changing policies.

Rezvanian et al. (2008) analysed efficiency change, productivity growth and technological progress due to post financial reform in public, private and foreign banks in India between 1998-2003 using non-parametric frontier approach. The study found that deregulation has improved the performance of the foreign banks compared to public and private sector banks in India. The findings suggested the government to frame efficient policies and promote mergers and acquisition to improve the performance of the banks in India.

Kumar & Gulati (2009) examined the efficiency of the PSBs after the post reform period. The study was spread over the period from 1992-2006.the study used data envelopment analysis to study the result. They found that after the post reform period the technical efficiency of PSBs increased and found that inefficient banks were also able to increase their level of performance and were able to compete with the efficient PSBs.

Zhao et al. (2008) tried to study the impact of deregulation on the performance of commercial banks in India using DEA- Malmquist Total Factor Productivity (TFP) Index between the periods 1992-2004. The study also tried to evaluate whether the reform had a different impact on bank ownership or not. They found that the banks succeeded in improving productivity growth along with technical efficiency and were

also able to improve the risk-taking behaviour due to deregulation. It was also found that technical advancement was mainly captured by the foreign banks in India.

Grifell-Tatje & Lovell (1996) examined productivity and deregulation effects in Spanish savings banks during the period of 1986 to 1991. Deregulation bestowed two important benefits to saving banks i.e., expansion of branching activities and increase in merging of banks in Spain. The findings suggested that deregulation did not really improve the productivity of savings banks.

Kumbhakar & Sarkar (2003) tried to examine the effect of deregulation on total factor productivity of Indian public and private sector banks over the period 1985 to 1996. Total Factor Productivity consists of technological change, scale efficiency and other components. The paper suggested no significant improvement in the productivity of both the banks after deregulation. It further explained that the improvements seen in the private sector banks were only due to the freedom of expansion, but public sector banks have not shown any improvement post deregulation.

Sensarma (2005) analysed cost and profit efficiency during the period of deregulation in Indian Scheduled Commercial Banks during the period from 1986 to 2003. The study used the Stochastic Frontier approach to find the result. They found that the Indian banks succeeded in improving cost efficiency but failed to increase profit efficiency in the banks within the study period.

Dwivedi & Charyulu (2012) examined the efficiency of the banks in India in the post reform era using Data Envelopment Analysis (DEA) confined to the period 2005 to 2010. They have selected loans and advances and non-interest income as the variable for measuring efficiency and other variables such as number of branches, deposit,

operating expenses as internal factors. The paper reveals that Nationalised banks, new private banks and foreign banks were affective in improving the profitability of the banks among other banks studied.

Robin et al. (2018) analysed the financial performance of the commercial banks in Bangladesh during the period from 1983 to 2012 with the help of panel data analysis. They have used ROA, ROE and NIM as an indicator of profitability of the banks. The study revealed that the post reform affect does not have any significant impact on ROA and ROE of the banks studied but it has highly improved NIM. They also found that the strength of capital and asset quality of the banks is highly responsible for improving the profitability of the banks in Bangladesh.

2.3. LITERATURE RELATED TO FINANCIAL PERFORMANCE OF BANKS.

Demirgüç-Kunt & Huizinga (1999) the study tried to find the impact of various determinants like bank characteristics, macroeconomic variables and overall financial structure on the profitability of the bank across 80 countries between the periods 1988 to 1995. The study suggests that the banks with higher bank assets to GDP and lower market concentration have lower profitability. The study also finds that foreign banks are more efficient in developing countries but the same isn't true for industrial based countries.

Pastor et al. (2006) they have evaluated the financial performance of 573 branches of large European savings banks using DEA and FDH approach to obtain the result. The study has used various indicators of financial performance like personal expenses, other operating expenses, deposit interest expense, delinquencies, interest income, deposit, customers, return on asset and profitability. The study found the inability of

the bank branches to perform affectively. Using parametric techniques, they found that the list of indicators can be reduced to study the financial performance of the bank branches.

Athanasoglou et al. (2008) examined the influence of bank specific factors, industry specific factors and macroeconomic factors on profitability of banks in Greece. The study was spread over a period from 1985 to 2001.They found that almost all the variables undertaken affect the profitability of the bank except the bank size. It was also found that the business cycle affects the profitability only in the maturity phase of the cycle.

Ongore & Kusa (2013) analysed the effect of banks specific factors and macroeconomic factors on the financial performance of 37 commercial banks of Kenya during the period 2001 to 2010. This paper has used linear multiple regression model and Generalized least Square to obtain the objective of the study. They have used camel estimation for indicating variables for the study. The study found that capital ratio, asset quality, management efficiency significantly affects the financial performance of banks in Kenya except for liquidity ratio. The macro-economic variables and ownership affect was not significant on the financial performance of the banks studied.

Hassan Al-Tamimi (2010) tried to study the impact of various internal and external factors on the performance of the UAE Islamic and conventional national banks between the periods1996 to 2008. The study has used a regression model where ROA and ROE were used as the main and dependent indicators of profitability. The paper found that liquidity and concentration were important drivers of performance in

conventional national banks whereas cost and number of branches favoured more in improving the performance of Islamic Banks.

Sathye (2003) analysed the efficiency of Public Sector banks, Private sector banks and foreign banks using two models of Data Envelopment Analysis (DEA). The study showed that the mean efficiency score of Indian banks is good enough when compared with the world efficiency score. It was further found that the performance of Private Sector Bank is lower when compared to the efficiency of PSB and foreign banks in India.

Mohan & Ray (2004a) examined the productivity growth and efficiency of public, private and foreign banks in India during the period from 1992 to 2000. The study has used the tornqvist and Malmquist total factor productivity growth approach to analyze and compare the performance of public sector banks with private and foreign banks. The paper revealed that the performance of public sector banks was satisfactory, and its growth showed a minimal lag with reference to foreign and private sectors. Public banks are always perceived to perform inadequately in comparison to foreign and private banks and this perception falls short with the analysis.

Chantapong (2005) the study has used regression analysis to analyze the financial performance of foreign and domestic banks in Thailand after the East Asian financial performance between the period 1995-2000. The paper found that the performance of foreign banks is more efficient than the domestic banks in Thailand. Even though the foreign banks performed better than domestic banks yet the profitability between both the banks were in convergence post financial crisis.

Kosmidou et al. (2005) analysed the impact of bank internal factors, macroeconomic variables and financial structure on the profitability of 32 U.S. Commercial banks

during the period from1995 to 2002. The study has used Return on Asset (ROAA) calculated as net profit after tax divided by average total asset and NIM as the profitability indicator of banks. The results indicate that capital strength, bank size and efficient expenses management plays an important role in improving the profitability of the banks. It is further seen that macroeconomic variables and market structure also has a positive impact on the profitability.

Kosmidou (2008) tried to find the determinants of profitability in twenty-three banks of Greece during the period from 1990 to 2002. The study has used unbalanced pooled time series data. Return on Average Asset (ROAA) was used as an indicator of profitability. The paper found that lower cost to income ratio and capital strength helps in improving ROAA of the banks. It was also identified that GDP improved ROAA and inflation was negatively associated with ROAA.

Ilhomovich (2009) examined the financial performance of foreign and domestic banks in Malaysia using a multiple regression analysis for the period of five years from 2004 to 2008. The study has used the components of CAMEL to analyse the performance of banks with the help of financial ratios. The paper found that the performance of a bank is highly influenced by CAR, total loan to asset ratio, nonperforming asset, interest expenses to total loans, total operating ratio and loan to deposit ratio. The study also witnessed higher ROA in domestic banks than foreign banks of Malaysia.

Bodla and Verma (2006) used a multivariate regression model on Public Sector banks in India to study the factors affecting the profitability of the banks from the period 1991 to 2004. The paper has found that non-interest income, operating

expenses, provisions and contingencies helps in improving the profitability of the public sector banks in India.

Bodla & Verma (2006) examined the performance of SBI and ICICI banks in India using CAMEL model and CACS factors during the period from 2000 to 2005. The result reveals that the capital adequacy of SBI has improved the profitability of the bank whereas factors such as asset quality, management efficiency and earning quality of ICICI bank are better than that of SBI bank. It is further witnessed that the liquidity position of both the banks during the studied period were at par to each other.

Samad et al. (2006) analysed the financial performance of commercial banks in the state of Utah between the period of 2000 to 2004 using t-test and Kruskal-Walli's test on large, medium and small sized banks. The study used profitability and loan quality to determine the result where ROA and ROE were used as the profitability indicator. They found that the medium sized banks performed better than small and large banks in Utah.

Olweny & Shipho (2011) the study tried to evaluate the profitability of the banks in Kenya using CAMEL approach, income diversification, market factors and ownership aspect. The study was undertaken in 38 commercial banks from 2002 to 2008. The paper found that bank specific factors considered in CAMEL highly influenced the profitability of the banks other than market factors. It was also noted that large sized banks were able to improve the profitability of the banks compared to medium and small sized banks in Kenya.

Said and Tumin (2011) examines the impact of bank specific factors on the financial performance of commercial banks of China and Malaysia from 2001 to 2007. The

study has used Return on Average Asset (ROAA) and Return on Average Equity (ROAE) as the benchmark for measuring the performance of both the countries. The paper indicates that liquidity and bank size does not affect the performance of banks in both the countries. Credit risk and operating expenses are negatively related to ROAA of both the countries. It was found that capital strength positively affects the ROAE of Chinese commercial banks.

Said (2012) examined the efficiency of the Islamic bank using DEA approach and t-test to test the hypothesis during the financial crisis 2006-2009. The input used in the model is labour cost, fixed asset and total deposit and the output used are total loan, liquid asset and other income. The paper reveals that large banks have succeeded to improve their efficiency during 2006 to 2008 but saw a decline in the performance in 2009 whereas small and medium banks operated at a lower level of efficiency.

Sangmi & Nazir (2010) the study tried to analyse the financial performance of Punjab National Bank (PNB) and Jammu and Kashmir Bank (JKB) using CAMEL model from the period 2001 to 2005. The analysis of secondary data is done using Mean and Standard deviation. The paper reveals that the banks studied are financially sound in terms of capital adequacy, asset quality, management capability and liquidity. It reveals that PNB is more efficient in maintaining Capital adequacy ratio, operating profit, generating fee-based income, net interest margin and JKB is more efficient in average ratio of Net NPA, ROA and liquidity position.

Ben Naceur & Goaied (2008) examines the impact of financial structure, bank characteristics and macroeconomic variables on the profitability of Tunisia's bank from the period 1980 to 2000 on ten deposit banks in Tunisia. The study has used panel data regression and used ROA and Net Interest Margin (NIM) as the main

indicator of profitability, where random effect models are chosen for both the dependent variables. They found that bank characteristics hold an important aspect in improving the NIM and ROA. Moreover, the banks with higher capital and overhead imply better NIM and ROA. The paper indicates lower profitability in large size banks. The study further indicates no relationship between macroeconomic variables and profitability, but they find an appropriate positive relationship between financial structure and NIM and profitability of the banks studied.

Tufan et al. (2008) this paper has evaluated domestic and foreign banks of Turkey using Principal Component Analysis (PCA) and logistic regression method. The study has used 17 domestic and 8 foreign banks in Turkey**.** The result indicates that domestic bank outperforms foreign banks in Turkey. The branch wise spread of foreign banks is very limited and that could be one of the reasons for inefficiency of foreign banks compared to the domestic banks.

Wirnkar & Tanko (2008) tried to assess the performance of commercial banks in Nigeria during the period 1997 to 2005. They have used the CAMEL model, DEA approach and Efficiency measurement software (EMS) to analyse the performance of different kinds of banks. The paper found the inability of CAMEL approach to explain the overall performance of the banks. It was found that shareholders' funds to total risk assets proved to explain the capital ratio of the banks studied.

Dash & Das (2009) examined the financial performance of twenty-nine public sector banks and twenty-nine foreign/Private banks between the periods from 2003 to 2008 using CAMEL model to obtain the result. The CAMEL framework includes capital adequacy ratio, asset quality, management efficiency, earnings and profitability, liquidity and market sensitivity. The study found that the performance of

Foreign/private banks were more efficient than compared to public sector banks in India. The management efficiency, earnings and profitability of Foreign/private banks helped the banks to outperform public sector banks in India. The study further suggested various measures to be adopted by public banks in order to cope up with the development as foreign banks.

Flamini et al. (2009) this paper tried to study the determinants of profitability in 389 commercial banks in 41 Sub-Saharan Africa (SSA) countries between the periods 1998 to 2006. They have used bank specific factors, ROA as the indicator of profitability and macro-economic variables. The study found that larger bank size, the banks with higher diversification and private banks have greater influence over performance of the banks studied. They reveal that macroeconomic variables also affect the profitability of the banks and recommend that low inflation rate would lead to credit expansion.

Mathuva (2009) evaluated the relationship between Capital Adequacy Ratio (CAR) cost income ratio and financial performance of banks in Kenya spread over the period 1998 to 2007. The study has used ROA and ROE as the indicator of performance in the banks. The paper has used correlation matrix, regression analysis, time series analysis to obtain the result. It has found that CAR highly improved the ROA and ROE of the banks and cost income ratio of the banks over the time studied was quite high and negatively affected the profitability of the banks. The study further suggested reducing the cost income ratio of the banks to improve the performance of the banks in Kenya.

Vong & Chan (2009) tried to evaluate the impact of bank characteristics, macroeconomic variables and financial structure on the profitability of the banks in

Macau during the period from 1993 to 2007. The study has used ROA and ROE as the indicator of profitability and has obtained the result using panel data technique where they have chosen a fixed effect model. They observed that bank characteristics can influence the profitability of the banks studied. It was found that the banks with more equity capital were able to improve the profitability and the small sized banks were more efficient than larger banks in maintaining ROA. Other macroeconomic variables remaining unsound it was found that inflation helped in improving the ROA of the banks in Macau.

Prasad et al. (2011) analysed the performance of all public sector banks and thirteen private sector banks between the periods 2006-2010. The study has used CAMEL model to determine the performance of banks which inculcates capital adequacy, asset quality, management efficiency, earning quality and liquidity. The study has given equal weights to all the parameters. They have found that the performance of Karur Vyasa was graded first followed by Andhra bank and Bank of Baroda and the performance of Central bank was ranked on the last position followed by SBI and Karnataka bank.

Zaman (2011) tried to study the impact of bank specific factors on the profitability of the banks in Pakistan during the period 2004 to 2008.The paper has used pooled Ordinary Least Square method to find the impact of the internal factor on ROA taken as the important indicator of profitability. The study finds that Equity and deposit plays an important role in improving ROA of the banks, but the asset size and higher loans does not have a significant role in improving the profitability of the banks in Pakistan.

Naidu (2012) evaluated the financial performance of Andhra banks in India over the period 2006-2010. The study has used CAGR, Coefficient of Variation, mean and standard deviation of various ratios of the bank to calculate the performance of the bank selected. The paper has found that Compound Annual Growth of interest earned, total expenditure, total liabilities, total asset, burden ratio and interest expended to total funds has increased. It is further noted that interest earned, total expenditure and ratio of net profit to total fund has decreased the performance of the bank during 2006 to 2010.

Ally (2013) studied the financial performance of Tanzania commercial Banks during the period from 2006 to 2012 using financial ratios and Analysis of Variance (ANOVA). The study tried to analyse profitability and liquidity aspects of the banks. The main performance indicators used in this study are ROA, ROE and NIM. The paper revealed that the financial performance improved during the first two years of the study but declined in the year 2008-09 due to the financial crisis. The study discloses that small banks have better NIM due to charging higher rates on loan and different bank groups have different ROE and NIM, but ROA is almost the same in all bank groups in Tanzania.

Ayyappan & Sakthi Vadivel (2013) analysed different financial ratios on the performance of the selected Public and Private Sector Banks in India between the periods from 2001 to 2010. The study has used multivariate correlation analysis and Return on Total Asset as an indicator of profitability (dependent variable) to study the financial efficacy of the banks. They found that banks like ICICI, Oriental Bank of Commerce and Punjab National Bank are more efficient than other banks studied.

Singla (2013) tried to study the productivity of three Private Sector Banks India namely ICICI, HDFC and Axis Bank over the period 2007 to 2012. The paper has used ratios such as Deposit per Employee, Advance per Employee, Business Volume per Employee, Deposit per Branch, Advance per Branch and Business Volume per Branch as the indicator of productivity. The study has obtained the results with the help of mean and CAGR. The paper reveals that the productivity of ICICI bank is better than other two banks in terms of per employee productivity but branch wise performance of ICICI bank is lower than other banks studied.

Adam (2014) examined the financial performance of Erbil bank using financial ratio analysis during the period of 2009 to 2013. The financial performance was measured using Return on Asset (ROA) Return on Equity (ROE) and Return on Deposit (ROD) as dependent variables and bank size, asset management and operational efficiency were taken as independent variables. The study showed that bank size does not have any influence on ROA and ROE. It was also found that loan influences ROE but has no affect on ROA of the banks and operational efficiency is negatively correlated with ROA.

Haque (2014) tried to evaluate the financial performance of different bank group i.e. PSB, Private Banks and Foreign Banks in India between the period 2009-2013. The study has used ROA, ROE and NIM as the indicator of profitability and ANOVA to evaluate the performance of the Indian banks. The paper found that after the financial crisis of 2008 the ROA of different bank groups declined but NIM has improved in Old and New Private Sector Banks in India. It is also revealed that the ROE of all the banks has declined.

Misra (2015) analysed the factors affecting the profitability of 121 banks in India between the periods 2000 to 2011. The study has used panel data regression to analyze the result. The main indicator of profitability used in this paper is ROA and ROE. The paper reveals that asset quality, ratio of loan to total asset, NIM and non-interest income has a significant influence on both ROA and ROE of the banks, but the profitability is not affected by the macroeconomic variables like GDP and inflation. The study also finds that size of the bank and CAR is highly efficient in improving the ROA of the banks studied.

Seenaiah et al. (2015) they tried to study various internal and external factors affecting the profitability of banks during the post reform period from 1995 to 2012. The paper uses widely used profitability indicators viz. ROA and ROE. They found that most of the factors used indicate an improvement in the profitability of the banks except NIM and cost of deposit. They have also witnessed an unexpected significance of the wage bill in improving the profitability of the banks. The findings further suggest the banks to keep a check on operational expenses.

Maiti & Jana (2017) this paper has tried to investigate the factors affecting the profitability of the banks using panel data regression between the period 2008 to 2013 in five commercial bank group i.e. SBI and its associates, nationalized banks, old private sector banks , new private sector banks and foreign banks in India. The dependent profitability indicators used in the study are ROA and ROE and various independent variable are used in the study like Business per Employee (BPE) Profit per Employee (PPE) NIM, CAR, NPA, ADR, Non-interest Income Ratio (NIIR) and operating expense ratio. The results reveal that PPE, NIM, NIIR and non-performing assets play an important role in the profitability of all kinds of banks studied.

Pinto et al. (2017) this paper examines the financial performance of banks in Bahrain during the period from 2005 to 2015 using regression analysis, correlation analysis and t-test. They have used various financial parameters like ROA and ROE for profitability, efficiency, financial strength and leverage ratio to evaluate the performance of the banks studied. The study reveals that capital adequacy ratio and financial leverage has an influence on ROA and ROE of banks and no relation was seen between profitability and efficiency.

Ahmed et al. (2018) tried to study the impact of interest rate fluctuation and financial performance of 20 banks in Pakistan during the period from 2007 to 2014. They have used correlation and regression analysis to find the impact. They have used ROA, ROE and earnings per share (EPS) as the indicator of profitability. The paper found that deposit and interest rate has negatively affected the performance of banks studied. It was also found that loans, advances and investment have improved the performance of the banks in Pakistan.

Singh & Milan (2020) tried to evaluate the bank specific factors and macro-economic factors on the performance of Public Sector Banks (PSB) in India between the period 2009-2019. The study has used the CAMEL model as the determinant of profitability and has obtained the result using Generalized Method of Moment (GMM) analysis and CCA (canonical correlation analysis). The findings disclose that capital adequacy and GDP growth improves the performance of the bank. It further reveals that asset quality, liquidity and inflation reduce the profitability efficiency of public sector banks in India.

2.4. LITERATURE RELATED TO NON-FUND BASED INCOME AND FINANCIAL PERFORMANCE OUTSIDE INDIA.

DeYoung & Roland (2001) evaluated the effect of fee-based activities on the income and earnings volatility of 472 U.S. Commercial banks over the period from 1988 to 1995. The study has considered cost and revenue approach to acquire the result. They have found that opting for fee-based activities to improve the performance of the bank has helped to increase the profitability of the U.S. commercial banks but at the same time diversification into fee-based activities comes with the cost of higher risk.

Smith et al. (2003) studied the impact of non-interest income on total income stability in banks of EU countries between the period from 1994-98. The paper aimed at studying the variability of interest and non-interest income, and their correlation in consideration with the bank type and size to study the profitability and risk of non-interest income relative to interest income and the diversification benefits of non-interest income. The study found that the importance of non-interest income has increased, income stabilization but not for all categories of bank, but not to the extent that it is believed it will stabilize the income and is invariably more stable than interest income in the European banking industry in those years. The paper used time series and cross-sectional analysis, where mean and coefficient of variation is used to study return and risk respectively.

DeYoung & Rice (2004) studied the relationship between Non-interest Income and Financial Performance of U.S. Commercial Banks between the period from 1989 and 2001. The study revealed that well managed banks are slowly expanding into non-interest income and on average marginal increase in non-interest income is associated with low-risk return trade off. The study reveals that non-interest income does not

replace interest income; rather it coexists with the bank's traditional function. Further it is observed that even if diversification increases the profitability, it exposes the bank to higher risk by increasing the volatility of earnings.

Stiroh (2004) studied the effect of diversification in U.S Banks from the period 1970-2001. The study has used cross-sectional and bank specific correlation, F-test. This paper examines the potential diversification benefits from the shift. The study found that both aggregate and bank level diversification proves to be better benefits in the form of stable profit.

Craigwell & Maxwell (2006) investigated the trend, determinants of non-interest income and the impact of non-interest income on risk and return of Commercial Banks in Barbados stretched over the period from 1985-2001. The study has used regression analysis to obtain the result. The paper reveals that bank characteristics and (ATM)s play an important role in increasing non-interest income in the banks. They also found that non-interest income helps in improving the return of the bank but at the same the risk factor also increases with the involvement in non-interest income. A decline in the trend of non-interest income was observed during the study period.

Stiroh & Rumble (2006) examined the income source diversification benefit on the profitability of U.S financial Holding Companies between the periods from 1997 to 2002. The paper has used Herfindahl index to determine the concentration of diversification and Z score to analyse the risk associated with the income source diversification in the banks studied. They have found a robust relationship between non-interest income and the performance of the banks, further adding that non-interest income is more profitable than interest-based income but is volatile in nature.

Stiroh (2006) examined the impact of non-interest income on return and risk of U.S Commercial Banks between the periods from 1997 to 2004. The paper has used a portfolio framework to analyse the result. The paper reveals that diversification into non-interest income has not been able to improve average return and diversification proves to be riskier in the banks of the U.S.

Mercieca *et al.* (2007) tried to investigate the impact of non-interest income on the performance of 755 Small European Banks between the periods 1997 to 2003.The study finds that small European banks are not able to reap the benefits of diversification into other income. The paper further reveals that there exists an inverse relationship between non-interest income and bank performance.

Williams & Rajaguru (2007) the study tried to evaluate the relationship between Net interest margin and non-interest income of 50 banks in Australia during the period from 1998 to 2004. They have used panel data, vector auto regression to obtain the result. The paper reveals an inverse relationship between net interest margin and non-interest income implying the capabilities of non-interest income of Australian banks to cover the risk of net interest margins.

Chiorrazo et al. (2008) studied the link between non-interest revenues and Profitability for the period 1993 to 2003. The findings indicate income diversification increases risk-adjusted returns and there are limits to the diversification gains which can be achieved as banks get larger. Further, it found that small banks can make gains from increasing non-interest income, but they have low non-interest income share.

Lepetit et al. (2008) evaluated the impact of income diversification on risk of the European banks over the period 1996 to 2002. The study has tried to investigate the risk measures and insolvency risk measures with the help of descriptive statistics.

They have found that the banks relying on non-interest income are exposed to higher risk and higher insolvency risks than compared to the banks focusing on traditional activities. The further disclosed that size of the banks plays an important role in determining the variability of risk in different banks since risks were positively related to small banks.

Busch & Kick (2009) investigated the determinants of non-interest income and its impact on profitability and risk associated with diversification in the banks of Germany over the period from 1995 to 2007. The paper has used ROA and ROE as the indicator of profitability and the Standard deviation of ROA and ROE as Risk-Adjusted Return on Asset (RAROA) and Risk-Adjusted Return on Equity (RAROE) as the measure of risk. They have found that the involvement of banks in non-interest income increases their return in terms of both ROA and ROE. The study further reveals that the banks with larger share of fee-based activities are able to derive higher RAROA and RAROE, but the commercial banks are facing higher risk while diversifying into non-interest income. They also disclosed that the banks highly involved in generating fee-based income are more inclined to charge lower interest margins when credit risk is controlled.

Haowen & Jing (2009) the changing business environment and the volatility of changing interest income has led the banks to diversify into non-interest income of banks. This paper has tried to examine the relationship between interest and non-interest income of commercial banks in China through correlation analysis between the periods from 1990 to 2006. The study finds that non-interest income plays an important role in mitigating the risks of changing interest income and suggests that

the commercial banks in China should opt for diversifying more in non-interest income.

Bailey-Tapper (2010) tried to examine the relationship between non-interest income and financial performance of Jamaican banks during the period from March 1999 to September 2010 using both bank internal factors and macroeconomic factors. The paper has used a Seemingly Unrelated Regression (SUR) model and the equations used by (DeYoung and Rice 2004) to estimate the result. The paper reveals that increase in (ATM), deterioration in loan quality, increase in bank efficiency, consumer loan and investment help the banks to improve non-interest income. The study further reveals that if the banks diversify its income to non-interest income, then it improves the financial performance of the banks in Jamaica but at the same time the earning volatility also increases.

Williams & Prather (2010) with the help of 49 Australian banks, have tried to study the affect of diversification into non-interest income on bank's return and risk associated with it. The study concluded that non-interest income is riskier than interest income as interest income promises steady income. It was further revealed that diversifying into non-interest income tends to benefit shareholders.

Sanya & Wolfe (2011) evaluated the impact of income diversification on the performance and risk of 226 banks of 11 emerging economies between the periods 2000 to 2007. The paper has used System Generalized Methods of Moments estimator (system GMM) to analyze the result. They have used ROA and ROE as the indicator of bank performance, Z-score (RAROA and RAROE) as the indicator of risk and various bank specific factors and macroeconomic variables as control variables in the

regression. They have found that income diversification improves the performance of the banks and has mostly benefited the banks taking moderate risk.

Rotich et al. (2011) tried to study the impact of income source diversification on financial performance of 44 commercial banks in Kenya between the period 2005-2009 with the help of Herfindahl-Hirschman Index for diversification, correlation and regression analysis. They have used primary and secondary data; the primary data was obtained through key informant methods. They found that both the income sources were positively related to each other. The study further revealed that the financial performance of the commercial banks in Kenya were highly influenced by income source diversification.

Teimet (2011) studied the Income Source Diversification and Financial Performance of Commercial Banks in Kenya in 44 registered commercial banks for the period 2005-2009. The study tried to find out the impact of income source diversification on financial performance of commercial banks in Kenya, by using Herfindahl-Hirschman Index, Correlations and Regression analysis. The study revealed that diversification has a positive influence on commercial banks in Kenya and the two main revenue streams are positively related. The study period was limited to only 4 years.

Hidayat et al. (2012) investigated the relationship between non-interest income and bank risk in the banks of Indonesia stretched over the period from 2002 to 2008. They have found that larger banks diversifying into non-interest income are exposed to higher risk than compared to smaller banks. Therefore, the affect of income diversification is highly based on the size of the banks in Indonesia.

Delpachitra & Lester (2013) studied the effect of non-interest income on the return and risk of 87 Australian banks stretched over the period from 2000-2009. The paper

used ROA and ROE as the measure of profitability and RAROA and RAROE as the indicator of risk adjusted return on asset and equity respectively. They have found that non-interest income to a certain level; increases profitability but it doesn't really replace the benefit of traditional activities. The paper further reveals that low-tier banks showed focus more on traditional activities as non-interest income doesn't really improve the profitability but raises volatility of income.

Li & Zhang (2013) this study has tried to investigate the relationship between income source diversification on risk and return on Chinese banks between the periods from 1986 to 2008. They disclose that even though the trend of income source diversification has increased in the Chinese banks in the studied period, relying fully on non-interest income for revenue will intensify the risk and return of the banks.

Molyneux & Yip (2013) studied the impact of Income Diversification on the Performance of Islamic Banks in Malaysia, Saudi Arabia, Kuwait, United Arab Emirates, Bahrain and Qatar where accounting data was taken from 68 conventional and 42 Islamic banks from 1997 to 2009. The study found that non-financing income activities positively affects the risk-adjusted performance. Moreover, greater income diversification increases income volatility and reduces risk-adjusted performance.

Köhler (2014) assessed the impact of non-interest income on the risk-taking capability of retail and investment banks. The study has reported that retail banks who are mainly engrossed on traditional activities if they shift their focus into non-interest income then the retail banks can minimize the uncertainties of interest income but for investment banks diversifying into non-interest income leads to increase in their revenue volatility.

Lee et al. (2014) studied the impact of noninterest income on profitability and risk on 967 individual banks in Asia over the period 1995-2009. The study found that non-interest income of the studied banks helps in reducing risk but does not increase profitability on a broad sample basis.

Meslier et al. (2014) analysed the impact of non-interest income on the profitability and risk in 39 Universal and commercial banks of the Philippines stretched over the period from 1999 to 2005. The paper has used ROA and Standard deviation of ROA (SHROA) to measure the performance of the bank. They have found that diversifying into non-interest income helps the banks to improve return and risk–adjusted return in the banks of Philippines. The paper also reveals that foreign banks can reap the benefits of diversification than the domestic banks.

Ngumi (2014) examined the effect of financial innovations like (ATM), debit and credit card, internet banking, mobile banking, electronic fund transfer and point of sale terminal on the financial performance of the 20 conventionally selected banks in Kenya during the period 2002 to 2011. The study has used frequency, descriptive statistics and multiple linear regression analysis to check the impact of financial innovations on total income, PBT, ROA and customer deposit. The paper has used SPSS software to analyse the results. The study found that financial innovation has a positive impact on the profitability of the banks in Kenya and banks should focus on linking mobile networks with various banking services in order to improve their profitability.

Ngari & Muiruri (2014) tried to study the effects of credit card, mobile banking, internet banking and agency banking on the profitability of the banks in Kenya over the period 2008-2012. The study has used descriptive analysis to obtain the result of

44 commercial banks in Kenya. They have used profitability and efficiency variables. The profitability variable used is net profit margin and gross profit and bank overhead as a percentage of its revenue as efficiency ratio. The results are based on both primary and secondary data of banks. The study found that the financial innovations have improved the overall performance of the banks in Kenya. They have found that banks in Kenya have used different financial innovations to attain different objectives of the banks.

Zhou (2014) this paper has tried to assess the impact of non-interest income on bank risk of 62 commercial banks of China between the period from 1997-2012. As per the finding the paper reveals that non-interest income is not associated with the overall risk of the banks since the risk is also associated with interest income, but non-interest income increases the volatility of income of the banks studied.

Ismail et al. (2015) evaluated the relationship between income diversification and risk and return of 14 banks in Pakistan between the periods from 2006 to 2013. They have used ROA and ROE as the indicator of profitability and standard deviation and Sharpe ratio to determine the risk associated with diversification. The study found that income diversification, loan ratio, bank size and equity ratio improve the performance of banks. They also disclosed that larger banks have more options for reaping the benefit of income source diversification.

Saunders et al. (2016) suggested that risk-adjusted returns increase with an increased share of non-interest income in banks. The above findings are quite contradictory; therefore, we want to find out how non-fund-based income related to financial performance with different ownership categories of scheduled commercial banks in India.

Al-Tarawneh et al. (2017) evaluated the influence of non-interest income on financial performance of 13 banks in Jordan over the period 2000 to 2015. They have used ROA as a profitability measure and other independent variables like CAR, overheads, loans, size of the banks, non-interest margin. The paper has used panel data regression where FEM and REM are taken into consideration along with the Hausman test to obtain the result. They have revealed that bank size, CAR, overhead expenses and non-interest income improves the financial performance of the banks in Jordan.

Teimet et al. (2020) examined the relationship of bank size and its impact on income diversification and bank performance using a panel of 42 commercial banks in Kenya. This paper is stretched over the period from 2008 to 2019. The study has used the Hirschman- Herfindahl Index (HHI) model to examine diversification affect, moderation affect to understand the bank size and ROA to examine bank performance. The study reveals a positive relationship between income diversification and bank performance. It further entails that the larger size of the bank positively influences the performance of the bank due to its advantage of economies of scale, capabilities of withstanding financial circumstances and risk of diversification.

2.5. LITERATURE RELATED TO NON-FUND BASED INCOME AND FINANCIAL PERFORMANCE IN INDIA.

Umakrishnan & Bandyopadhyay (2005) analysed the income source and risk adjusted return on different ownership of banks in India. They studied 77 banks in India using panel data regression between the period 1999-2004. They found that the new private and foreign banks have better risk adjusted returns than public sector and old private sector banks in India. The main reason behind the better risk adjusted

return of new generation banks is their increased dependence on fee-based income. The uncertainties involved in investment income have proven to reduce the interest income of public and old private sector banks. The study suggested that traditional activities can be improved with efficient management of credit risk along with diversifying into non-interest income.

Sharma (2009) tried to analyze the relationship between non-interest income and profitability at the same time study the components of non-interest income of SBI and its associates, Nationalized Banks, other Scheduled Banks and Foreign Banks in India over the period 1994 to 2004.the results were obtained using two Multiple regression equation, the first equation to understand the affect of non-interest income and interest income on profitability of the banks and second equation to examine the affect of various components of non-interest income on the profitability of the banks. The result revealed that activities of non-interest income in all the banks studied increased by 8% over the span of 11 years. The paper found that the major chunk of income from non-interest income comes from commission/exchange and brokerage followed by income from sale of investment.

Deb (2010) using the data of 60 branches of Indian banks during the period 2003-2007 the study has tried to analyse the impact of income source diversification on the total income of the selected bank branches in Northeast India. The study finds an important role of non-interest income in improving the total income of banks on branch level. The contribution of non-interest income on the bank's profitability during the study period showed a more promising return than interest income.

Uppal (2010) Studied "Stability in Bank Interest through fees-based activities" for the period 2000-2008 in India, the study indicates that interest income is continuously

declining due to deregulation in interest rates and non-interest income is rising moreover components such as commodity exchange and brokerage witnessed a larger share than other exchange transaction. The gap between public and private sector banks witnesses an increase and public sector banks should adopt new methods to increase their non-interest income like private and foreign banks have incorporated like e-delivery channels. The statistical tool used is mean, standard deviation, coefficient of variance and coefficient of correlation. Here, the name of the banks studied is not clearly defined and studies could have been more appropriate if it had been studied individually.

Pennathur et al. (2012) examined the relation between non-interest income and bank financial performance in an emerging market in 95 Indian banks during the period 1997-2007. The study used an econometric model. The study finds that non-interest income highly influences return on equity, loan quality, profit per employee, and personalized customer service offered to bank customers and as banks continue to invest in interest income, they tend to diversify less in non-interest income. It is also found that foreign banks have captured larger amounts of non-interest income.

Das (2013) the paper tried to examine the activities of Non-Fund Based Income of 10 Private Sector Banks and 10 Public Sector Banks in India between the period from 2008 to 2012 using a comparative statement of Fund based and Non-Fund Based Income of selected banks. The activities of NFBI were analysed with the help of mean, SD, t-test, f-test and ANOVA. The study reveals that the involvement of SBI in NFBI among the Public Sector Banks is the highest whereas ICICI banks are earning more from NFBI than compared to other Private Sector Banks in India. It was also found that NFBI in banks rose at the rate of 8% within the studied period. The paper

revealed the success of NFBI in increasing the financial performance of banks mitigating the risk of changing interest income of banks.

Singh & Dubey (2015) tried to compare Non-fund Based Income of Private sector banks and foreign banks in India between the periods from 2009 to 2013. The paper obtained the result by using observation method, mean and standard deviation. They have found that the proportion of Non-Fund Based Income of Foreign banks is quite higher than the private sector banks in India.

Gadaboina (2016) studied the trend of Non-Fund Based Income of ICICI bank over the period 2005 to 2016. The article has tried to understand the earnings and components of NFBI using Compound Annual Growth Rate (CAGR) and Year to Year growth rate (YoY growth rate). The paper found that due to deregulation and changing business environment interest income is declining whereas non-interest income is increasing. It is also witnessed that among the various components of non-interest income commission, exchange and brokerage holds a larger chunk in the profitability of the bank whereas exchange transaction holds a smaller portion in other income.

Ahamed (2017) examined the impact of income source diversification on the profitability of the banks with different asset quality across different ownership. The paper has tried to investigate the impact of income source diversification on public sector banks, foreign banks and private domestic banks in India with the help of a panel data analysis. The study found that non-interest income has helped in improving the return and risk adjusted return in foreign banks compared to the public and private sector banks in India. It was also revealed that the banks with lower asset quality

prove to be more efficient in terms of improving profitability through income diversification.

Deb (2017) tried to assess the impact of income diversification and geographical diversification on the performance of Indian banks over the period 2000 to 2014. The study is based on panel data regression and has used Data Envelopment Analysis (DEA). The paper has estimated the efficiency of the banks using Tobit regression. The paper has found that income diversification has no significant impact on the efficiency of the banks, but the geographical diversification reduces the technical efficiency of the banks.

Kumar (2018) using a multivariate regression analysis, the study has tried to examine the impact of non-traditional income on the profitability of Scheduled Commercial Banks in India during the period from 2006 to 2015. The paper reveals that income diversification improves the overall profitability and risk adjusted return and witnesses an unstable growth of non-traditional income over the period of study. The study discloses that the non-traditional income benefits are mainly taken by foreign banks and Private Banks.

Singh (2018) the study tried to analyse the relationship between interest income, net interest margin and non-interest income on the profitability of different bank groups using different statistical tools. With the help of SPSS software, it was discovered that overall foreign banks can improve profitability affectively and efficiently and have the highest non-interest income than other two groups of banks. The findings reveal that the private sector bank has succeeded in improving ROE by efficient management of finance. Further, it was found that Public and Private sector banks earn more from traditional activities of banks i.e., interest income. The performance

of public sector banks in the study period is quite alarming when compared to other two groups of banks.

Kaur (2019) studied the trend and relationship between interest income and non-interest income taking into consideration ownership structure. The paper has also analysed the growth of various components of non-interest income. The study is conducted between the period 2000- 2017 in different ownership structures i.e., public sector, private sector banks and foreign banks. Correlation results suggest a negative correlation between interest and non-interest income in public and private (Indian) banks. Further, a positive relationship was witnessed between interest and non-interest income. The paper suggests public sector banks and private (Indian) banks to diversify into non-interest income to improve the profitability of the banks as a growth in income from diversifying were noticed in these banks.

2.6 GAP IN RESEARCH AND PROPOSAL FOR STUDY

The findings of literature reviewed above tend to differ between countries. The impact of non-interest income and bank performance is still unclear. The affect of size of the banks, loan strategy, loan quality, technological development, management capabilities in terms of Return on Equity (ROE) and ownership on the non-interest income at the same time the influence of NFBI on the financial performance of bank remains as an unanswered question in the context of Indian banks from the period 2006-2015.

Aforesaid studies reveal that all the studies conducted outside as well as in India have found that banks have so far benefitted through diversification by way of non-interest income, but the benefit is highly dependent on the bank size, ownership structure, financial liberalization level and institutional arrangement prevalent in a country. In

view of this, diversification has so far contributed more benefits to the foreign banks as compared to Private and Public sector banks. There is a rise in the non-fund based income of public and private sector banks, but the rise has not witnessed a growth in the non-Fund based income unlike in the foreign banks in India. Hence, the study will focus on the non-fund-based income in the Public and Private (Scheduled Commercial Banks) in India. The earlier studies in India are more based on comparisons; this study focuses on the linkages of the financial performance and the volatility arising of the diversification into non-fund-based Income of the Scheduled Commercial Banks in India with special focus on Public and Private sector Banks. The study has been conducted on different time frame and has included all the public and private sector banks whose data are available throughout the period of the study. The study is based on determinants of NBFI based on various banking parameters and focuses on finding the influence of NFBI on ROA, RAROA and RAROE which makes the study unique.

2.7 CONCLUSION

This chapter has taken into consideration various literatures conducted on the NFBI of the banks in and outside India. The literature is segregated into four different subsections. Each subsection aims at studying different aspect of the research area. The literature of the study first tries to include study related to banking reforms in India since it plays an important role in affecting the performance of the banks, secondly the literature related to financial performance of bank are taken into consideration and after that the literature related to NFBI and financial performance of banks in and outside India are considered.

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CHAPTER 3

RESEARCH DESIGN

3.1. INTRODUCTION

Research design is a strategic framework which helps in identifying research problems and planning the layout for its execution. It basically acknowledges various inquiries related to finding the answer of a research question (Durrheim,2006).

Non-fund Based Income is gaining significance in the world of banking sectors. The very nature of Non-Fund Based Income in offsetting the uncertainties of interest income is increasing the activities of NBFI in banks in order to improve the financial performance of the banks all over the world. Indian banks have been gradually shifting its focus into NFBI to increase the profitability and in order to mitigate the risk of interest income. The increasing shift of Commercial Banks towards Non-Fund Based Income in improving the financial performance of Banks in order to survive the intense competition among the banks have made this subject an important field of research. This study is focused on investigating the relationship between Non-Fund Based Income and financial performance in Public and Private Sector Banks in India.

The relation between the Non-Fund based Income and Financial Performance is done with the help of panel data analysis for a period of 10 years. The potential analysis was carried on as per the requirement of the study.

3.2 SCOPE OF THE STUDY

The study is conducted to analyse the Non-Fund Based Income and Financial Performance of Scheduled Commercial Banks in India during the Financial Year of 10 years from 2005-06 to 2014-15. The study is confined to public and private sector banks in India and has excluded foreign banks and Regional Rural Banks (RRBs). The analysis is conducted on 45 public and private sector banks where 6 banks were included from SBI and its Associates, Nationalised Banks consists of 20 banks and private sector banks consists of 19 banks.

3.3. OBJECTIVE OF THE STUDY

The present study is undertaken to understand the following objectives:

1. To analyze the proportion of Non-Fund Based Income of Scheduled Commercial Banks in India and determine the trend of share of Non-Fund based Income in Scheduled Commercial Banks over the specified period of study.
2. To make a comparative study of the proportion of non-fund based income of Public sector banks and Private sector banks and explore reasons for significant differences in proportion of non-fund based income.
3. To investigate whether traditional activities has an affect on the level of non-fund based income of the bank.
4. To investigate the influence of NFBI on Return on Asset (ROA), Risk adjusted Return on Asset (RAROA) and Risk adjusted Return on Equity (RAROE).

3.4. HYPOTHESES OF THE STUDY

To address the above issues the study uses the following hypotheses:

H_{01} = Non-fund based income (NFBI) of SCBs is evenly spread over the decade under the study.

H_{02} = There is no significance difference in the proportion of NFBI across Public and Private sector banks in India

H_{03} =NBFI is not significantly affected by the Banking parameters such as size, traditional activities, CAR, operating expenses, bank efficiency and technological development.

$H_{04=}$ There is no effect of NFBI on ROA, RAROA and RAROE.

Similarly, the alternative hypothesis of the study is stated below:

H_{a1} = Non-fund based income (NFBI) of SCBs is unevenly spread over the decade under the study.

H_{a2} = There is a significance difference in the proportion of NFBI across Public and Private sector banks in India

H_{a3} = NBFI is significantly affected by the Banking parameters such as size, traditional activities, CAR, operating expenses, bank efficiency and technological development.

H_{a4}= There is an effect of NBFI on ROA, RAROA and RAROE.

3.5. SOURCES OF DATA

Various data required for the study is mainly extracted from various publication of RBI such as Report on Trend and progress of banking in India, basic statistical return of SCBs and statistical table relating to banks in India and RBI database on Indian economy.

3.6. PERIOD OF THE STUDY

The study of Non-fund based Income of the Public and Private sector banks of India is extended to a period of fifteen years i.e. from 2005-2006 to 2014-2015. Ten years is taken as a sufficient period for social science study however, a longer period could have been better but due to time and resource constraints the study has been confined to a decade.

3.7. DATA STRUCTURE AND SAMPLE SIZE

In order to analyse Non-Fund Based Income and Financial Performance of Scheduled Commercial Banks in India the study has tried to incorporate three major models. The three model is a mixture of studies like (DeYoung & Rice, 2004; Craigwell & Maxwell, 2006; Chirazzo et al, 2008; Pennathur et al., 2012). The first model tries to capture the determinants of NFBI of public and private sector banks and determine the determinants affects the NFBI of the banks. The second model is used to study the influence of NFBI on the ROA and the last model analyses the risk associated with NFBI taking into consideration the variability of bank earning by way of Risk-adjusted ROA and Risk-adjusted ROE written as RAROA and RAROE respectively in the study.

The panel regression analysis will be conducted on 45 cross section units and 10 time units for analysing the determinants of NFBI and its influence on the financial performance of the banks. The detail of the banks studied along with its ownership code used in the panel are presented in table 3.1. Ownership code 1 reflects the list of public sector banks and code 2 represents private sector banks in India.

Table 3.1: List of Public and Private Sector Banks Studied

BANKS	**OWNERSHIP ID**	**BANKS**	**OWNERSHIP ID**
Allahabad Bank	1	Syndicate Bank	1
Andhra Bank	1	UCO Bank	1
United Bank of India	1	Union Bank of India	1
Bank of Baroda	1	Axis Bank	2
Bank of India	1	Catholic Syrian Bank Ltd	2
Bank of Maharashtra	1	City Union Bank Limited	2
Canara Bank	1	DCB Bank Limited	2
Central Bank of India	1	Federal Bank	2
Corporation Bank	1	HDFC Bank	2
Vijaya Bank	1	ICICI Bank	2
Dena Bank	1	IndusInd Bank	2
IDBI Bank Limited	1	Jammu And Kashmir Bank Ltd	2
Indian Bank	1	Karnataka Bank Ltd	2
Indian Overseas Bank	1	Karur Vysya Bank	2
Oriental Bank of Commerce	1	Kotak Mahindra Bank Ltd	2

Punjab And Sind Bank	1	Lakshmi Vilas Bank	2
Punjab National Bank	1	Nainital Bank	2
State Bank of Bikaner and Jaipur	1	RBL	2
State Bank of Hyderabad	1	South Indian Bank	2
State Bank of India	1	Tamilnad Mercantile Bank Ltd	2
State Bank of Mysore	1	The Dhanalakshmi Bank Ltd	2
State Bank of Patiala	1	Yes Bank Ltd.	2
State Bank of Travancore	1		

Source: Compiled from RBI Bank List

3.8. TOOLS AND TECHNIQUES USED FOR DATA ANALYSIS

The study has used different techniques as per the requirement of the objective like trend analysis, correlation matrix, descriptive statistics, Variance Inflation Factor (VIF). The results are also based on panel data regression analysis where tests such as the Hausman Test have been conducted to choose between the Fixed effect Model (FEM) and the Random effect Model (REM).Durbin Watson Stat is also taken into consideration to identify autocorrelation in the model. All the statistical analysis is based on the results obtained from a software package namely STATA 15. A brief description of each of the techniques employed are given below:

3.8.1. ARITHMETIC MEAN

Arithmetic mean is commonly known as an average or mean. It is one of the measures of central tendency. The value of arithmetic mean is obtained by adding all the numerical values of each and every observation and dividing the same with the total

number of observations. Symbolically, Arithmetic mean is denoted by ($\bar{X}$) and the formula to obtain the average is given below:

Arithmetic mean ($\bar{X}$) = $\frac{1}{n}\sum_{i=0}^{n} a_i$

Where, n = Number of observations

a_i=data set values

3.8.2. STANDARD DEVIATION

Standard deviation helps in identifying the dispersion or variability of data from its arithmetic mean. It is defined as the square root of the squared deviations from the mean divided by the total number of squared deviations. A lower value of Standard deviation shows that the data are close to the mean, which is also the expected value of the dataset and a higher value of Standard deviation means that the data is highly dispersed from the average value. It is symbolically denoted as sigma σ . The formula to obtain standard deviation is written as under:

Standard Deviation (σ) = $\sqrt{\frac{\sum(x_i-\bar{X}}{N}}$

Where, x_i = the individual value of the population

N= the size of the population

$\bar{X}$= mean of the population

3.9. PANEL DATA REGRESSION

Panel data regression is a combination of cross section data and time series where the same unit is observed at different times. With panel data the analysis is based on the total observation units of N x T where N-the number of individuals and T relates to time period (Zulfikar & STp, 2019). Panel data can be either balanced or unbalanced. The balanced panel refers to the data where same unit time is observed for each individual whereas in unbalanced panel data number of time units is different for each individual.

There are several benefits of using panel data regression as panel data enables to control individual heterogeneity, provides more informative data, less collinearity among the variables, enables to identify and measure affects which are not detected in a cross section or time series data (Baltagi, 2008). Given its benefits the study has used panel data regression model to analyse the Non-Fund Based Income and Financial Performance of SCBs in India. Panel data based regression technique is used to find the casualties between return and diversification into Non-Fund based Income. Hausman test is applied to choose between Fixed effect Model (FEM) or Random effect model (REM). FEM and REM is chosen over pooled OLS since FEM/REM is able to capture the outcome efficiently when same sample are observed over the years/individuals.

3.9.1. Fixed effect Model: In statistics, a fixed effects model is a statistical model that represents the observed quantities in terms of explanatory variables that are treated as if the qualities were non-random. The equation for the fixed effects model will be**:**

$$Y_{it} = \alpha_i + \beta_1 X_{it} + u_{it}$$

Where, α_i (i=1….n) is the unknown intercept for each entity (n entity-specific intercepts).

Y_{it} is the dependent variable (DV) where i= entity and t = time.

Xit represents one independent variable,

$\beta_1$is the coefficient for that Independent Variable,

u_{it} is the error term.

3.9.2. Random effect Model

In statistics, a random effect model, also called variance components model, is a kind of hierarchical linear model. It assumes that the dataset being analysed consists of a hierarchy of different population whose differences relate to that hierarchy. Here either all or some of the explanatory variables are treated as if they arise from random causes.

The random effects model is:

$$\boldsymbol{Y_{it} = \alpha + \beta X_{it} + u_{it} + \varepsilon_{it}}$$

Where,ε_{it}= within entity error

Wu- Hausman test equation is

$$H=(b_1-b_0)' (Var (b_0)-Var (b_1))^{+} (b_1-b_0)$$

Where $^{+}$ denotes the Moore-Penrose pseudo inverse. Under the null hypothesis, this statistic has asymptotically the chi-squared distribution with the number of degrees of freedom equal to the rank of matrix $Var(b_0)$-$Var(b_1)$

Lastly, Hausman specification test which is decisive in this case is applied to validate the hypothesis.

The Hausman test for this correlation is a comparison of the coefficient of the covariance matrix of the regressors of the pooled least square with those of random effect model obtained through GLS. The null (Ho) and the alternative hypothesis (H_1) are as follows:

Ho= if εi and X's are uncorrelated, then REM is more appropriate.

H_1 = if εi and X's are correlated then FEM is more appropriate.

Then the appropriate model will be chosen to come to an appropriate conclusion. In simple words if the p-value of the Hausman tests is more than 5% then we have to choose REM.

3.10. EMPIRICAL MODEL

Several evidences indicate that NFBI and financial performance are inter-related. The econometric model recognizes these inter-relationships. Main dependent variables used in the study are RNFTA, ROA, RAROA and RAROE. The explanatory variables are similar in all the equation with a slight change in one variable therefore the variables used in the study are explained together. The independent variables used in each equation slightly vary. The variables used in the study are briefly discussed below:

3.10.1 Variables Used

Non-Fund Based Income To Total Asset: Non-fund based income to total asset is used as one of the dependent variable in one of the model. It is used to understand the affect of various bank factors like bank characteristics, technological advancement, bank strategy, bank size and bank environment on the level of Non-fund based income of the banks. In order to capture this relationship the ratio of non-interest income to total asset is taken into consideration. It is obtained by dividing non-interest income to total asset and multiplying the same with 100.

Return on Equity (ROE): ROE is used to understand the bank efficiency and studies suggest that well managed banks tend to generate lower non-fund based income (Pennathur et al., 2012). Hence a negative relationship is expected between ROE and non-fund based income of the banks. This variable is used in the first model as a determinant of RNFTA.

Core Ratio: The study has used the ratio of demand and savings bank deposit to total deposit as the core ratio depicting the importance of traditional activities of the banks (DeYoung & Rice, 2004). This ratio defines the involvement of banks in traditional business on the financial performance and enquires its relationship with the non-traditional activities of the banks. This variable is used in all the four equation as an important aspect to capture the traditional activities of the banks.

Ratio of Secured Deposit to Total Deposit: The study has used secured loans to total deposit to capture the traditional aspect of the business (DeYoung and Rice, 2004). The ratio of the same is obtained by dividing the secured deposit by the total deposit.

This variable is considered in RAROE to capture the affect of secured deposit on RAROE

Loan Quality: The study has undertaken the ratio of non-performing asset to total advances to determine the loan quality of banks. Studies suggest that as loan quality decreases banks tends to drift towards non-fund based income (non-interest income) from interest income. This variable is used in all the equation to understand the affect of loan quality on dependent variables.

Ratio of Loan to Asset: This ratio captures the strategic response of the bank. The better ratio of loan to asset means a bank is strategically sound. The ratio is obtained by considering the total loan and asset of individual bank spread over the years. This variable is used in all the equation to capture the lending strategy.

Ratio of Priority Sector Advance to total Advance: This variable is used to understand the relationship in RNFTA, ROA, RAROA and RAROE. Studies reveal that the banks focusing on priority lending tends to generate less NFBI (Pennathur et al., 2012)

Ratio of Interest Income to total Asset: RINTA is used as an indicator to determine the affect on the NFBI and it is used as a determinant of RNFTA in the first equation (Pennathur et al., 2012). The study expects a positive relationship between interest income and non-fund based income.

Capital Adequacy Ratio (CAR): It is known as the level of capital maintained by the bank to facilitate the creation of more liquidity in the banks. Studies reveal that the banks with efficient liquidity tend to venture into NFBI.

Operating Expense to Total Asset : It consists of expenses incurred by the banks on meeting the day to day activities, administrative expenses ,operation of its branches, etc overhead is termed as an important aspect of determining the ROA(Sharma et al.,2013) and it is associated with NFBI as shifting into NFBI includes incurring expenses as technologies set up is required to meet the modern needs of the customer that is why the study wants to find a relationship between operating expenses and RNFTA .

Bank Size: The size of the bank is calculated with the help of natural log of bank asset This variable is used in almost all the literature to find out the affect of bank size on the ratio of non-fund based income and financial performance of the bank (Hidayat et al., 2012; DeYoung & Rice, 2004; Craigwell & Maxwell, 2006; Chirazzo et al, 2008).

ATM: ATM is captured by the dummy variable on the basis of the onsite and offsite number of transaction. Dummy value of 1 is assigned to the banks which have conducted onsite and offsite transaction in the respective period otherwise 0 is assigned. This dummy helps in capturing the technological change of the banks. As the banks which are technically sound motivates cashless transaction and finally helps in rising the non-fund based income.

3.10.2 Determinants of NFBI

The first equation in the model attempts to identify the determinants of NFBI. Various factors like bank characteristics, loan strategy, and technological developments are closely studied to analyse the contribution of each factor in the improvement of Non-Fund Based Income of public and private sector banks:

$$RNFTA_{i,t} = \alpha + \beta_1 ROE_{i,t} + \beta_2 SBDTD_{i,t} + \beta_3 RNPA_{i,t} + \beta_4 RPRTA_{i,t} + \beta_5 RINTA_{i,t} + \beta_6 CAR_{i,t} + \beta_7 OEXTA_{iti,t} + \beta_8 LNTA_{i,t} + \beta_9 RLTA_{i,t} + \beta_{10} PVTBANK_{i,t} + \beta_{11} DATM_{i,t} + \beta_{12} TIME_t + u_i + \varepsilon_{i,t}$$

Where,

Dependent variable- RNFTA (Ratio of Non-interest income to Total Asset)

Independent variable-

- ROE – Return on Equity (Pennathur et al.,2012)
- SBDTD- Ratio of Demand and savings Deposit to total deposit
- RNPA- Ratio of Non-performing Asset to total advances
- RPRTA- Ratio of priority sector advances to total advances
- RINTA- Ratio of interest income to total asset
- CAR- Capital Adequacy Ratio
- OEXTA- Operating Expenses To Total Asset
- LNTA- Bank Size(Natural Log To Total Asset)
- RLTA- Ratio of Loan to Total Asset

Time fixed effect is utilised to capture the time affect on the regression model

Dummy variable used to capture the ownership and technology (ATM)

- DPVT- dummy variable of private sector bank
- DATM- dummy variable of establishment and usage of ATM

3.10.3 NFBI and Financial Performance

Several literature have used Return on Asset (ROA) as the indicator of financial performance as per the usage the study has used ROA**.** Further the study have utilised Risk-adjusted Return on Asset (RAROA) and utilised Risk-adjusted Return on Equity (RAROE) to understand the risk involved in venturing into NFBI of the banks. The analyses of NFBI on financial performance and variability differs in literatures such as (Chiorazzo et al.,2008; DeYoung & Rice,2004).

Return on Asset (ROA)

$$ROA_{i,t} = \alpha + \beta_1 RNFTA_{i,t} + \beta_2 SBDTD_{i,t} + \beta_3 RNPA_{i,t} + \beta_4 RPRTA_{i,t} + \beta_5 CAR_{i,t} + \beta_6 OEXTA_{it\ i,t} + \beta_7 LNTA_{i,t} + \beta_8 RLTA_{i,t} + \beta_9 TIME_t + u_i + \varepsilon_{i,t}$$

Dependent variable- ROA (Return on Asset)

Independent variable-

- RNFTA- Ratio of non-interest income to total asset
- RNPA- Ratio of Non-performing Asset to total advances
- SBDTD- Ratio of Demand and savings Deposit to total deposit
- RPRTA- Ratio of priority sector advances to total advances
- CAR- Capital Adequacy Ratio
- OEXTA- Operating Expenses To Total Asset
- LNTA- Bank Size(Natural Log To Total Asset)
- RLTA- Ratio of Loan to Total Asset

Time fixed effect is utilised to capture the time affect on the regression model

Risk-adjusted Return on Asset (RAROA)

$$RAROA_{i,t} = \alpha + \beta_1 RNPA_{i,t} + \beta_2 RNFTA_{i,t} + \beta_3 CAR_{i,t} + \beta_4 OEXTA_{i,t} + \beta_5 LNTA_{i,t} + \beta_6 RLTA_{i,t} + \beta_7 SBDTD_{it\,i,t} + \beta_8 RPRTA_{i,t} + \beta_9 TIME_t + u_i + \varepsilon_{i,t}$$

Dependent variable- RAROA (Risk-adjusted Return on Asset)

Independent variable-

- RNFTA- Ratio of non-interest income to total asset
- RNPA- Ratio of Non-performing Asset to total advances
- SBDTD- Ratio of Demand and savings Deposit to total deposit
- RPRTA- Ratio of priority sector advances to total advances
- CAR- Capital Adequacy Ratio
- OEXTA- Operating Expenses To Total Asset
- LNTA- Bank Size(Natural Log To Total Asset)
- RLTA- Ratio of Loan to Total Asset

Time fixed effect is utilised to capture the time affect on the regression model

Risk-adjusted Return on Equity (RAROE)

$$RAROE_{i,t} = \alpha + \beta_1 RNPA_{i,t} + \beta_2 RNFTA_{i,t} + \beta_3 CAR_{i,t} + \beta_4 OEXTA_{i,t} + \beta_5 LNTA_{i,t} + \beta_6 RLTA_{i,t} + \beta_7 RSATA_{it\,i,t} + \beta_8 RPRTA_{i,t} + \beta_9 LRAROE_{i,t-1} + \beta_{10} TIME_{i,t} + u_i + \varepsilon_{i,t}$$

Dependent variable- - RAROE (Risk-adjusted Return on Equity

Independent variable-

- RNFTA- Ratio of non-interest income to total asset
- RNPA- Ratio of Non-performing Asset to total advances

- RSATA- Ratio of Secured advances to total advances
- RPRTA- Ratio of priority sector advances to total advances
- CAR- Capital Adequacy Ratio
- OEXTA- Operating Expenses To Total Asset
- LNTA- Bank Size(Natural Log To Total Asset)
- RLTA- Ratio of Loan to Total Asset
- LRAROE- One period lag of RAROE

Time fixed effect is utilised to capture the time affect on the regression model

Risk adjusted return on asset or risk adjusted return on equity is calculated taking into consideration the standard deviation of bank performance to validate volatility of return. We have taken Sharpe ratios or risk adjusted return or RAROA, RAROE like in the studies of (Stiroh, 2004; Chiorrazo, 2008).The formula is as follows:

$$RAROA = ROA_{i,t}/\sigma ROA_i$$

$$RAROE = ROE_{i,t}/\sigma ROE_i$$

Here RAROA refers to risk adjusted return on asset, RAROE refers to risk adjusted return on equity, i for bank and t for time

3.11 CONCLUSION

This chapter consists of the blueprint of the study which includes entire process of how the research was conducted. The chapter defines the scope, objectives, hypothesis of the study and tools and techniques used in the study. It further includes the description of sources of data, period of study, data structure and sample size,

variables used in the study and model specification. In the next chapter theoretical background of the study has been discussed.

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CHAPTER 4

THEORETICAL BACKGROUND OF THE STUDY

4.1. INTRODUCTION

Banks play an essential role in the economic development of the country by mobilising the savings in an affective manner to reach out to the ones who needs it. Banks help in capital formation by affectively creating a balance between surplus and necessity of funds. The success of banking sectors will imply an up gradation of various other sectors in an economy (Saini & Sindhu, 2014). Being the backbone of an economy, it is very important that the banking sector runs affectively and efficiently.

Before 1990 the Indian Financial system was unstable and lacked proper regulation. With rigid interest rates, controlled resources, extensive regulation on flow of funds and strong entry barriers highly hampered the banking business and led to inefficiency, loss of competition and decrease in the profitability of the banks in India. In order to improve the financial health of an economy various reforms were initiated in the banking sector after the recommendation from Narasimham committee. Indian Banks were exposed to better reforms after 1991. The reforms introduced in 1991 and 1998 helped the banks to flourish, strive for its place and grow as it was mainly focussed on bringing potential competition and a liberalised banking environment (Mohan, 2005).

After the financial reforms in India, Scheduled Commercial Banks have witnessed a sea change in the operation, profitability, involvement and ownership of the banks. The introduction of various reforms in the financial sectors has changed the way in

which the banks operate. Various changes like Technological advancement, higher participation of foreign and private banks, deregulation of interest rates, etc has increased the competition and in order to survive the banks in India have been thriving and finding ways to improve their performance. It is witnessed that non-fund-based activities consume very fewer amount of capital than fund-based income which purely depends on interest rates,

The primary function of banks is to accept deposit and grant loans but now the banks have been trying to mitigate the risk of changing interest rates by diversifying into fee-based activities or Non-Fund Based Activities. Indian banks in search of stable profit have been diversifying into non-fund-based income. Though the proportion of non-fund-based income is less when compared to interest income, it is found that commission, brokerage and trading income has the higher contribution to the profitability of the banks than other sources of non-fund-based income (Gadaboina, 2016). The Indian banks should diversify its income sources as it helps in increasing the profitability of the banks (S & S, 2020). The trend and progress report of Banking 2002-2003 stated that the performance of public sector banks can be improved with its involvement in non-interest income and its capability of managing operating expenses**.**

The increasing need of diversifying into non fund based to offset the losses from traditional activities have changed the relationship between non-fund-based income and its affect on the financial performance the way in which the banks perform its activities. The importance of understanding of the relationship between the Non-Fund Based Income and financial performance of banks forms an essential part in the research. This Chapter has considered an overview of the banks in India, banking

reforms, role of RBI, concept of income, measures of financial performance. The basic concept useful in the research is discussed briefly as under.

4.2. OUTLOOK OF THE EVOLUTION OF THE BANKING SECTOR IN INDIA

According to the Banking Regulation Act ,1949 "banking" means accepting, for the purpose of lending or investment, of deposit of money from the public, repayable on demand or otherwise, and withdrawal by cheque, draft, order or otherwise. In other words, Banking means accepting deposits and granting the same in the form of loan to the public or investing the same. The amount accepted in the form of deposit can be withdrawn on demand or through cheques, drafts, etc.

The history of banking in India dates to the Vedic period from 2000 BC to 1400 BC associated with money lending activities. Banking in India has come a long way from acting merely as a reservoir of funds, issuer of currency to acting as a financial institution which serves its customer as per their needs. The history of banking can be brought into the light by going through the different phases of banking in India (Sarabu, 2017). To make it more appropriate Indian banking sector is divided into three important phases, and they are stated as under:

4.2.1. Initial phase (1786-1969)-Before independence to nationalisation of RBI.

4.2.2. Phase II (1969-1991)-Nationalisation of Banks.

4.2.3. Phase III (1991-till date)-Introduction and execution of Banking Reforms.

These are elucidated as below:

4.2.1. Initial Phase (1786-1969)-Before independence to nationalisation of RBI

The origin of banking in India dates back to the end of the 18th century. At the beginning, Bank of Bombay in the year 1720 followed by Bank of Hindustan in 1770. Both of these banks along with agency houses dissolved in 1932. After this, three presidency banks namely, Bank of Bengal established in 1806, Bank of Bombay set up in 1840 and Bank of Madras set up in 1843. The Presidency Banks acted as a central bank and was involved in issuing currency notes until the enactment of paper currency Act 1861. All the three Presidency Banks were merged and called Imperial Bank in the year 1921. The Imperial bank was later converted into the State Bank of India in 1955. Before 1955, Imperial bank was performing a variety of functions at a time as a commercial bank, central bank before the introduction of the Reserve Bank of India (RBI).

The introduction of limited liability in 1860 witnessed an increase in the numbers of private and foreign banks in India (Banerjee et al., 2004). In the year 1865 Allahabad bank was established in Allahabad, Punjab National Bank was started in 1895 in Lahore and lastly Bank of India was started up in Mumbai in the year 1906. The three banks discussed above were the privately owned banks set up in the country. The time frame between 1906-1911 is known for an increase in new banks in the market due to the Swadeshi Movement. Banks like Bank of India, Central Bank of India, Corporation Bank, Indian Bank, Bank of Baroda and Canara Bank were set up due to the Swadeshi Movement as it highly encouraged the entrepreneurs and politicians to start banking business for the public which led to establishment of many private banks (Gajdhane, 2012).

After independence, the status of the banking sector in India was purely urban oriented and the rural areas were neglected as agricultural activities were not considered vital towards economic development. Right after the independence banking sector in India mainly consisted of Private Sector Banks. Banking sector in India seriously needed proper regulation and management. Under the recommendation of the Hilton Young Commission Reserve Bank of India was set up on 1st April 1935 following the Reserve Bank of India Act, 1934. The RBI was established to regulate the Indian Banking Sector. The major development that took place in Indian Banking Sector before 1969 and after Independence was Nationalization of Reserve Bank of India in 1949, enactment of Banking Regulation Act 1949, nationalization of SBI and its Subsidiaries and nationalization of SBI through State Bank of India Act in the year 1955.

4.2.2. Phase II (1969-1991) -Nationalisation of Banks

After 1969, the Banking Sector in India was still plagued with unequal distribution of funds as the funds were channelized in excess in urban areas as most of the banks were situated in urban and there was no product available which would ease the financial needs of the agriculture sector and rural areas. In the second phase of banking sector development the main focus of the regulators was to reach out the financial need in rural and semi-urban areas, narrow regional disparity of economic activity and to promote equal distribution of funds in the best possible way. Nationalization of banks came as a major answer to the pertaining problem of the banking sector in India. With this objective in mind 14 major commercial banks with deposits exceeding 50crore were nationalized on 19th of July 1969 as per the Banking Companies (acquisition and Transfer of Undertaking) Ordinance, 1969. The 14 banks

that were nationalized are Bank of India, Allahabad bank, Bank of Maharashtra, Dena Bank, Union Bank, United Bank of India, Indian Bank, Bank of Baroda, Central Bank of India, Canara Bank, Indian Overseas bank, Punjab National Bank, UCO Bank and Syndicate Bank. Regional Rural Banks (RRBs) were established on 2nd Oct 1975. Again, in the year 1980, 6 banks were nationalized making the total number of nationalized banks into 20. The 6 banks that were nationalized include Corporate Bank, Andhra Bank, Punjab and Sind Bank, Vijay Bank, Oriental Bank of India and New Bank of India. But in the year 1993 the government merged New Bank of India with Punjab National Bank. Therefore, the total number of nationalized banks were reduced to 19 banks.

4.2.3. Phase III (1991-till date) - Introduction and execution of Banking Reforms

After independence in 1947 India followed socialist approach which highly affected the functioning of the Indian Financial System. The rise in rigidity in policies and excessive restrictions hampered the growth and development of the banking sector. The crisis was unmanageable with adverse Balance of Payment. The Indian economy in the year 1990 was in trouble and required an immediate remedy. In 1991 Indian Financial system took the route of an open economy by freeing the restriction on private and foreign banks and reshaping the role of government (Ahluwalia,2002). In order to improve the status of the banking sector two committees led by M. Narshimham as its chairman was set up by the Government of India (GOI). The first committee submitted its report in 1991 and the second committee submitted its report in 1998 and the recommendations made by the Narshimham committee were immediately accepted and imposed by the Government of India. The reports clearly stated that the public ownership was not solely responsible for the crisis rather

excessive political interference and rigid policies is the main reason for the instability in banking business (Bery,1994). The recommendations made by the committee was focussed on strengthening, initiating competition and promoting growth and development of the banking sector in India. The main objective of the recommendations was to increase the soundness and efficiency of the banking sector in India by improving the stability, affective allocation of funds and reliability of the financial institutions (Gopinath,2007) The recommendations made by the Narshimham committee as discussed as under:

1. Deregulation of interest rates on time deposit and lending rates however the interest on savings is still regulated by the RBI.
2. Reduction in Cash Reserve Ratio and Statutory Liquidity Ratio.
3. In order to encourage the establishment of new private and foreign banks licensing process were made easier as it helps in increasing the efficiency, profitability and technological up gradation.
4. In order to improve the financial status of the banks prudential norms were introduced such as income recognition, asset classification and Capital Adequacy Ratio (CAR).
5. In order to understand the financial status of the banks, the committee recommended transparency in the financial statement of the banks.
6. Certain other important reforms were introduced such as Restructuring of the banking sector was initiated in the form of mergers and acquisition to improve the productivity and profitability of the banks, improving customer services, technological development by initiating computer mode of worker-organisation of branches of banks, penetration of banking services in rural and semi-urban areas, etc (Kalyan, 2017).

At present, the Indian Banking sector has come a long way with higher levels of transparency and competition. The banks in India can reach out to the weaker section of the society. The banking business has been witnessing various updated reforms as per the requirement of the society like introduction and implementation of corporate governance, strengthening of capital base as per norms, launching of Jan-Dhan, Aadhar and mobile (JAM). The banks so far have been able to extend credit to small farmers enabling affective outreach to the rural areas. The introduction of various technological initiatives as mobile banking, (ATM), credit card facilities, Electronic Payment Services (EPS)etc. has brought revolution in the banking activities and succeeded in improving the profitability of the banks. The bank has witnessed many mergers of banks to increase the efficiency and efficacy of the banking sector.

4.3. RESERVE BANK OF INDIA

The need of a regulatory body namely Reserve Bank of India came into light with the recommendation from Royal Commission on Indian Currency and Finance popularly known as Hilton Young Commission in 1926. Following the recommendation, the Reserve Bank of India was set up on 1st April 1935 with a paid-up capital of Rs 5crore, in accordance with the Reserve Bank of India Act, 1934. At first, RBI was privately owned but it was later nationalised in 1949 by way of the Reserve Bank (Transfer of Public Ownership) Act, 1948.The preamble to the RBI Act, 1934, defines its objective as "to regulate the issue of Bank notes and keeping of reserves with a view to securing monetary stability in India and generally to operate the currency any credit system of its advantage" (Bansal,2017). The activities of RBI are controlled and regulated by the Central Board of Director. The board consists of the Governor, four Deputy Governors, ten Directors and two government officials. The Governor and

Deputy Governor hold office for the period of five years and the directors are appointed for a period of four years. The main role of Reserve Bank of India is stated below:

1. Issuer of currency: After the establishment of the Reserve Bank of India in 1935 it undertook the function of issue of currency from the controller of currency is entrusted with the function of issuing the bank notes. The Reserve Bank of India works together with the Government of India for the currency design, production and affective management of currency in India.
2. Monetary Management: It is one of the important functions of the Reserve Bank of India. Under this, RBI is focussed on formulating and regulating the money supply in the country with the help of various monetary instruments like Cash Reserve Ratio (CRR) Statutory Liquidity Ratio (SLR) Open Market Operation (OMO) and Liquidity Adjustment Facility (LAF). The aim of RBI under monetary management is to attain price stability, proper flow of funds in the required sector and financial stability.
3. Banker and debt manager to the Government: The central bank of India acts as a banker and debt manager to the Government by making payment, managing public debt and issuing fresh loans and exhibiting other banking services on behalf of central and state governments.
4. Banker to the Banks: Banks also require a system which enables them to transfer their funds, borrow and lend funds among other banks, this inter-bank function is performed by the Reserve Bank of India. The RBI helps in conducting interbank activities in an affective manner. It also helps banks to maintain an account in RBI for the purpose of statutory reserve requirement.

The Reserve Bank of India extends credit facilities to the banks who are unable to generate credit from other banks. The RBI acts as a lender of last resort to the banks which are solvent but having trouble in being financially stable in the market. This role is initiated by the RBI in order to protect the interest of the depositors and help the bank to overcome the uncertainty and the problem of insufficient funds. By acting as a lender of last resort, The RBI altogether maintains the liquidity position of the bank and financial stability in the market.

5. Financial Regulation and Supervision: The function of financial regulation and supervision of the banks in India is conducted by the Reserve Bank of India. The regulation and supervisory function help in protecting the interest of the depositors, ensure financial stability and maintain an affective environment for banking. The RBI performs its regulation function by keeping a check on the requirements of licensing process, corporate governance, risk management, disclosure norms, Know Your Customer (KYC) norms

   Interest rates, prudential norms i.e., Capital Adequacy Ratio(CAR) maintaining the quality of loans by way of classifying the loan as performing or Non-Performing Asset (NPA) etc.

   The supervisory function performed by the Reserve Bank of India refers to onsite inspection of the bank conducted annually to investigate the financial health of the banks and banks are expected to submit detailed information in a particular structure as a part of offsite surveillance and monitoring system (OSMOS). In this many ways the Reserve Bank of India performs regulatory and supervisory function.

6. Regulation and Management of Foreign exchange: The Reserve Bank of India is entrusted with the role of regulating and managing the foreign exchange by way of stabilizing, maintaining, prohibiting and restricting foreign exchange market by executing this function, the Reserve Bank of India tries to ensure safety, liquidity, stability and affective return from the foreign exchange. It further tries to maintain sufficient reserve to meet the payment obligation.

4.4 BANKING REGULATION ACT 1949

The Act came into existence on 16 March 1949 as the Banking Companies Act, 1949 which was later renamed as The Banking Regulation Act, 1949 on 1 March 1966. At first the Act regulated only commercial banks but after its amendment in the year 1965 the act started to regulate cooperative banks. The main objective of the establishment of Banking Regulation Act, 1949 is to ensure the smooth functioning and strengthening of the banking system. The Act covers various issues under its purview like licensing, definition of banking, requirement of capital and reserve to be kept by the banks, management structure, mergers and acquisition, protecting, profitability related affairs, etc.

The Banking Regulation Act has given various powers to the Reserve Bank of India like regulating the licensing of banks, credit control, look after the appointment of board of directors and management personnel, state the guide for audit, instruction on mergers and acquisitions, circulation of regulation for the benefit of the public, serving of circulation on bank policy, initiate liquidity in the economy, etc.

4.5 AN OVERVIEW OF FINANCIAL SYSTEM IN INDIA

Financial system may be defined as the combination of financial institution, financial market, financial instrument and financial services which enables affective allocation of funds (Pathak,2014). The financial system plays a very important role towards economic development of the country by affectively and efficiently allocating the resources from the ones who wants to deposit and to the ones who needs.

The Financial system in India consists of an organized and unorganized financial system. The organized financial systems are regulated by the Reserve Bank of India, Ministry of Finance and other regulatory bodies. Organized Financial system consists of financial Institution, financial market, financial services and financial instruments whereas unorganized financial system consists of money lenders, local bankers, pawn brokers, etc (Bharti, 2018)

The organised sector of financial system is discussed briefly as under:

4.5.1 Financial Institution

Financial Institutions act as an intermediary between the savers and the borrowers ensuring a flow of funds in the market. An important function of financial institutions is to enable transfer of funds from public to industrial houses (Rao and Mishra, 2007). It can be further classified into banking and non-banking financial institutions. Banking institutions are Scheduled Commercial Banks and Scheduled Cooperative Banks. Non-banking financial institutions consist of non-banking finance companies and Development finance institutions. Development finance institutions includes: Industrial Development Bank of India(IDBI)Industrial Finance Corporation of India (IFCI)Small Industries Bank of India (SIDBI)Infrastructure Development Finance

Corporation (IDFC) National Bank for Agriculture and Rural Development (NABARD) Export and Import Bank (EXIM bank) National Housing Bank (NHB) State Finance Corporation(SFCs)State Industrial Development Corporation (SIDCs)Export Credit Guarantee Corporation of India(ECGC) Deposit Insurance and Credit Guarantee Corporation (DICGC).

From above classification it is understandable that the Banking Institutions in India are classified into Scheduled Commercial Banks and Scheduled Cooperative Banks. Out of which about 90% of the bank's asset belongs to Scheduled commercial banks (Singh, 2016). The definition and its components are briefly discussed as under:

4.5.1.1 Scheduled Commercial Banks (SCBs)

Scheduled Commercial Banks (SCBs) can be defined as those banks which are included in the second schedule of the Reserve Bank of India Act, 1934.the banks are included in the list of Schedule if the banks fall in the criteria set u/s 42(6)(a) of the Reserve Bank of India Act, 1934. SCBs accepts deposits, grants loan and conducts other banking activities. Scheduled Commercial banks are operating in most of the parts of the country and helps in improving the economic and social transformation (Latha & Shanmugam,2015) SCBs consists of different banks operating in India namely Public Sector Banks (PSBs) Private Sector Banks, Foreign Banks and Regional Rural Banks (RRBs). During 2017-2018, the banking sector witnessed an improvement in deposit and lending rates. The benefit of improved lending rate remains unattended by the banks due to deteriorating asset quality and risk associated with lending activity. The credit provided by the banks were higher than the previous year (2016-2017) figure. Private sector banks saw a rise in industrial loans and personal loans. The credit capacity of Public Sector banks was restrained with the

provision of capital requirement and rise in loan delinquency. During the financial year 2017-18 the SCBs observed lower interest income and the profit from non-interest income also declined due to various provisions. But the interest income was backed up by low interest expenditure which helped in improving the figure of interest income.

4.5.1.1.1 Public Sector Banks

Public Sector Banks (PSBs) can be defined as the banks where the majority of the shares (i.e., more than 50%) are held by the Government. The public sector in India was started in India with the nationalisation of Imperial Bank of India as State Bank of India in the year 1955. Nationalisation of banks has helped in reaching out the financial needs of the people equally. The deposit and financial assistance provided by the government has multiplied since the nationalisation and major roles in increasing the financial services are played by public sector banks in India (Gandhi, 2015). According to the trend and progress report PSBs incurred a loss of Rs 854 billion between 2017-18. The ROA and ROE of the SCB declined during 2017-18, where PSBs witnessed a drastic decrease in ROE.

4.5.1.1.2 Private Sector Banks

The shares of Private Sector Banks are held by individuals, institutions or corporates rather than the Government. After liberalisation, the operation of private sector banks drastically increased as various reforms were initiated to encourage the establishments of Private Banks in India. The major changes that occurred in the ownership of the banking sector is nationalisation of banks in India in the year 1969 and 1980 however, not all the banks were nationalized in the above-mentioned years. The banks which were not nationalized and operating were termed as Old Private sector banks.

Several new banks started operating in India after the introduction of banking reforms in India. Since the reforms eased the process of licensing. The private banks established after 1991 are termed as New Private Sector Banks. The New Private Sector Banks in India have succeeded in establishing a competitive environment to sustain the changing banking needs. It lays an upper hand over Public Sector Banks and Old Private Sector Banks in terms of technological efficiency, introduction of innovative products, and affective customised services. During the period 2017-18 it was observed that the performance of Private sector banks was better than public sector banks and foreign banks in terms of ROE.

4.5.1.1.3 Foreign Banks

The banks which are incorporated outside India and operate in India through its branches are known as Foreign Banks. It mainly operates through branches or wholly owned subsidiaries. It is bound to follow the rules and regulations of both home and host countries. Foreign Banks play a crucial role in the development of the Indian Banking sector. Foreign Banks help in enhancing the performance of domestic banks and increasing competition which further helps in reducing costs (Classens et al. 1998). Foreign banks have a competitive advantage of technological advancement over domestic banks in India. Hongkong Shanghai Banking Corporation Ltd (HSBC) was the first to establish Automated Teller Machine ((ATM)) in the country.

After 1990, the performance of foreign banks improved and was better than public sector banks due to its innovative products and services such as integrated cash management, internet banking, phone banking, forex and interest rates trading. Know your customer (KYC) etc. The innovative products and services have helped foreign banks to improve their profitability and earn a higher share of fee-based income. The

number of foreign banks operating in India has remained stable, but the number of branches has declined. During the year 2017-18 foreign banks have succeeded in maintaining the highest Liquidity coverage ratio compared to Private and Public sector banks in India.

4.5.1.1.4 Regional Rural Banks (RRBs)

Regional Rural Bank was established on 2nd October 1975 in accordance with the ordinance passed on 26 September 1975 and the Regional Rural Bank (RRB) Act 1987. RRBs are regulated by the Reserve Bank of India and managed by the National Bank for Agriculture and Rural Development (NABARD). The main objective of setting up RRBs is to provide financial assistance to the backward sections of rural areas in the country. RRBs are an important part of Scheduled Commercial Banks which look after the financial needs of rural and semi urban areas by providing financial services to farmers, local artisans, Micro, Small and Medium Enterprise (MSMEs) industries, trade and commerce. It further provides different services to its customers like locker facilities, debit and credit card, internet banking, mobile banking, etc. The operation of RRB has helped in developing agricultural and rural India. RRBs have witnessed a steady growth in deposit and outstanding advances during the period 2007 to 2018 (Agarwal & Reddy, 2019). According to the 'Trend and Progress of Banking in India 20017-18' RRBs reported a decrease in deposit rate while witnessing an improvement in loans and advances. During 2017-18, 90% of the loan dispersed by RRBs consisted of priority sector loans where RRBs succeeded in disbursement of loan to agriculture sector at 76.1% and 14% to micro, small and medium enterprises.

4.5.1.1.5 Cooperative Banks

Cooperative Banks play an important role in the development of the Indian Financial System by reaching out to the rural areas affectively and efficiently. Cooperative banks are financial entities which provide a variety of financial services to the rural population in the field of agriculture, dairy, livestock, personal finance, and for starting up small scale units. It accepts deposits and grants loans to both its members and non-members.it is mainly established on cooperative basis and performs banking activities. Cooperative Banks may be broadly categorised into Urban Cooperative Banks (UCBs) and Rural Cooperative Banks. At the end of March 2018, the total number of UCBs accounted for 1,551 and Rural Cooperative Banks consisted of 96,612 at the end of March 2017. UCBs provides financial assistance at reduced rates in urban and semi urban areas whereas Rural Cooperative Banks deliver credit facilities in villages and small towns. The growth of Cooperative Banks stands at 11% of the total assets of Scheduled commercial banks in India.

According to the report of Trend and Progress of Banking in India, the interest income and noninterest income of UCBs declined whereas the loans and advances increased during 2017-18. The reduction in interest expenditure however led to an increase in net interest income for both Scheduled and Non-scheduled Urban cooperative banks.

On the other hand, Rural cooperatives can broadly be classified into short term and long-term institutions. The short-term institutions consist of State cooperatives (St CBs) District Central Cooperative Banks (DCCBs) and Primary Agricultural Credit Societies (PACS). These institutions have been providing short term credit in the form of crop and working capital loans. The long term cooperative consists of State

Cooperative Agriculture and Rural Development (SCARDBs) and Primary Cooperative Agriculture and Rural Development Banks (SCARDBs). These two cooperatives grant medium- and long-term loans to the farmers and rural industries. According to the Trend and Progress report, during 2017-18 short term credit cooperatives held 94.3% of the total asset of rural cooperatives whereas the activities of long-term cooperatives has declined over the years.

4.5.2 Financial Market

Financial market can be defined as the place where the financial assets are traded. The market enables setting up the price of the financial asset as per the demand of the asset (Pathak, 2010). The financial market is classified into two broad categories i,e. Money market and capital market. In the money market short term securities are bought and sold whereas capital markets deal with long term securities having a maturity period of more than a year.

4.5.3 Financial services

There are different kinds of financial services provided by banking institutions and non-banking financial corporations (NBFCs). There are different financial services that are rendered which includes lending, funding, managing portfolios, lease financing, hire purchase and consumer credit, insurance services, venture capital, merchant banking, stock broking, etc,

4.5.4 Financial Instruments

It can be defined as the product in the form of debenture, commercial paper, shares, mutual fund units, time deposit that is traded in the financial market by the financial institutions. The financial instruments vary as per the term of the instrument namely

short term, medium term and long term. A number of instruments are traded in the organised market and the instruments traded have the benefit of mixing different kinds of financial instruments as portfolios in order to mitigate the risk of securities and increase profitability. It should be noted that financial instruments vary with liquidity, risk, return, terms, etc.

4.6. FUNCTIONS OF COMMERCIAL BANKS IN INDIA

According to the Reserve Bank of India, "Commercial Banks refers to both Scheduled and non-scheduled commercial banks which are regulated under Banking Regulation Act, 1949." Commercial Banks (CBs) are profit oriented banks who are engaged in acceptance of deposits and granting of loans to the public, government and business houses. Commercial banks play a very important role in the economy by creating capital, extending credit facilities and generating adequate liquidity in the economy. The main functions exhibited by commercial banks are categorised as Primary function and secondary function. They are discussed as under:

4.6.1. Primary Function

The primary function exercised by the commercial bank is Accepting of deposit and advancing of loans. The primary functions of commercial banks are discussed below:

4.6.1.1 Accepting of Deposits

Commercial banks accept deposits from their customers. After collecting deposit banks are liable to pay interest on deposit. CBs accept deposits in the form of savings account, current account, fixed deposits and recurring deposits.

4.6.1.2 Granting of Loans:

Out of the deposits collected the banks retain a small portion of deposit in the form of reserve and lend the remaining amount to individuals, business, entrepreneurs, etc. at specified rate of interest. The interest charged by the bank on the loan forms a major part of income of the bank. A commercial bank lends money in many ways like overdraft, cash credit, demand loans, and loan to individuals on collateral securities, etc.

4.6.2. Secondary Function:

Commercial banks mainly perform two types of secondary functions namely Agency Function and General Utility Function. They are briefly elaborate as under:

4.6.2.1 Agency Function:

Commercial banks perform agency functions after receiving standing orders from its customers. The bank acts as an agent to its customers. The various agency functions performed by the commercial banks on behalf of its customers are stated as under:

1. On behalf of its customers, the bank can sell and buy shares, securities, etc.,
2. Bank helps in paying telephone bills, instalment on hire purchase if any, and insurance premium, rent after receiving standing orders from its customers.
3. The commercial banks also help in collecting and paying cheques, drafts and bills as per the instructions of the account holder.
4. On approval of the customer the bank can act as the trustee of the asset to the customer.
5. Banks can serve as an advisor of income tax to its customers.

4.6.2.2 General Utility Function:

Commercial banks perform various general utility functions in order to smoothen the banking activities for their customers. The general utility services performed by the banks are stated as under:

1. Commercial banks act as a safe custodian of precious items like jewelleries and documents to its customers.
2. It helps in reducing the hassle witnessed by the customer in visiting banks over transferring and collecting of money as banks helps in easy transfer of money on the consent of its customer.
3. Commercial banks provide merchant banking services to its customers like advisory services, loan syndication, suggesting corporates for issues like mergers and acquisition, etc
4. Banks have been setting up (ATM) centres in almost all the places to ease the process of withdrawing money at the convenience of its customers.
5. Access to credit cards has helped easing the process of withdrawing money and making payments.
6. Commercial banks issue traveller's cheques to the customer to ease the process of travelling. A travellers cheque helps in reducing the travel hassle and enables to pay the hotel bills and other related payments.

4.7. INCOME OF SCHEDULED COMMERCIAL BANKS IN INDIA

Banks earn their income mainly from traditional sources of business i.e., lending of loan or the spread between interest paid on deposit and interest received on granting of loans. In addition to interest income banks also earn income from different sources such as (ATM) charge, brokerage, commissions, service charge, overdraft, loan

origination fees, etc. also known as Non-interest Income **(Hubrich and Young, 2019).** Therefore, banks mainly earn two types of income known as Interest Income/Fund Based Income and Non-interest income /Non-Fund Based Income (Singh & Dubey, 2015).

According to the CMIE prowess database, the income of a bank can be categorised into two ways, firstly Interest income and non-interest income secondly Fund based, and Fee based income. It is to be further noted that fee-based income forms an important component of non-interest income and interest income is a part of fund-based income (Umakrishnan & Bandyopadhyay, 2005). The income of banks is briefly explained below:

4.7.1 Interest Income/ Fund Based Income:

Interest income/Fund based income includes interest on loans and advances, discount on bills and income earned on exchange of bills, etc. It is broadly categorised into two types, and they are discussed as under:

4.7.1.1 Interest on loan

The primary source of income of a commercial bank is interest earned from granting of loans. Banks earn interest on loans by extending credit to individuals, corporations and industries. Banks extend various kinds of credit like credit card loan, personal loan, home loan, car loan, small business loan, etc. Interest on loans forms the main source of income of banks.

4.7.1.2 Income from Investment

Banks invest in government securities and other securities. With the help of this investment banks earn interest and dividends. The income earned from the securities is considered as the income of the bank from investment.

4.7.2 Non-interest Income/Non-Fund Based Income

The income of a bank is not just restricted to its primary sources, but banks earn fee-based income, income from foreign exchange operations, income from commissions, loan processing fee, penalties, bills, dishonour charges, charges of (ATM), etc. The income generated other than the income from granting of loans and investment in securities are termed as Non-interest Income/ Non-Fund based income. It mainly comprises of Fiduciary income, service charges, trading income and fee based and other income and there exists heterogeneity within these four components of Non-Fund Based income (Stiroh, 2004). The components of non-interest income/ Non-Fund Based Income are discussed as under:

4.7.2.1 Fiduciary Income

It comprises the income earned by the bank by providing trust services such as managing investment, asset management, management of finance, etc. on behalf of its customer. Under fiduciary activities banks are legally and ethically obliged towards its customer and performs its function at its best for its customers.

4.7.2.2 Trading Income

Banks initiate revaluation of assets and liabilities and observe gains and losses in revaluation. The income gained from revaluation of asset, interest rates, cash

instruments are considered as Non-Fund Based Income under the head trading income. It can be defined as “The income earned by the bank by way of selling of assets and other financial instruments, off balance sheet contracts, net gain/loss from trading of cash instrument, revaluation of carrying value of asset and liabilities as a result of marking to market, income received on dealing with foreign exchange, equity derivatives, incidental income from sale and purchase of assets and liabilities (Ga et al, 2016).

4.7.2.3 Service Charge imposed on deposit account

As the name suggests it refers to the amount charged by the bank with reference to the various services provided to its account holders. It refers to the revenue generated from its deposit accounts. It is also known as service fee or maintenance fee. It mainly includes charges on maintenance of bank/deposit account, penalty charged for the bounced cheque due to failure in maintaining sufficient funds or other reasons, charges imposed on non-payment accounts, charges laid on withdrawal of amount before the maturity of the time deposit (early withdrawal fee) and fee imposed on (ATM) usage.

4.7.2.4 Fee based and other income

Under this head, banks earn income from charging different fees for a variety of facilities provided to its customers. Fee based and other income earned by the banks include commission, brokerage, money order, electronic money transfer, loan commitment fees, any fees related to rent, gain on sale of real estate, foreign exchange, fees charged on credit cards, fees imposed on advisory services rendered by the banks, fees charged on other financial services

4.8 INDICATOR OF FINANCIAL PERFORMANCE OF SCHEDULED COMMERCIAL BANKS IN INDIA

Financial performance can be defined as the estimation of financial health of a company during a period of time (Rahman,2016). Financial Performance helps in developing and summarising the financial and operative information to understand the financial aspect of the banking business (Banu & Santhiyavalli, 2019). The evaluation of financial performance is essential to understand the financial status, weaknesses and strengths of a company. The benefits of financial wellbeing of banks are extended to the depositors, shareholders, employees and the economy at a larger picture (Sangmi & Nazir,2010). To reap the benefit of banking services banks have been trying to improve their financial performance.

Out of the various ways, the performance of banks are evaluated with the help of popularly used ratios namely Return on Asset (ROA) Return on Equity (ROE) and Net Interest Margin (NIM) (Ntuite, 2015; Jayabalan,2013) **.**The indicators of financial performance used in the study are discussed below:

4.8.1 Return on Asset (ROA):

It forms an important ratio in determining the performance/profitability of the banks. It can be defined as the ratio of Net income to the total asset. ROA helps in determining how efficiently the asset is used to generate the income of the bank. Higher value of ROA indicates efficient use of assets/resources. The value of Return on Asset is expressed in terms of percentage. ROA is calculated by using the formula stated as under:

ROA= (Net Income/ Total Asset) *100

4.8.2 Return on Equity (ROE):

ROE is the measurement of financial performance in relation to shareholder's equity. It is the ratio of net income to total equity/shareholder's fund. Return on Equity is the rate of amount earned by its shareholders on the amount invested by them. ROE can be obtained as follows:

ROE= (Net income/shareholders equity) *100

4.9. GLIMPSE OF TECHNOLOGICAL DEVELOPMENT IN BANKING SECTOR IN INDIA

After the various reforms introduced in the banking sector, the banks started to reap the benefits of reforms. During 2005-2006, SCBs have witnessed a growth in its profitability and has completely changed the way in which it does its business. Deregulation, technological advancement, supervision, increasing customer needs has led to the growth of non-interest income/fee-based income (Craigwell & Maxwell, 2006). Technological advancement in terms of Automated Teller Machine (ATM) and internet usage has helped in improvement of non-interest income of banks. Indian banks are engaged in rapidly developing the technological aspect to sustain the changing business environment and customer needs (Ahmed, 2011).

During the years 1980 and 1990 debit card and credit card were introduced and in the late 1990s Electronic Clearing Services (ECS) were started by the banks. Banks initiated various money transfer mechanism such as Electronic Fund Transfer (EFT) in 2000, Real Time Gross Settlement (RTGS) in 2004 (Koushalya & Manonmani, 2014). According to the "*Trend and progress report2005-06"* banks have increased electronic based transactions compared to paper-based transactions like cheques,

challan, etc. In 2006 the usage of electronic and card-based payment stood at 51.2% in value and 46.7% in volume out of total transactions initiated by the banks. It is to be noted that paper based interbank transactions were stopped from June 2005 leading to more electronic based transactions. On 21 November 2005, National Electronic Fund Transfer (NEFT) was introduced to initiate online transfer of funds of less than Rs 2,00,000.

Technological innovation helps in improving productivity, efficiency and profitability. Various innovative products were introduced such as Centralised Funds Management System (CFMS)Structural Financial Messaging solution (SFMS)Indian Financial Network (INFINET)Electronic Clearing Services (ECS)adopt to Core Banking Solutions, Automated Clearing House (ACH) National Automated Clearing House (NACH)etc (Sawant,2011). The crucial technological developments in the Indian Banking sector stated above are explained briefly as under:

4.9.1. Automated Teller Machine (ATM)

An (ATM) is an electronic machine which was initially established for dispensing cash without having the holder of a debit/credit card visit the bank site. Presently (ATM) can be used to deposit, transfer funds, check bank balance, printing mini statements of the past transaction, etc. The total number of (ATM)s both onsite and offsite stood at 2,05,184 in April 2018.

4.9.2. Automated Clearing House (ACH)

ACH is an electronic payment system which helps in depositing in financial institutions. Automated Clearing House also makes payment through online mode. The process of clearing houses is tedious and complex and therefore needs to be

conducted by computers. Technology makes the work of clearing house easy and affective as ACH conducts large numbers of transactions in a short period of time.

4.9.3 National Automated Clearing House (NACH)

It is introduced by National Payment Corporation of India (NPCI). NACH helps in initiating transactions in bulk and payment of dividends, interest, salary, pension, bills, etc. It has been observed to be better than the Electronic Clearing System (ECS). In March 2017, registration by the corporates under NACH were made mandatory to encourage electronic transactions and reduce paper-based transactions.

4.9.4. Electronic Clearing Services (ECS)

ECS is related to transfer of funds, usually a periodic mode of transfer from corporates, banks, government to an individual in the form of pension, salary, interest, etc. It is mainly used to transfer funds in bulk which occurs between an individual to a large number of accounts.

4.9.5 National Electronic Fund Transfer (NEFT)

National Electronic Fund Transfer (NEFT) was introduced on 21 November 2005.to initiate online transfer of funds by the Reserve Bank of India (RBI). It is one of the most secure systems of transferring funds by customers from one bank to another. After providing for the account details of the beneficiary fund can be transferred easily.

4.9.6 Real Time Gross Settlement (RTGS)

In this form of settlement, the funds are transferred from one bank to another bank instantly. The instant flow of funds occurs because under this settlement the

transactions are settled as and when they come without summing the amount with any other transaction.

4.9.7 Indian Financial Network (INFINET)

It was launched on 19 June 1999 as a communication tool in the financial system. INFINET uses various technologies like Very small Aperture Terminal (VSAT) and terrestrial leased lines to the conduct interbank and intra bank activities like emails, Electronic Clearing Service (ECS)trading of government securities through online, Management Information System (MIS)RTGS, etc.

4.9.8 Society for Worldwide Interbank Financial Telecommunication (SWIFT)

SWIFT acts as a base which enables electronic transfer of funds between banks or all around the world. The electronic payment system between banks is initiated through SWIFT with the help of code generated. International messages between banks are conducted through SWIFT. It acts as an important tool for easing transfer of funds internationally.

4.9.9 Debit and Credit card

Plastic money is one of the fastest growing services in the country. The use of plastic money is increasing at a higher pace as it offers easy transferring of funds from anywhere through (ATM)s, payment of bills, shopping withdrawal of funds, depositing of money without having to comply with the rules of deposit unlike paper-based deposit, etc. The growth in use of credit card is at slower pace compared to debit cards even if the concept of credit card was brought earlier than debit card (Gupta & Yadav, 2017). Most of the customers are hesitant to use credit card and since it incurs higher service charge customer with irregular banking

obligation/activities are better off without credit card. During 2017-18, banks witnessed a growth in the use of credit cards due to its variety of functions like easy payment, EMI facilities, cash backs and discount on purchase while the use of debit cards saw a decline trend due to growing rate of Point of Sale (POS) as per the Report on Trend and Progress, 2017-18.

4.9.10 Mobile banking and Internet banking

Mobile banking popularly known as SMS banking, is a service provided by the banking institution to carry out financial transactions with the help of a mobile phone or tablet. Mobile banking helps the user check account balances and make payments. But now mobile bank has come up with variety of services which enables its user to avail different function like ordering of cheques, etc, Internet banking on the other hand operates through different applications which enables its customers/users to carry out various banking services remotely with the help of the internet. Whereas mobile banking can function without internet.

4.9.11 Immediate Payment Service (IMPS)

IMPS is launched by National Payment Corporation of India (NPCI) and has increased as a payment system in recent years. It is a mobile based payment system which enables instant transfer of funds between banks with the help of a cell phone. IMPS is one of the easiest, safest modes of transfer of funds with the use of mobile phone. With the help of IMPS, the customers can initiate interbank transfer and remit funds and can quickly avail information about its account as and when required.

4.9.12 Unified Payment Interface (UPI)

UPI was introduced on 11 April 2016 with an objective to reduce paper-based transactions. UPI enables transfer of fund, payment of bills, payment of mobile bills, etc. with the help of apps like Bharat Interface for Money (BHIM), Google pay, USSD etc, with the help of UPI an individual/customers can make bank to bank payments and at the same time can collect money through mobile phone with the help of the app. USSD enables the customer to perform various services without the internet and just by dialling certain number like *99# and following the virtual instructions. Services performed by USSD include enquiry of balance, changing pin, receiving and transferring of funds as per the Report on Trend and Progress, 2017-18.

4.10 Conclusion

Banking sector is the backbone of a well-developed economy. The concept of banks in India has come a long way from just a mere lender to offering various functions to its customers. In brief, the banking reforms have improved the operation and profitability of the banks in India. Throughout the phases of the banking sector in India several changes have been witnessed and are still changing in relation to the dynamic environment. After independence the banking sector has witnessed changes in ownership, mode of working, nationalisation, privatisation, and globalisation and has evolved structure wise. With various changes the banking sector has been trying to find a way to survive the changing banking environment and customer needs. Banks have started to diversify their income into Non-Fund Based Income. At present, Banks in India have been earning from traditional income banks along with Non-Fund Based Income. The composition of income and its operation highly influences the financial performance of the study. The financial performance of the

bank explains how well a bank is managed and how affectively its resources are utilised in order to generate maximum revenue.

This chapter incorporates the concept of banking business, various phases of banking, and the activities of Reserve Bank of India, function of Banking Regulation Act, details about the structure of banking and financial institution. It includes different kinds of income earned by the banks in India, indicator of financial performance and various technological developments in banking sector during the study period. The technological aspect is taken into consideration in this chapter because of its importance on improving Non-Fund Based Income of banks in India. This section of the thesis tries to include the conceptual framework of the study.

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CHAPTER 5

DETERMINANTS OF NON-FUND BASED INCOME

5.1. INTRODUCTION

In the previous chapter, the theoretical background of the study has been discussed where we have focussed on the concept of banking industry, history, banking reforms and the recent developments in the field of technology and banking activities. Now in this chapter, we proceed forward to get the basic concept of Non-fund Based Income/Non-interest Income of India with the help of trend analysis.

The present chapter has taken into consideration various ratios of banks pertaining to the variables affecting the income of the banks under study. The relationship between the interest income and non-interest income is also taken into consideration. With the help of a panel data regression the proportion of NFBI spread over the years in public and private sector banks is taken into consideration. Further with the help of a panel data model the relationship between bank characteristics and NFBI is assessed. The panel data model used in the chapter analyses the various determinants of NFBI in public and private sector banks in India. The analysis of panel data regression model is based on balanced panel data.

5.2. AN OVERVIEW OF NON-FUND BASED INCOME IN INDIA

The banking sector is important for the development of an economy because the function of banks helps in equitable distribution of funds where the bank acts as a middleman for circulating the fund from surplus to deficit. Banks mainly earn two

types of income i.e. Interest/Fund based income and Non-interest/ Non-Fund Based Income.

The Indian banking sector has witnessed a tremendous change in the way it observes its business. The banks since independence went from being a mere lender to customer based bank which mainly focuses on meeting the changing needs of its customers. After 1990 various reforms were introduced in India to ensure proper functioning of the banks. The reforms surely changed the income source of the banking business.

The deregulation of interest rates, increasing competition and the efforts to survive in the dynamic needs of the customers has led the banks to diversify its activities towards fee based or Non-fund Based Income of banks. NFBI plays a very important role in mitigating the risk of interest income. In recent years, the banks in different countries including India have been increasing their Non-traditional source of income. However it should be taken into consideration that NFBI is generated along with interest income as the core activities of bank is purely based on accepting deposits and advancing of loans. The diversification of bank's income towards Non-Fund Based Income/ non-interest income has been observed to help reduce the risk and volatility of income as NFBI is not fully dependent on traditional activities of the bank**.**

The activities of non-interest income increased in Scheduled commercial banks in India. Diversification of Non-Fund based Income has stabilized the profit of SBI and its associates ,foreign and old private sector banks in India (Ramasastri et al., 2004). There is a variation in the proportion of income sources in Indian banks .Therefore it becomes essential to study the activities of Non-Fund Based Income In different bank groups in India. The increase in income diversification does not always lead to an

increase in the financial performance of the country. There are many studies which claim income diversification results in an increase in risk. Shift towards Non-interest income has not succeeded in improving the risk and return of the U.S commercial banks (Stiroh, 2006).The banks involved in trading activities earn higher return from non-interest income especially private foreign banks, who benefit more than domestic banks in India (Ahamed ,2017).

The activities of income source diversification has increased in India therefore it becomes very important to understand its affect on bank's performance and its trend in banking activities. The activities of non-interest income is increasing compared to interest income in Indian banks (Uppal, 2010). Non-interest/Non-fund based income would succeed in reducing the risk provided the banks are ready for higher level of diversification.

As per the *"trend and Progress report 2017-18"* the interest income has slowed down when compared to the income of previous years. The main reason behind the slowing down of interest income is decline in the deposit rate and interest rate but it hasn't affected the overall Net Interest Margin of the banks in India as interest income had a larger positive value than the interest expenses. Non-interest income declined when compared to figures in 2016-17 due to additional provisions but has been adding to the total income of the banks in India during the study period. However, the income from non-interest income declined when figures were investigated on a year to year basis (YOY). It is slightly less when compared to the value during 2015-2016 to 2017-2018.

5.3. OBJECTIVES AND HYPOTHESIS OF THE STUDY

The objective and hypothesis used in this chapter is to determine the affect of different bank specific factors on the proportion of NFBI of public and private sector banks in India. The study is confined to Indian SCBs. The present study has excluded foreign banks as the objective of the study is to determine the affect of different bank specific factors where traditional intermediaries function is taken as an important dependent variables and after referring to various proportion of income of banks in India it was observed that foreign banks are not much inclined towards traditional activities of banks and do not contribute much to the priority sector lending and other lending strategy used as an important variable in the study. Further foreign banks do not affect significantly on the dependent variables taken together so the study is confined to public and private sector banks in India.

The objectives and hypothesis framed are stated below:

1. To analyse the proportion of Non-Fund Based Income of Scheduled Commercial Banks in India and determine the trend of share of Non-Fund based Income in Scheduled Commercial Banks over the specified period of study.
2. To make a comparative study of the proportion of non-fund based income of Public sector banks and Private sector banks and explore reasons for significant differences in proportion of non-fund based income.
3. To investigate whether banking parameters has an affect on the level of non-fund based income of the bank.

$\mathbf{H_{01}}$ = Non-fund based income (NFBI) of SCBs is evenly spread over the decade under the study.

$\mathbf{H_{02}}$ = There is no significance difference in the proportion of NFBI across Public and Private sector banks in India

$\mathbf{H_{03}}$=NBFI is not significantly affected by the Banking parameters such as size, traditional activities, CAR, operating expenses, bank efficiency and technological development.

Similarly, the alternative hypothesis of the study is stated below:

$\mathbf{H_{a1}}$ = Non-fund based income (NFBI) of SCBs is unevenly spread over the decade under the study.

$\mathbf{H_{a2}}$ = There is a significance difference in the proportion of NFBI across Public and Private sector banks in India

$\mathbf{H_{a3}}$ = NBFI is significantly affected by the Banking parameters such as size, traditional activities, CAR, operating expenses, bank efficiency and technological development.

5.4. Trend Analysis of Non Fund Based Income of SCBs in India

In the process of investigating the trend of Non-Fund Based income the study has used various ratios like ratio of interest income to total asset, ratio of net interest income to total asset, ratio of non-interest income to total asset and ratios of components of non-interest income to total income of the banks under study on year to year basis.

5.4.1 Ratio of Interest Income to Total Asset of SCBs

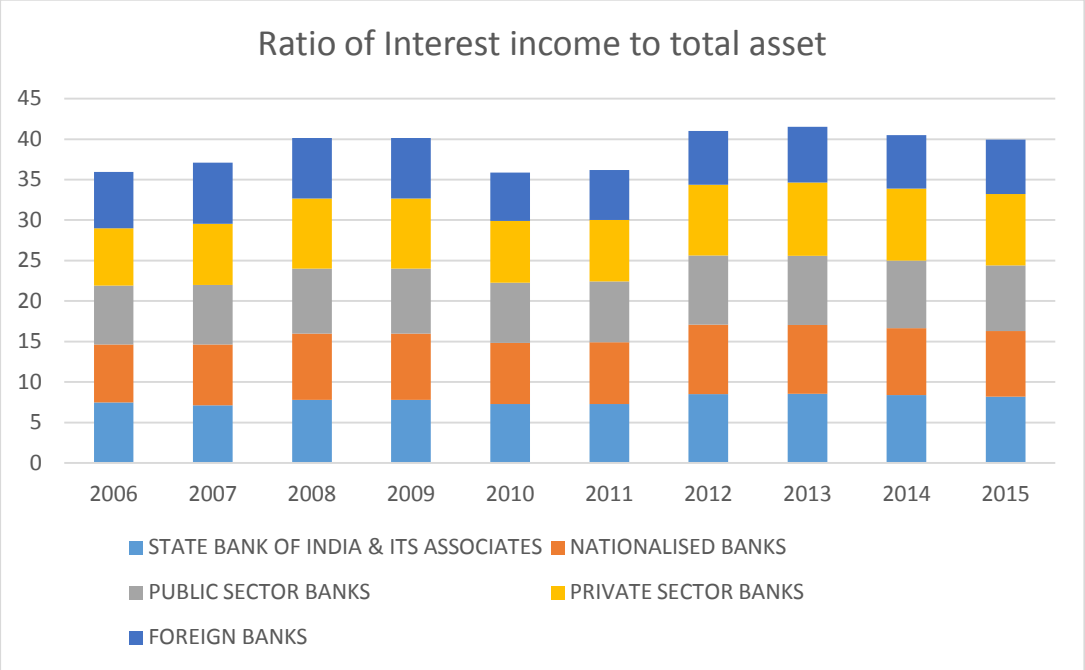
The ratio of interest income of individual banks is obtained by dividing the interest income of respective banks with the total asset of the different type of bank. The type of banks is classified as per the ownership structure. It is segregated into sub banks to get a clear picture of the interest income contribution of the bank in India during the period 2005-2015.

Table 5.1: Bank Group-wise ratio of interest income to total asset

Year	STATE BANK OF INDIA & ITS ASSOCIATES	NATIONALIZED BANKS	PUBLIC SECTOR BANKS	PRIVATE SECTOR BANKS	FOREIGN BANKS	ALL SCHEDULED COMERICIAL BANKS
2006	7.48	7.17	7.28	7.05	6.96	7.21
2007	7.14	7.49	7.37	7.53	7.57	7.42
2008	7.79	8.18	8.05	8.65	7.49	8.12
2009	7.79	8.18	8.05	8.65	7.49	8.12
2010	7.28	7.55	7.46	7.60	5.99	7.37
2011	7.30	7.62	7.52	7.59	6.15	7.44
2012	8.52	8.57	8.55	8.71	6.67	8.45
2013	8.54	8.53	8.54	9.04	6.89	8.53
2014	8.40	8.27	8.31	8.90	6.60	8.32
2015	8.21	8.09	8.12	8.81	6.71	8.18
Mean	7.84	7.96	7.92	8.25	6.85	7.92
Total	78.43	79.65	79.24	82.52	68.54	79.16

Source: Compiled from RBI

Fig 5.1: Bank groupwise ratio of interest income to total asset



Source: Computed figure

From the ratios depicted in table 5.1 and figure 5.1, it has been observed that the interest income of all Scheduled Commercial Banks is in increasing trend from 2006 to 2009. The overall ratio of interest income of SCBs is higher but fluctuating in nature. The reason for the unsteady ratio across the banks could be the financial crisis in 2008-09 and the shift in the focus of the banks from interest income to other income. The ratio of interest income is inconsistent and lower in foreign banks as these banks focus more on modern banking. Even if the ratio of interest income to total asset is inconsistent in foreign banks it is leading in terms of traditional activities during the study period.

The total and average ratio of interest income to total asset of all SCBs from 2005-06-2014-15 stands at 79.16 and 7.92 respectively. It is observed that the performance of foreign banks in terms of interest income to total assets is lower than any other type of

banks as foreign banks mainly focus on modern banking. From the above table it is clear that the major contributor of interest income is private sector banks followed by public sector banks. The interest income to total assets of nationalized banks under the public sector is slightly higher than the SBI and its associates. The performance of Small Finance Banks is higher with the given time of its operation and its contribution is higher than any kind of SCBs in India when the ratio of the banks are considered on yearly basis.

5.4.2 Ratio of Non-interest Income to Total Asset of SCBs

The ratio of non-fund based income to total asset/ non-interest income to total asset of of SCBs in India is presented in table 5.2and figure 5.2 of different kinds of SCBs in India. This particular table and figure is provided in order to get a clear view of the status of non-interest income during the period of the study.

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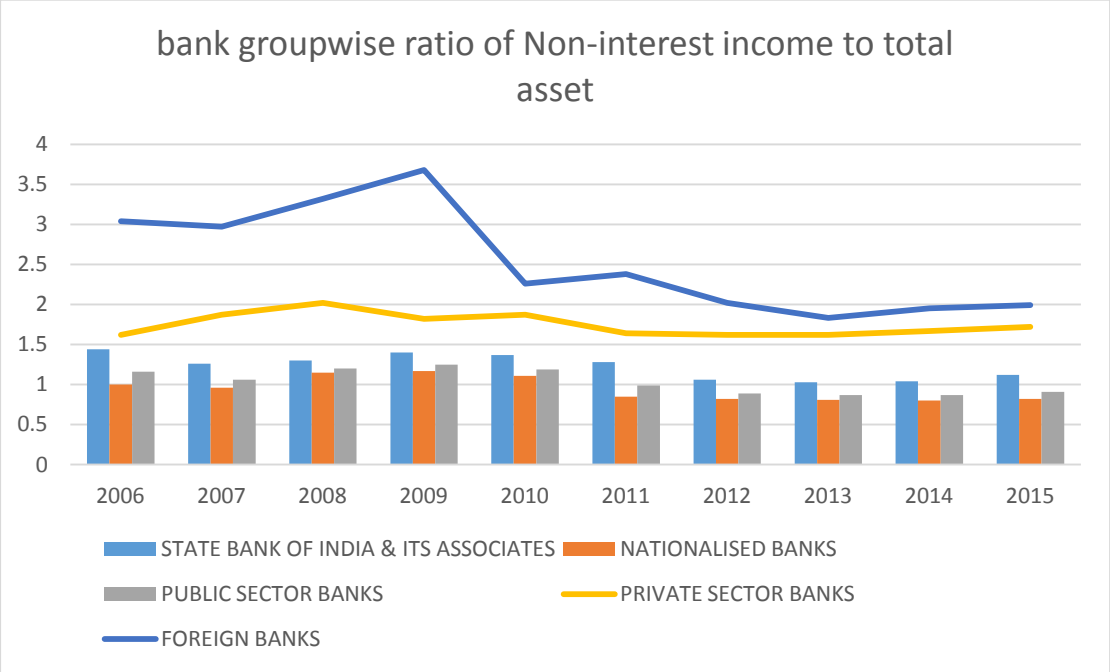
Table 5.2: Bank Group-wise ratio of Non-interest Income to total asset

YEAR	SBI & ITS ASSOCIATES	NATIONALIZED BANKS	PUBLIC SECTOR BANKS	PRIVATE SECTOR BANKS	FOREIGN BANKS	ALL SCHEDULED COMERICIAL BANKS
2006	1.44	1.00	1.16	1.62	3.04	1.38
2007	1.26	0.96	1.06	1.87	2.97	1.38
2008	1.30	1.15	1.20	2.02	3.32	1.55
2009	1.40	1.17	1.25	1.82	3.68	1.57
2010	1.37	1.11	1.19	1.87	2.26	1.41
2011	1.28	0.85	0.99	1.64	2.38	1.21
2012	1.06	0.82	0.89	1.62	2.02	1.11
2013	1.03	0.81	0.87	1.62	1.83	1.09
2014	1.04	0.80	0.87	1.67	1.95	1.11
2015	1.12	0.82	0.91	1.72	1.99	1.15
Mean	1.23	0.95	1.04	1.75	2.54	1.30
Total	12.30	9.50	10.39	17.46	25.44	12.96

Source: Compiled from RBI

Fig 5.2: Ratio of Non-interest income to total asset



Source: Computed figure

From the above table5.2 and figure 5.2, it is clear that the ratio of non-interest income of foreign banks is quite high followed by private sector banks and public sector banks in India. The contribution of foreign banks towards non-interest income is high in the initial period of the study from 2005 to 2009 and declined after 2009. The major reason behind the decline of the ratio of non-interest income of foreign banks is that the other type of banks also started diversifying into non-interest income and reap the benefits of non-interest income. The contribution of foreign banks in non-interest income is quite higher when compared to group wise banks operating in India but the engagement of private sector banks are better when compared to the ratio of non-interest income of public sector banks in India. Over the years, it is noted that the contribution of SBI and its Associate towards non-interest income is better when compared with Nationalised banks within public sector banks in India. Fig.5.2 depicts

the ratio of private sector banks consistent over the years than compared to foreign banks. The ratio of foreign banks is higher but fluctuating in nature.

5.4.3. Ratio of Interest Income, net interest income and Non-interest Income to Total Asset of Public Sector Banks

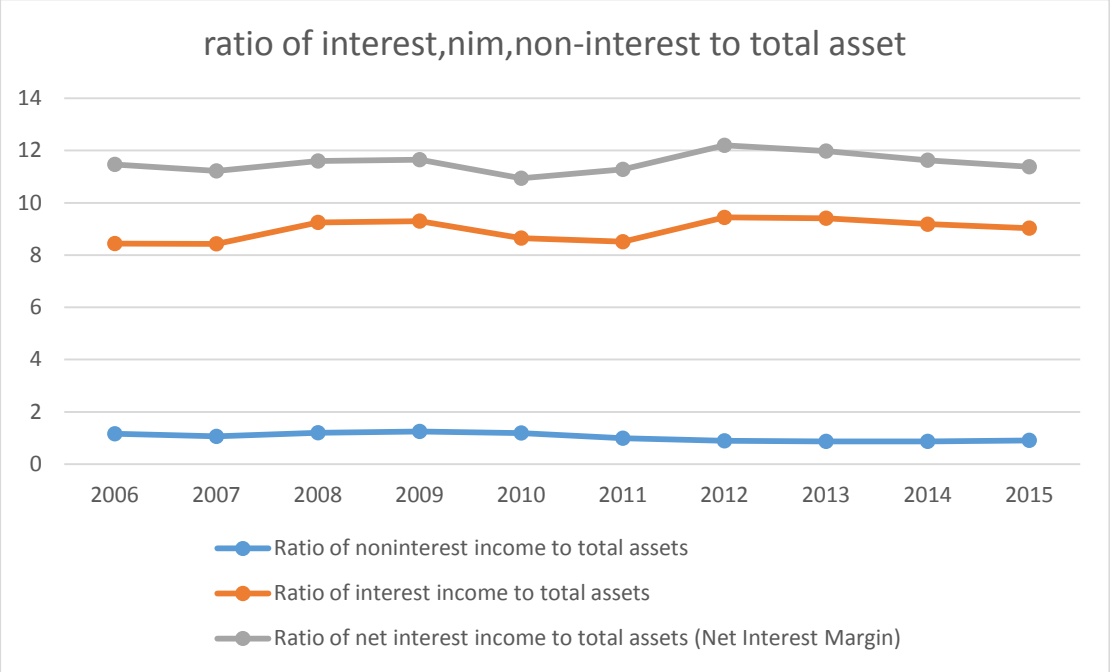
The ratio of Non-interest income to total asset, net interest income to total asset and net interest income to total asset of public sector banks are presented in the table 5.3 and figure 5.3. The ratio of the same is obtained by dividing respective income to total asset in the table. Net interest income is obtained by deducting interest income of respective banks by the interest expenses of the banks.

Table 5.3: Ratio of Interest Income, net interest income and Non-interest Income to Total Asset of Public Sector Banks

YEAR	RATIO OF NONINTEREST INCOME TO TOTAL ASSETS	RATIO OF INTEREST INCOME TO TOTAL ASSETS	RATIO OF NET INTEREST INCOME TO TOTAL ASSETS (NET INTEREST MARGIN)
2006	1.16	7.28	3.03
2007	1.06	7.37	2.79
2008	1.20	8.05	2.35
2009	1.25	8.05	2.35
2010	1.19	7.46	2.29
2011	0.99	7.52	2.77
2012	0.89	8.55	2.76
2013	0.87	8.54	2.57
2014	0.87	8.31	2.45
2015	0.91	8.12	2.35

Source: Compiled from RBI

Fig 5.3: Ratio of interest income, net interest margin and non-interest income of Public Sector Banks



Source: Computed figure

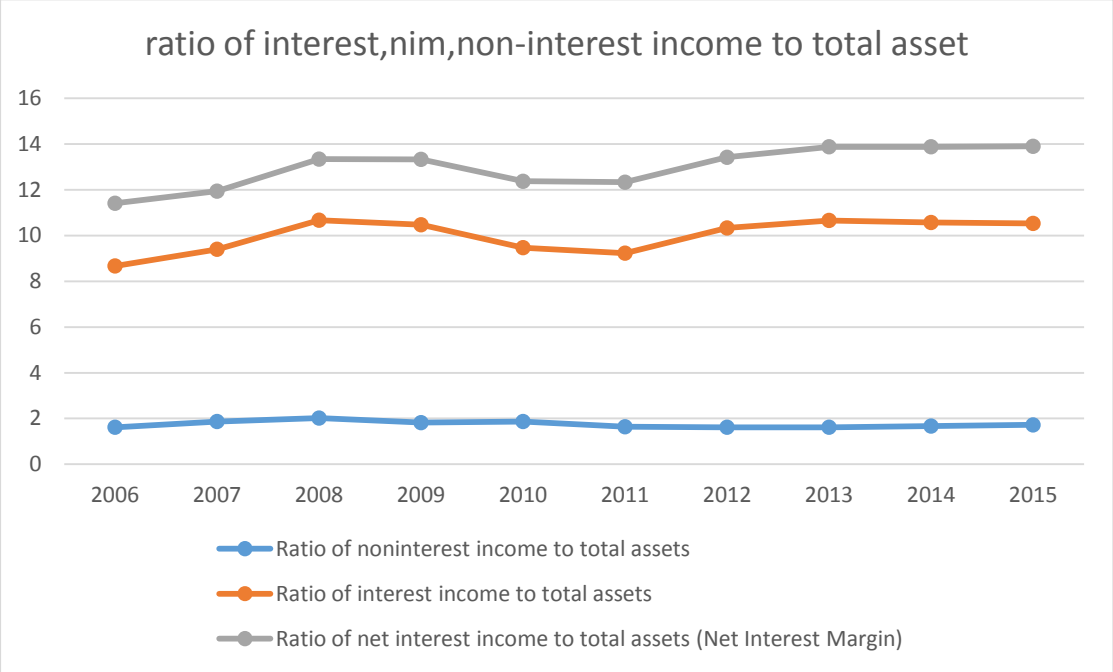
The data presented in above table 5.3 and figure 5.3 shows the trend of the non-interest income, interest income and net interest margin (nim) during the period 2005-06- 2014-15. The ratio of non-interest income to total asset and net interest margin to total asset depicts a declining trend during the period of the study. However the ratio of interest income shows an increasing trend but the value is fluctuating in nature. The proportion of interest income is higher compared to non-interest income as public sector banks are more dependent on traditional activities of banks.

Table 5.4: Ratio of Interest Income, net interest income and Non-interest Income to Total Asset of Private Sector Banks

YEAR	RATIO OF NONINTEREST INCOME TO TOTAL ASSETS	RATIO OF INTEREST INCOME TO TOTAL ASSETS	RATIO OF NET INTEREST INCOME TO TOTAL ASSETS (NET INTEREST MARGIN)
2006	1.62	7.05	2.74
2007	1.87	7.53	2.54
2008	2.02	8.65	2.67
2009	1.82	8.65	2.86
2010	1.87	7.60	2.90
2011	1.64	7.59	3.10
2012	1.62	8.71	3.09
2013	1.62	9.04	3.22
2014	1.67	8.90	3.31
2015	1.72	8.81	3.37

Source: Compiled from RBI

Fig 5.4: Ratio of interest income, net interest margin and non-interest income of private sector banks



Source: Computed figure

The above table 5.4 and Figure 5.4 shows an increasing trend of interest income to total asset The traditional business in the private sector has an upper hand but the fact of involvement in Non-Fund Based income cannot be denied. The data shows a stable trend of non-interest income of the bank compared to interest income of the bank, the latter is fluctuating in nature. A slight improvement in the value of non-interest income is observed over the years. In the year 2007, the ratio of non-interest income shows an improved figure which later declined in the year 2010. The ratio of net interest margin to total asset and interest income to total asset shows an increasing trend but a fluctuating trend compared to the non-interest income. The overall ratio during the period shows that the private banks are more inclined towards traditional income but are also involved in income diversification.

The private sector banks have succeeded in maintaining a proper balance between traditional and non-traditional activities of the banks than compared to the public sector banks in India. The ratio of interest and non-interest income are higher throughout the period of study in private sector banks when compared to the values of Public sector banks.

5.4.4 Ratio of various components of non-interest income to total income of Public Sector Banks:

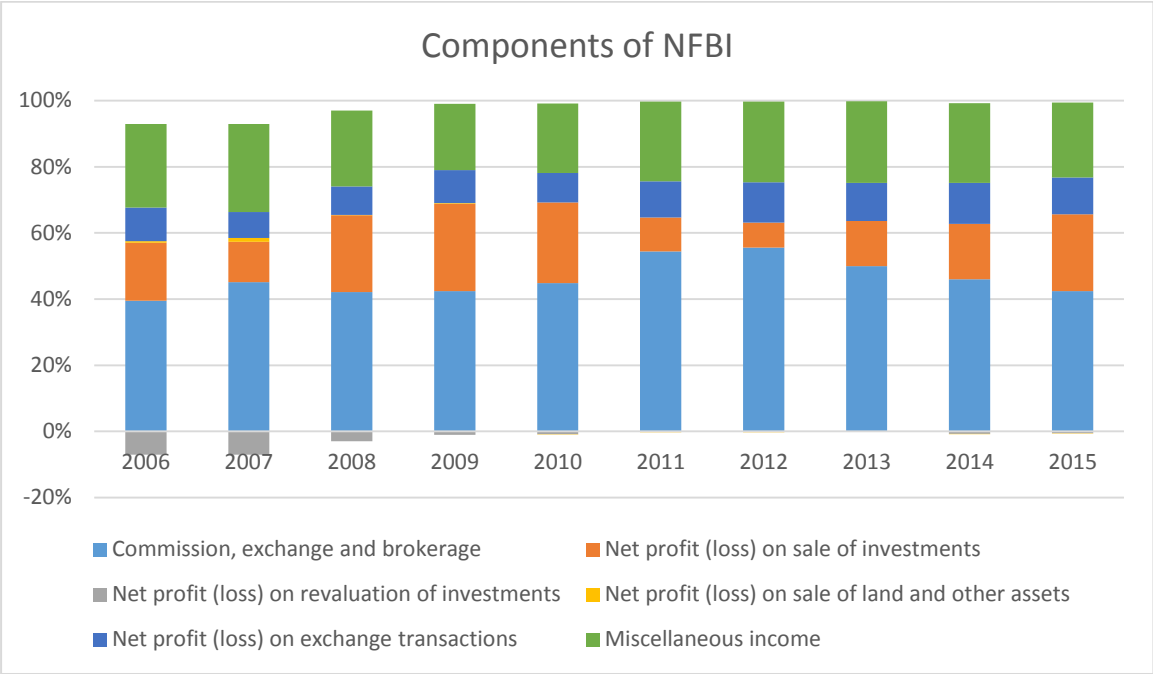
Non-Fund based Income (NFBI) of SCBs mainly consists of Commission exchange and brokerage, net profit(loss) on sale of investments, net profit (loss) on revaluation of investments, net profit (loss) on sale of land and other assets. Net profit (loss) on exchange transactions and miscellaneous income.

Table 5.5: Components of NFBI of Public Sector Banks

YEAR	COMMISSION, EXCHANGE AND BROKERAGE	NET PROFIT (LOSS) ON SALE OF INVESTMENTS	NET PROFIT (LOSS) ON REVALUATION OF INVESTMENTS	NET PROFIT (LOSS) ON SALE OF LAND AND OTHER ASSETS	NET PROFIT (LOSS) ON EXCHANGE TRANSACTIONS	MISCELLANEOUS INCOME
2006	9911.79	4399.112	-1763.663	122.2032	2550.145	6335.72
2007	12211.12	3316.191	-1901.631	311.6231	2123.248	7202.76
2008	14456.96	7989.823	-1036.365	53.1793	2958.842	7857.29
2009	18226.58	11360.49	-433.1231	89.3848	4275.094	8597.386
2010	22146.87	12078.01	-438.1451	-9.0859	4385.1	10357.11
2011	26226.1	4966.006	-94.4501	-18.6479	5261.735	11624.19
2012	28157.71	3846.065	-106.0403	-37.2662	6195.831	12343.37
2013	28461.72	7759.627	-58.4091	-27.0384	6557.338	14069.72
2014	30438.37	11058.82	-465.0451	-27.8831	8147.976	15976.99
2015	32443.2	17748.97	-404.6953	-48.2647	8526.942	17331.33

Source: Compiled from RBI

Fig 5.5: NFBI of public sector banks



From the table 5.5 and figure 5.5 presented above during the period 2006-2015 it is clear that the major chunk of NFBI of public sector bank is earned through commission, exchange and brokerage followed by miscellaneous income and net profit(loss) on sale of investment. Over the period of study commission, exchange and brokerage has increased tremendously which stood at 9911.79on 2005 and increased to 32443.2 in 2015. Public sector banks are incurring loss from sale of land and other asset and revaluation of investments. From the data presented above it also indicates that the banks are earning NFBI from exchange transactions, which stands at 8526.942 in 2015.

5.4.5 Components of Non-Fund Based Income (NFBI) of Private Sector Banks:

Table 5.6 and figure 5.6 presents the data related to the various components of Non-Fund Based Income (NFBI) of Private Sector Banks in India. The various NFBI consists of Commission exchange and brokerage, Net Profit/loss on sale of

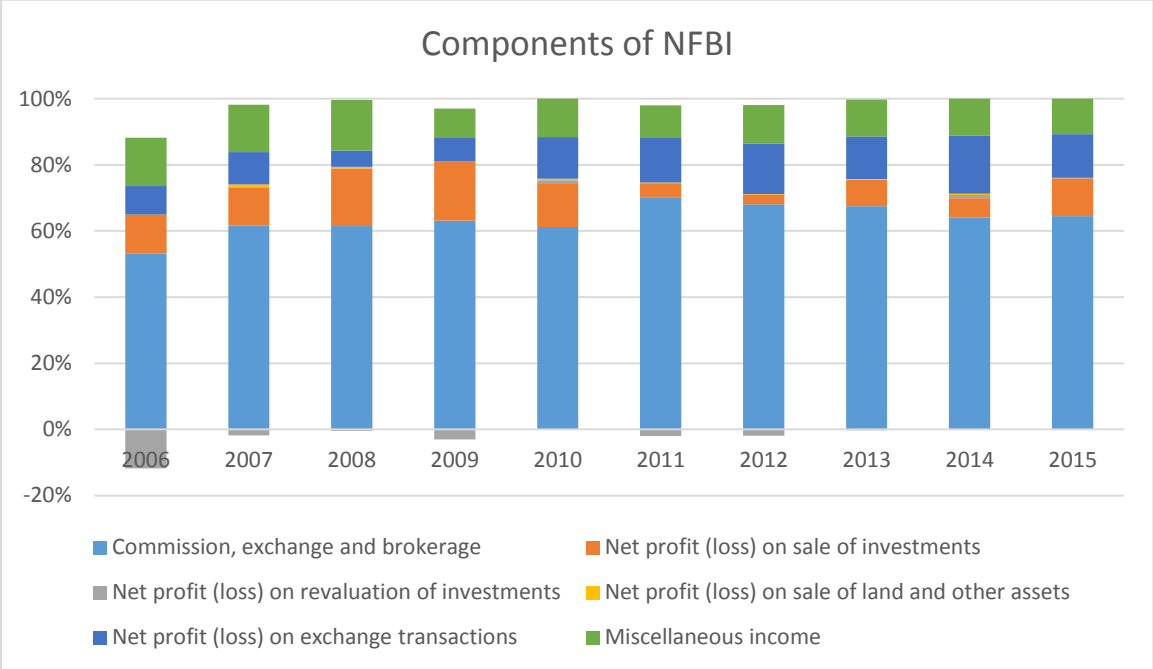
Investments, Net profit/loss on revaluation of investments, Net profit/loss on sale of land and other assets, Net profit/loss on exchange transaction and miscellaneous income during the period 2005-06 to 2014-15.

Table 5.6: components of Non-Fund Based Income of Private Sector Banks

YEAR	COMMISSION, EXCHANGE AND BROKERAGE	NET PROFIT (LOSS) ON SALE OF INVESTMENTS	NET PROFIT (LOSS) ON REVALUATION OF INVESTMENTS	NET PROFIT (LOSS) ON SALE OF LAND AND OTHER ASSETS	NET PROFIT (LOSS) ON EXCHANGE TRANSACTIONS	MISCELLANEOUS INCOME
2006	5227.849	1156.26	-1156.18	4.6158	843.7299	1438.697
2007	7326.799	1371.911	-216.726	100.9403	1159.937	1709.006
2008	9798.547	2787.195	-66.726	67.3381	785.7218	2437.622
2009	11530.68	3271.264	-542.33	-5.978	1292.343	1632.091
2010	12030.79	2605.608	181.0417	99.2059	2472.391	2277.973
2011	14789.44	904.8166	-429.952	33.6189	2837.211	2077.924
2012	17270.37	768.5791	-495.057	26.0469	3875.266	2933.084
2013	19738.13	2349.713	-82.3888	36.5304	3782.133	3241.686
2014	22182.74	1997.604	361.2812	132.2992	6088.222	3844.934
2015	26468.93	4682.244	57.485	30.0268	5386.326	4403.243

Source: Compiled from RBI

Fig 5.6: components of Non-Fund Based Income of Private Sector Banks



Source: Computed figure

The Non-Fund Based Income of Private Sector Banks presented in table 5.6 depicts an increase in the activities of NFBI of private sector banks in India. Moreover the components of other income illustrated in figure 5.6. reveals a growing trend of all kinds of income especially in commission, exchange and brokerage followed by net profit(loss) on sale of investment and miscellaneous income. The contribution of Net profit (loss) on exchange transaction has witnessed a growth in the private sector. Due to technological advancement and fluctuating interest income the private sector banks are seen diversifying into NFBI of banks and its activities has increased at a larger extent over the period of the study.

5.4.6 Components of Non-Fund Based Income (NFBI) of Public Sector Banks:

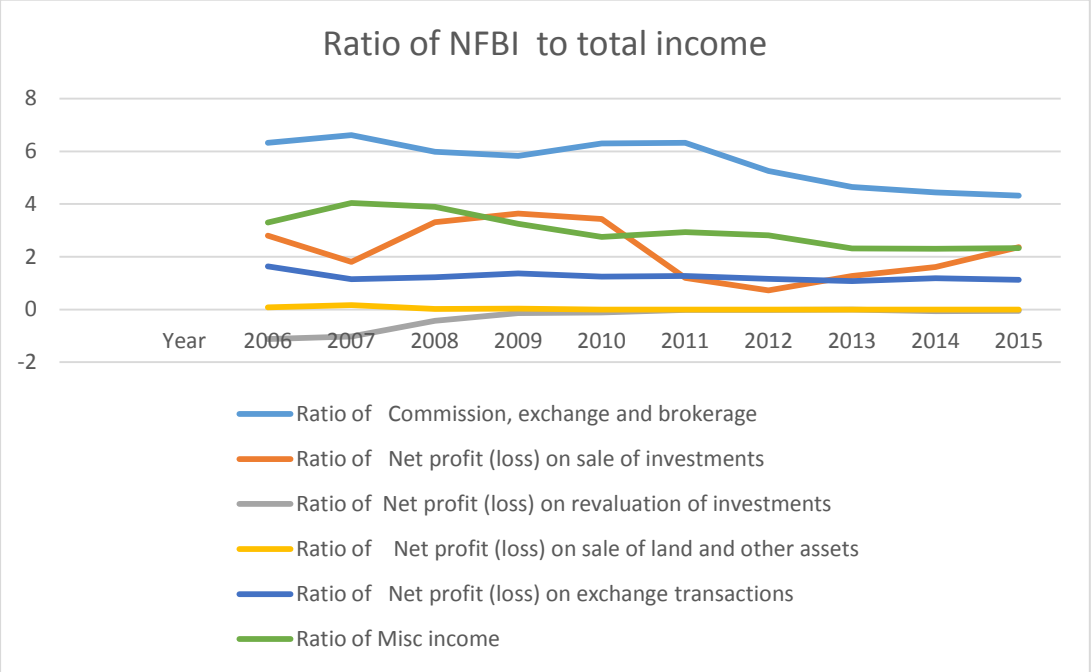
The ratio of different NFBI of the Public Sector Banks are obtained by dividing each income with the total income. The total income consists of interest income and non-interest income of the banks spread over the period of the study. The ratio of different NFBI of the banks depicted in the table 5.7 and figure 5.7 shows the proportion of each income on the total income. These ratios helps in understanding the contribution of different income on the total income of the banks and helps in identifying the source of NFBI which is helping in improving the profitability of the banks.

Table 5.7: Percentage of Non-interest Income to total income of Public Sector Banks

YEAR	RATIO OF COMMISSION, EXCHANGE AND BROKERAGE	RATIO OF NET PROFIT (LOSS) ON SALE OF INVESTMENTS	RATIO OF NET PROFIT (LOSS) ON REVALUATION OF INVESTMENTS	RATIO OF NET PROFIT (LOSS) ON SALE OF LAND AND OTHER ASSETS	RATIO OF NET PROFIT (LOSS) ON EXCHANGE TRANSACTIONS	RATIO OF MISC INCOME
2006	6.32	2.80	-1.12	0.08	1.63	3.30
2007	6.62	1.80	-1.03	0.17	1.15	4.04
2008	5.98	3.31	-0.43	0.02	1.22	3.90
2009	5.83	3.64	-0.14	0.03	1.37	3.25
2010	6.30	3.43	-0.12	0.00	1.25	2.75
2011	6.33	1.20	-0.02	0.00	1.27	2.94
2012	5.26	0.72	-0.02	-0.01	1.16	2.81
2013	4.65	1.27	-0.01	0.00	1.07	2.31
2014	4.44	1.61	-0.07	0.00	1.19	2.30
2015	4.32	2.36	-0.05	-0.01	1.13	2.33

Source: Compiled from RBI

Fig 5.7 Ratio of NFBI to total income of Public sector banks



On the basis of the ratio of different components of NFBI to total income of public sector banks in India it is observed that the public sector banks mainly earns its income from commission, exchange and brokerage followed by miscellaneous income and net profit(loss) from sale of investment. The proportion of income earned from NFBI by the public sector banks is quite low compared to the NFBI of private sector banks in India. The reason for lower NFBI over the years compared to private sector banks is that public sector banks depend highly on traditional activities of the business for its profit. If the figures are closely investigated we can see an inconsistent trend of NFBI in the public sector banks.

5.4.7. Proportion of NFBI to total income of Private sector Banks

Table 5.8 and Fig 5.8 presents the data related to the ratio of each component of NFBI to total asset of Private sector banks in India. The values are obtained by dividing the respective head of NFBI to total income of the private banks. The total income of the

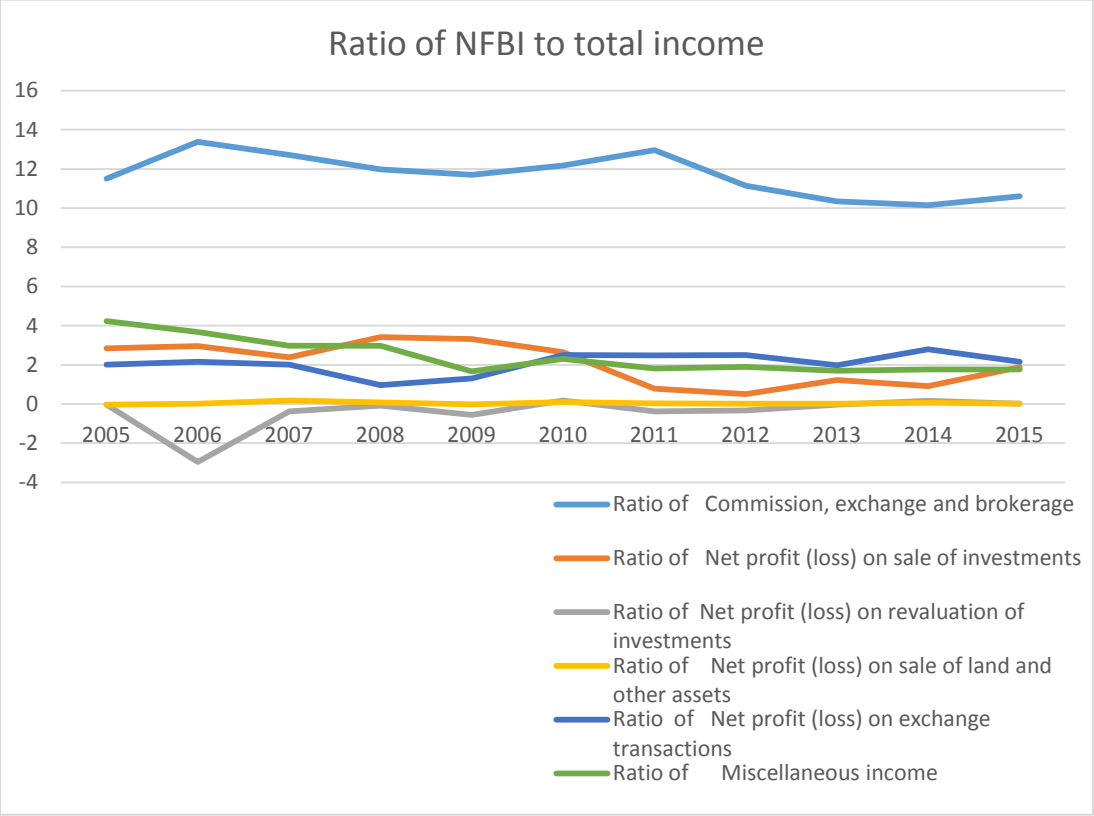
bank is obtained by adding the net interest income and non-interest income of banks during the period of study.

Table 5.8: Ratio of NFBI to total income of Private Sector Banks

YEAR	RATIO OF COMMISSION, EXCHANGE AND BROKERAGE	RATIO OF NET PROFIT (LOSS) ON SALE OF INVESTMENTS	RATIO OF NET PROFIT (LOSS) ON REVALUATION OF INVESTMENTS	RATIO OF NET PROFIT (LOSS) ON SALE OF LAND AND OTHER ASSETS	RATIO OF NET PROFIT (LOSS) ON EXCHANGE TRANSACTIONS	RATIO OF MISCELLANEOUS INCOME
2006	13.38	2.96	-2.96	0.01	2.16	3.68
2007	12.72	2.38	-0.38	0.18	2.01	2.97
2008	11.97	3.41	-0.08	0.08	0.96	2.98
2009	11.70	3.32	-0.55	-0.01	1.31	1.66
2010	12.17	2.64	0.18	0.10	2.50	2.30
2011	12.95	0.79	-0.38	0.03	2.48	1.82
2012	11.14	0.50	-0.32	0.02	2.50	1.89
2013	10.35	1.23	-0.04	0.02	1.98	1.70
2014	10.15	0.91	0.17	0.06	2.79	1.76
2015	10.61	1.88	0.02	0.01	2.16	1.77

Source: Compiled from RBI

Fig 5.8 Ratio of NFBI to total income of Private sector banks



Source: Computed figure

After going through the data illustrated in table and figure 5.8 it can be understood that the Private sector banks in India mainly earns NFBI by way of commission, exchange and brokerage. The contribution of the same is higher among the other income of the banks. The ratio of miscellaneous income to total income and ratio of Net profit (loss) on sale of investment to total income was initially higher on 2006 but at the end of the study period its contribution to total income is somewhat at par with ratio of net profit on exchange transactions. It is also witnessed that the ratio of net profit(loss) on sale of land and other asset to total income and ratio of net profit(loss) on revaluation of investment to total income is very low compared to other income.

5.5. EMPIRICAL MODEL

5.5.1. SPECIFICATION OF VARIABLES

As per the literature and the objective of the study, mainly three models are used in the study where each model has different dependent variables and the independent variable. The present chapter discusses the analysis of bank characteristics on the NFBI of the public and private sector banks in India. The study tries to find out the relationship between bank parameters such as technological advancement, loan strategy, bank size, loan quality, core deposit ratio (DeYoung & Rice, 2004; Craigwell & Maxwell, 2006). The variables used in the study are mentioned below:

5.5.2. DEPENDENT VARIABLE

Non-fund based income to total assets is used as the dependent variable in the panel data regression model. It is used to understand the affect of various bank factors like bank characteristics, technological advancement, bank strategy, bank size, loan quality on the level of Non-fund based income of the banks. In order to capture this relationship the ratio of non-interest income to total asset is taken into consideration. It is obtained by dividing non-interest income to total assets.

5.5.3. VARIABLES USED IN THE STUDY

The study has used different explanatory variables for three different models as per the requirement of the study. The traditional aspect of the banking business consist of the core activities of the banks like receiving of deposit and granting of loans. The traditional activities of banks are segregated into variables such as ratio of demand and savings bank deposit to total deposit (SBDTD), loan strategy in the form of ratio

of loan to asset (RLTA), priority sector lending as the ratio of priority sector lending to total advances (RPRTA) and ratio of interest income to total asset (RINTA).The explanatory variables are based on the variables used in the past studies (DeYoung & Rice, 2004; Craigwell & Maxwell, 2006; Pennathur et al., 2012) and they are listed as under:

Table 5.9: Summary of the variable studied where dependent variable is RNFTA

DEPENDENT VARIABLE	**PROXY**	**MEASUREMENT**	
	RNFTA	(non-interest income/total asset)	
Independent variable	Proxy	Measurement	Expected sign
Well managed banks	$ROE_{i,t}$	(Net income/shareholder's fund)x100	(-)
Core ratio	$SBDTD_{it}$	Ratio of demand and saving bank deposit to total deposit	(+)
Loan quality	$RNPA_{it}$	Ratio of non-performing asset to total advances	(+)
Priority Sector loan	$RPRTA_{i,t}$	Ratio of priority sector advances to total advances	(-)
Ratio of interest income to total asset	$RINTA_{it}$	Ratio of interest income to total asset	(+)
CAR	CAR_{it}		(+)
Operating expense	$OEXTA_{it}$	Ratio of operating expense to total asset	(+)
Bank Size	$LNTA_{it}$	Log of total asset	(+)
Lending strategy	$RLTA_{it}$	Ratio of loan to asset	(-)
Technological development	$DATM_{it}$	Dummy variable(ATM)	(+)

Source: Based on literature

5.5.4. DATA AND SAMPLE

The study is based on a panel data regression model and consists of data of banks operating in India. The data for the same is obtained from various publication of RBI like Report on Trend and Progress of Banking in India, Database on Indian Economy, statistical table relating to SCBs in India and annual data releases. The study includes SBI and its Associates, Nationalised Banks, Private Sector Banks operating in India. The panel data consists of 45 banks studied over the period of 10 years with 450 observations from 2005-06 to 2014-15.

5.5.5. METHODOLOGY

According to the objectives and several literatures reviewed, the present study is based on the first models where the model consists of $RNFTA_{i,t}$ as a function of bank efficiency ,strategy, technological change, bank size and bank ownership. This model aims to find out the determinants of NFBI in public and private sector banks in India. That determinants is given as:

$RNFTA_{i,t}$= f(bank efficiency, technological change, bank strategy, bank size and bank ownership)

The study has used panel data analysis to investigate the data with the help of fixed effect and random effect model, which is chosen by conducting a Hausman specification test. In order to inculcate the affect of cross section the study has chosen fixed effect model over Pooled regression model (Ordinary Least Square). The fixed effect model and random effect model is able to bring more robustness in the result of a cross section analysis where same variables are studies over the period of time compared to OLS regression model (Woolridge 2010).

5.5.6. RATIO OF NON-FUND BASED INCOME TO TOTAL ASSET

The ratio of Non-fund based income to total asset is the function of bank efficiency, bank strategy, bank size and bank ownership presented as $RNFTA_{i,t}$= f(bank efficiency, technological change, bank strategy, bank size and bank ownership). The first panel data equation tries to check the relationship between the different aspect of banking industry and the ratio of non-fund based income of the banks.

$$RNFTA_{i,t}= \alpha +\beta_1 ROE_{i,t}+ \beta_2 SBDTD_{i,t}+ \beta_3 RNPA_{i,t} + \beta_4 RPRTA_{i,t} + \beta_5 RINTA_{i,t}+ \beta_6 CAR_{i,t}+\beta_7 OEXTA_{iti,t}+ \beta_8 LNTA_{i,t} + \beta_9 RLTA_{i,t}+\beta_{10} PVTBANK_{i,t}+\beta_{11} DATM_{i,t} + \beta_{12} TIME_t+ u_i+ \varepsilon_{i,t} \quad \textbf{(1)}$$

Where, α and β represents the intercept and slope coefficient of the explanatory variables, u_i is the unobserved bank specific affect and $\varepsilon_{i,t}$denotes the error term. Where the subscripts i and t index banks and years, respectively. Here RNFTA is the dependent variable and can be defined as the ratio of non-fund based income to total asset, ROE depicts the efficiency of the bank, SBDTD captures the core business of the bank and is denoted as the ratio of demand and savings deposit and ratio of secured advances to total advances respectively. RNPA captures the loan quality aspect of the business, it is expected that as the loan quality decreases bank tends to drift towards non-fund based income of the bank (Pennathuret al.,2012).Ratio of Priority sector to total advances (RPRTA)denotes that as more banks start lending priority based loan the less they vent into NFBI.

Ratio of interest income to total asset (RINTA) depicts the traditional aspect of the banks. Banks with higher Capital adequacy ratio tend to drift towards non-fund based income/non-interest income. OEXTA represents the operating expense of the business

as more and more banks incorporate non-fund based income the more expenses they occur with respect of different technological establishment. LNTA represents the size of the asset . Again, RLTA refers to the ratio of loan to total. Bank ownership is captured by a dummy variable as 0 for public sector bank and 1 for private sector banks. DATM represents a dummy variable for the offsite and onsite usage of ATM services in different period by different banks under study. The present study utilises the time fixed effect to ascertain the non-fund based spread over the year and to control the unspecified cross-sectional sources of the non-fund based income. Where y2,y3,y4,y5,y6,y7,y8,y9 and y10 refers to 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014 and 2015 respectively. In order to capture the ownership structure the study has employed a dummy variable to private and public sector banks. The study expects a significant result of private sector banks over public sector banks on NFBI as from the trend analysis it is clear that the contribution of NFBI in private sector banks are higher.

For each equation different Fixed effect (FEM) and Random effect model (REM) is run and Hausman test has been used to choose the model between FEM and REM. The results and discussions of the model is elaborated as per the output obtained from the test.

5.6 RESULTS AND DISCUSSION

In this section, the summary statistics is analysed before the results of actual model is discussed. Table 5.10 presents the descriptive statistics of the independent and dependent variable undertaken in the study during the period 2005-06 to 2014-15. The descriptive statistics defines the mean, standard deviation, maximum and minimum values of the dependent and independent variables. The mean values of the Ratio of

Non-fund based income total asset (RNFTA) and the ratio of interest income to total asset (RINTA) is observed to at 1.12 and 8.21 defining that the proportion of interest income is higher than the non-fund based income and its standard deviation stands at .44 and 1.07respectively. The values of standard deviation of RNFTA and RINTA depicts that RINTA is volatile than the RNFTA. One prominent reason for higher value of standard deviation in RINTA is volatility of changing interest rates but with the given about of mean of RINTA there exist a medium volatility.

Table 5.10 Descriptive Statistics

VARIABLE	OBS	MEAN	STD. DEV.	MIN	MAX
RNFTA	450	1.12	.44	.16	3.57
ROE	450	14.76	6.17	.35	46.89
SBDTD	450	32.04	10.47	5.76	74.85
RNPA	450	1.22	1.06	.01	7.18
RPRTA	450	33.40	6.89	13.03	64.45
RINTA	450	8.21	1.07	2.71	11.23
CAR	450	10.20	4.44	4.88	55.93
OEXTA	450	1.96	.65	.76	5.00
LNTA	450	11.07	1.38	6.88	14.53
RLTA	450	77.46	35.89	42.10	487.04

Source: Computed results

The mean value of RINTA and RNFTA stands at 8.21 and 1.123 depicting a higher amount of traditional business in the Public and Private Sector banks in India against non-traditional business. The mean value captures a high value of traditional business

in the in India over non-traditional business of banks. The table represents highest standard deviation of loan to deposit/asset ratio followed by secured advances to total advances. The highest mean is held by the priority sector loan to total advances depicting higher amount of loan granted to priority sector.

Table 5.11 presents the correlation matrix of the explanatory variables and dependent variable. The correlation analysis enables to understand the linear association between the variables. The correlation coefficient ranges between -1 and +1 .The variables can be either positively related or negatively related. It basically helps in identifying the critically important variables. From correlation matrix of the dependent and explanatory it can be witnessed that the correlation between most of the regressors is significantly low below 0.50 which depicts an absence of multicollinearity among the variables. As expected the ratio of non-fund based income is a negative correlated between the ratio of interest income and priority sector lending. As banks engaged in traditional business and the banks prioritizing the lower income group people in the economy are less inclined towards non-fund based income.

The correlation matrix depicts a positive relationship between the non-fund based income and bank size depicting the involvement of larger banks in non-fund based income of the banks. The relationship between the loan to asset ratio and non-fund based income is positive depicting a positive rise in the traditional activities lead to an improvement of the non-fund based activities in the public and private sector banks. The study expects a negative sign between the loan to asset and non-fund based income if the banks are primarily driven by the non-fund based income or vice versa. As per the correlation matrix it can be observed that the bank income is driven by both traditional and non-traditional sources of income.

Table 5.11 Correlation Matrix

ARIABLES	RNFTA	ROE	SBDTD	RNPA	RPRTA	RINTA	CAR	OEXTA	LNTA	RLTA
RNFTA	1.000									
ROE	0.186	1.000								
SBDTD	-0.041	0.015	1.000							
RNPA	-0.228	-0.334	-0.100	1.000						
RPRTA	-0.171	0.086	-0.006	-0.004	1.000					
RINTA	-0.076	-0.056	-0.298	0.122	0.057	1.000				
CAR	0.055	-0.062	0.072	-0.229	-0.031	-0.021	1.000			
0EXTA	0.252	-0.064	0.496	-0.221	0.004	0.023	0.210	1.000		
LNTA	0.060	0.128	0.018	-0.002	0.036	0.039	-0.013	-0.053	1.000	
RLTA	0.039	-0.021	-0.142	-0.089	0.163	-0.305	0.080	-0.070	-0.025	1.000

Source: Computed results

Table 5.12 represents the Variance Inflation Factor (VIF) of the variables under study. The values of VIF is below 10 for all variables depicting that the variables under study are free from multicollinearity (Shah et al., 2018; Hassan and Marimuthu,2016).

Table 5.12 Variance Inflation Factor

VARIABLES	VIF	1/VIF
SBDTD	1.910	0.524
OEXTA	1.810	0.554
LNTA	1.650	0.605
RPRTA	1.530	0.654
RLTA	1.410	0.709
RINTA	1.410	0.709
RNPA	1.380	0.727
CAR	1.230	0.813
ROE	1.230	0.813
Mean VIF	1.500	

Source: Computed results

After performing the preliminary analysis the study moves forward with the first model estimation where the analysis of determinants of NFBI is conducted on the public and private sector banks in India during the period 2005-06-2014-15.Table 5.13 presents the panel data regression analysis of non-fund based income and bank characteristics and helps in determining the affect of the banks characteristics involved in improving the non-traditional activities in the bank. The panel data analysis is based on the first model of the study described in equation (1). The model

has been estimated by using the fixed effect model and random effect model. Both the models have used the same variables along with the time fixed effect. From the estimated result Random effect Model (REM) is selected on the basis of the Hausman test after obtaining a *Chi* (sqrd) value of 9.72 and a probability value of 0.33 which is more than 5%. The R^2 value of the random effect model stands at 0.48% which indicates 48 % of variance of dependent variables is explained by independent variables.

Table 5.13 Panel Data Regression Result- Dependent Variable RNFTA

VARIABLES	FIXED EFFECT MODEL		RANDOM EFFECT MODEL	
	COEFFICIENTS	T-STATISTICS	COEFFICIENTS	T-STATISTICS
ROE	.006**	2.49	.006**	2.42
SBDTD	-.005	-1.57	-.006**	-2.49
RNPA	-.042***	-2.81	-.037**	-2.57
RPRTA	.002	0.59	.002	0.82
RINTA	-.085***	-3.13	-.065***	-2.78
OEXTA	.345***	7.31	.306***	7.54
CAR	-.008*	-1.86	-.008**	-1.97
RLTA	.001	-0.09	.001	-0.09
LNTA	.07	1.00	.136***	3.65
DATM	-	-	.429	1.51
APVT	-	-	.345***	.556***
y2	.015	0.30	.759***	-0.16
y3	.241***	3.73	.178***	3.08
y4	.285***	3.61	.194***	2.90
y5	.208***	2.60	.116**	1.83
y6	-.059	-0.66	-.158**	-2.35
y7	.017	0.15	-.123	-1.47
y8	.06	0.48	-.1	-1.09
y9	.048	0.37	-.118	-1.28
y10	.121	0.89	-.049	-0.52
Constant	.422	0.55	-.914*	-1.78
Observation	450		450	
Prob (F-statistics)	0.000		0.000	
F test	11.804		258.67	
R^2	0.42		0.48	
Durbin Watson Stat	2.01			
Hausman Test Stat	*Chi* (sqrd) 9.72			
	Prob> *Chi* (sqrd) (0.37)			
Model chosen	Random effect Model			

Source: Computed results

*Note: *** p<.01, ** p<.05, * p<.1*

The value of Durbin-Watson statistics stands at 2.01 which are within the range of 1.5 to 2.5 depicting that the model is free from the problem of autocorrelation. As per findings of the random effect model, various explanatory variables are significant in determining the predictors of non-fund based income of the public and private sector banks in India. From the above table it is observed that RINTA is negative at 1% level. OEXTA and LNTA are significant at 1% level and are positively related to RNFTA. ROE is positive and significant at 5% whereas SBDTD, RNPA AND CAR are negative and depicts significance levels of 5%.ATM dummy variables, RLTA and RPRTA are insignificant. The model suggests that 2007, 2008, 2009 are positively significant at 1% level .Year 2010 and 2011 are positively significant at 5% level. Whereas 2012, 2013, 2014 and 2015 stands insignificant. The result further depicts that the dummy variable for private sector banks are positively significant at 1% level, informing that the non-fund based income in private sector banks is better than the public sector banks. The constant depicts the affect of the dummy variable which indicates a significant and positive affect on the NFBI of the banks. As per the significance level depicted in constant the study reveals that the public sector banks are significant and are positively related to NFBI. The positive value of the dummy depicts that the contribution of private sector banks in NFBI is higher than public sector banks in India.

The findings suggest that an increase in 1% OEXTA would increase the non-fund based income of the banks by .345% depicting the increasing NFBI is accompanied by increase in the expense of the banks. The result suggests a negative relationship between interest income and non-fund based income. The study had expected a negative relationship between ROE and RNFTA but the findings suggest that there is a significant but positive relationship between ROE and RNFTA. Further a positive

relationship was expected between SBDTD, CAR, RINTA, and DATM but a negative relationship was encountered in SBDTD,CAR and RNFTA. DATM and RTLA were found to be insignificant on NFBI of public and private sector banks. A negative relationship was expected in the RPRTA and RLTA but RPRTA and RLTA were found to be insignificant. The result suggests a positive and significant relationship between the LNTA, OEXTA and RNFTA as expected.

Most of the variables studied are significant which enables the study to reject the null hypothesis and conclude that the NFBI is unevenly spread over the decades except for 2012, 2013, 2014 and 2015 as these years were insignificant. The dummy variables of private banks are highly significant indicating that the proportion of NFBI of private and public banks differ among the two banks. Further seeing the significance level of different bank specific variables it can be said that factors like ROE, SBDTD, RNPA, RINTA, OEXTA, CAR,LNTA except RPRTA and RLTA significantly affects NFBI of the public and private sector banks in India.

5.7. CONCLUSION

On the basis of the trend analysis of NFBI of public and private sector banks over the period 2006-2015 it was found that the mean of NFBI is higher in private sector banks followed by SBI and its associates and nationalised banks. It is found that the ratio of NFBI in private sector is higher than compared to the public sector banks. The majority of NFBI of public and private sector banks are earned from commission, exchange and brokerage in both the banks but the proportion of this income is higher in private sector banks which stand at 10.61 in 2015 compared to 4.32% in public sector banks. After commission, exchange and brokerage the income earned from other NFBI is followed by net profit (loss) from exchange transaction, net profit(loss)

from sale of investment and miscellaneous income in private sector banks. The major reason behind the higher NFBI of private banks are that they have started to diversify more in order to mitigate the risk of changing interest rate and interest income and possibly due to lower Non-Performing Asset of the private sector banks than public sector banks. Compared to the bad asset of private banks, the NPA of public sector banks are higher and they rely more on interest income over NFBI of the banks. From the findings it is observed that the private sector banks have grown beautifully as per the requirement of the customer and are better in adopting the technological advancement due to which private sector banks have succeeded in outperforming public sector banks in India. The performance of public sector banks in terms of NFBI is quite low compared to the private sector banks as these banks rely mainly on interest based income of the banks rather than non-interest income of the banks.

As per the results obtained from the panel data regression model it can be concluded that the NFBI of the public and private sector banks were significantly affected by different bank parameters. Further the results suggest that NFBI are unevenly spread over the years which means that NFBI increased from 2006 -2012 and remained stagnant or changed in small proportion among the banks from 2012 -2015. A closer investigation further elaborates that the proportion of NFBI is different in public and private sector banks as private sector banks generate more income from NFBI.

The panel data regression model was run on both Fixed effect Model (FEM) and Random effect Model (REM) and on the basis of the result obtained from the Hausman specification test REM was selected. As per the result of REM almost all the variables were found to be highly significant except RLTA, RPRTA and DATM. The results suggest that an efficient bank/well managed banks is more inclined

towards NFBI and more likely to generate NFBI which supports literature like (Pennethur et al., 2012) and contrast the result of literature like (DeYoung & Rice,2004). The result further reports that if the banks are more inclined towards traditional activities then they prefer not to venture in diversification into NFBI.it is well supported by the fact that the ratio of demand and savings deposit to total deposit and RINTA were highly significant but negatively related to RNFTA .

The panel data regression model also suggests that the banks with higher CAR prefer not to invest into non-traditional activities as suggested by literature that banks with higher CAR tend to shift their focus from traditional to non-traditional activities. The obvious concept of improvement of NFBI by the usage of technology in the form of ATM is rejected as the improvement in the ATM services does not have any affect on the level of NFBI of the public and private sector banks in India as the values are not significant to RNFTA.

The present study tried to find the relationship between RNFTA and RPRTA in order to understand if there exist any reason on the preference of NFBI if the banks are more inclined towards providing priority sector loan but no significant result could be obtained from the regression and there exist no affect of the same on the public and private sector banks in India. It was found that as banks tend to shift towards NFBI their operating expense also increases over time. Further it reveals that as banks loan quality in the form of NPA increases they do not tend to drift towards NFBI of the banks. This situation is well captured in public sector banks as even though they have a high NPA but they haven't preferred diversifying into NFBI.

The study also revealed that larger banks tend to prefer non-traditional income to a greater extent and this is captured by the LNTA as one of the highly significant values

in the model. This finding suggests that the NFBI is highly accepted by larger banks in India than the smaller banks. The present study finds that the larger private sector banks are more inclined towards generating income from non-traditional sources compared to the public sector banks in India.

On the basis of the result obtained the study reject all the three null hypothesis and accept the alternative hypothesis as the study found significant evidence to support that various bank specific factors highly affects the NFBI of the banks, the proportion of NFBI are unevenly spread over the years except in the years between 2012-2015 . The study further revealed that there is a huge difference between the preference of NFBI by the public and private sector banks in India. As private sector banks are more involved in NFBI than the public sector banks in India.

In the next chapter, the study has tried to investigate the influence of NFBI on the financial performance and the bank earning variability due to the presence of NFBI in the public and private sector banks in India.

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CHAPTER 6

NON-FUND BASED INCOME AND FINANCIAL PERFORMANCE: A PANEL REGRESSION ANALYSIS

6.1. INTRODUCTION

In the previous chapter, we analysed income sources of the banks by studying the trend of income on the basis of different ratios related to Non-interest income, net interest margin (NIM), interest income and various components of other income. The previous chapter tried to assess the influence of different bank specific factors/traditional activities/bank characteristics on the NFBI of the public and private sector banks in India. In this chapter, the study tries to find whether NFBI has an influence in the financial performance of the bank with the help of panel data regression. This chapter is segregated into two different sections where, the first section consists of the study of the relationship between various NBFI on the financial performance of banks under study and last section includes risk adjusted return on asset considering various traditional activities and non-traditional activities of banks.

The present chapter analyses the influence of NFBI on the financial performance of the banks for a period of 10 years. The analysis of the panel data regression model is based on balanced panel data.

6.2 OVERVIEW OF NFBI AND FINANCIAL PERFORMANCE OF THE SCBs

In the modern era the importance of NFBI on the financial performance of the banks has increased drastically. The increase in the diversification of the income has resulted in the importance of its study in a depth manner to understand its affect on

the financial performance of the banks. The banking institutions are highly affected by the increase in Non-Performing loan, rise in competition and changing technology (Dimitrios et al., 2016). The changing banking business has led the banks to diversify its income source from traditional activities to non-traditional activities and this is mainly done to lower the irregularities of interest income of the banks. Many prominent Studies in US has depicted that non-interest income holds 40% of the total income in the banks (DeYoung & Rice 2004; Busch & Kick, 2009). The studies conducted in different countries provides varying results as some of the studies claims a positive affect of diversifying into non-interest income in the financial performance of the banks (Chirazzo et al, 2008;Alhassan &Tetteh,2017) .Whereas , some studies claim that diversifying income can reduce profitability and increase the income volatility of the banks(Berger et al.,2010;Mercieca et al. 2007).

Most of the studies mentioned above has used panel data regression to find out the result as it has many benefits over cross-sectional and time series data due to its ability to provide more accurate inferences, more degrees of freedom and less multicollinearity (Hsiao, 1985).the studies have mostly used common parameter ROA to calculate the financial performance of the banks. This chapter has incorporated Risk-adjusted Return on Asset as a parameter to examine the volatility of income source diversification in the banks (Craigwell & Maxwell, 2006). Shifting from traditional activities to fee generating income has so far succeeded in reducing the income volatility but most empirical studies have cleared that this concept is not applicable at a larger picture. Therefore, finding out the impact of income source diversification and its affect on the financial performance of the banks becomes important.

6.3 VARIABLES CONSIDERED IN PAST STUDIES

Various studies on NFBI of banks and its affect on the financial performance of the banks has been conducted in the past in and outside India. Out of many studies conducted outside India, the important ones which are taken into consideration for the selection of the variables include (DeYoung & Roland, 2001), (DeYoung & Rice, 2004), (Craigwell & Maxwell, 2006), (Chirazzo et al ,2008), (Stiroh, 2004), (Merceica et al.,2007)and the reference study conducted in India includes (Pennathur et al.,2012), (Ahamed ,2017).

The major variable used in the study as dependent variables are Return on Asset(ROA)and Risk-adjusted Return on Asset (RAROA). The ROA and RAROA is used as an indicator of financial performance and measures of volatility of return of the banks respectively. The RAROE is used as an indicator to understand how well a bank utilizes the shareholder's fund. The ratio of non-interest income of the bank is some or the other way affected by the technological change, bank strategy, firm size and loan quality (DeYoung & Rice, 2004; Craigwell & Maxwell, 2006). In the study the variable used to check the technological development is determined by the usage and introduction of ATM by the banks. Natural Log of total asset of the banks are used to estimate the firm size.

6.4 Trend of Return on Asset (ROA) and Risk-adjusted Return on Asset (RAROA)

Table 6.1 and figure 6.1 presents the Return on Asset (ROA) of public sector banks and private sector banks during the period 2006-2015. The ROA of banks are calculated by dividing the net earnings of the bank to total asset ROA depicts how

well the firm is utilising its asset Higher the ROA the better and it signals that the banks are utilising its asset efficiently (Githaiga et al., 2019).

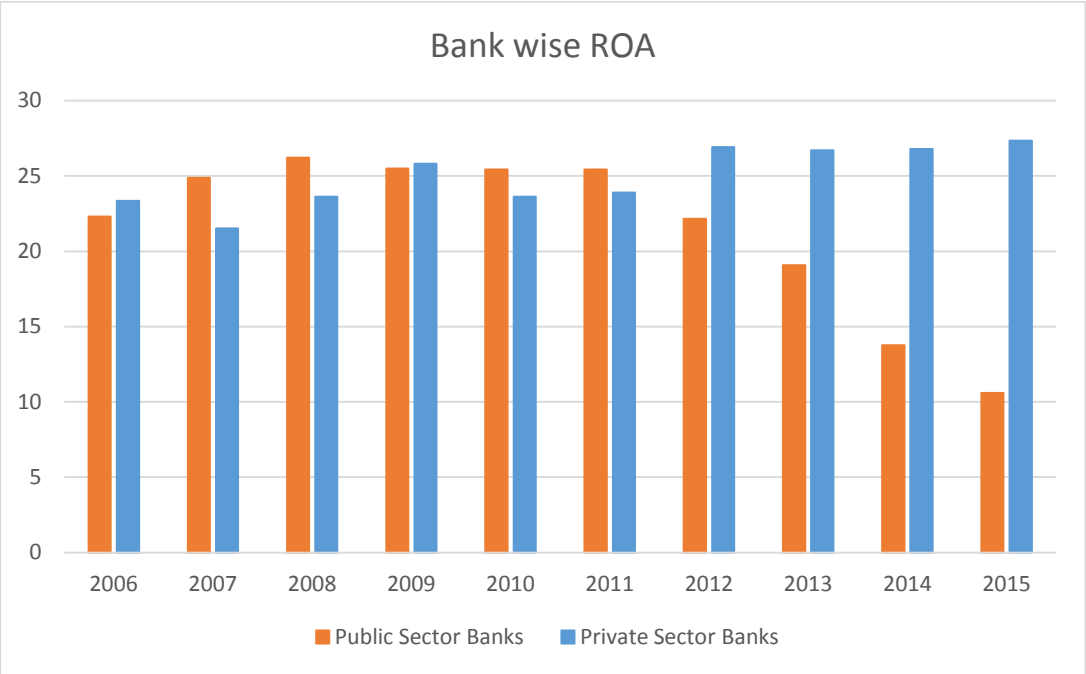
It can be observed that the ROA of Public and Private sector banks stands at 10.59 and 27.34 respectively in 2015. As per the data, the ROA of public sector banks has decreased drastically over the period of the study compared to the private sector banks. Various changes in the policies and the new entrants of banks have affected the ROA of the public sector banks. It is observed that the private sector banks have succeeded in handling the rising competition and affectively using the asset of the bank.

Table 6.1 Return on Asset of Indian Banking Sector

Year	Public Sector Banks	Private Sector Banks
2006	22.31	23.34
2007	24.89	21.52
2008	26.22	23.63
2009	25.49	25.81
2010	25.44	23.62
2011	25.43	23.91
2012	22.16	26.91
2013	19.08	26.70
2014	13.76	26.79
2015	10.59	27.34

Source: Compiled from RBI

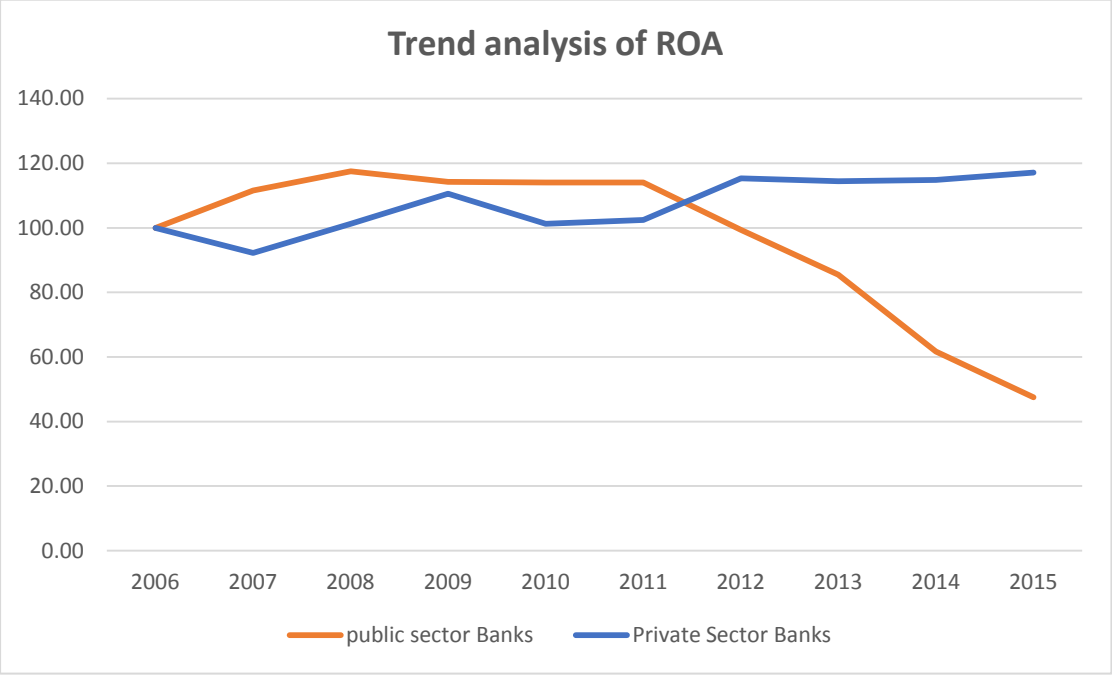
Fig 6.1 Bank Group-wise Return on Asset (ROA)



Source: Computed figure

The ROA of public sector banks stands at 22.31 on 2006 which has declined to a greater extent and stands at 10.59 in 2015 which is quite low when compared with private sector banks. The performance of private sector banks is consistent and has been gradually increasing and has succeeded in performing better than the public sector banks even if the number of the private sector banks in India are less than the public sector banks. From the above figure and table it can be observed that the ROA of private sector banks have increased consistently whereas the ROA of public sector banks have shown an instable and inconsistent figure over the period of the study. The main reason for a lower value of ROA of public sector banks is increasing Non-Performing Asset (NPA) .

Fig 6.2 Bank Group-wise trend analysis of Return on Asset (ROA)



Source: Computed figure

Figure 6.2 presented above illustrate the trend of ROA of public and private sector banks in India during the period 2005-2015. The analysis depicts that the ROA of private sector bank is steady and increasing at a consistent rate compared to the public sector banks. The trend public sector bank in terms of ROA is lower and has a decreasing trend over the years. The trend analysis shows a different result wherein it depicts that the private banks are efficiently utilising the asset of the banks. During 2007, the ROA of private sector banks is lower than public sector but with the time the performance of private banks are better than public sector banks.

Table 6.2 and figure 6.3 depicts the average Risk-adjusted Return on Asset (RAROA) of different banks under study during the period 2005-06 to 2014-15. The risk-adjusted return on asset is obtained by dividing the ROA of individual banks by the standard deviation of the ROA of total banks for each period. It is treated as the

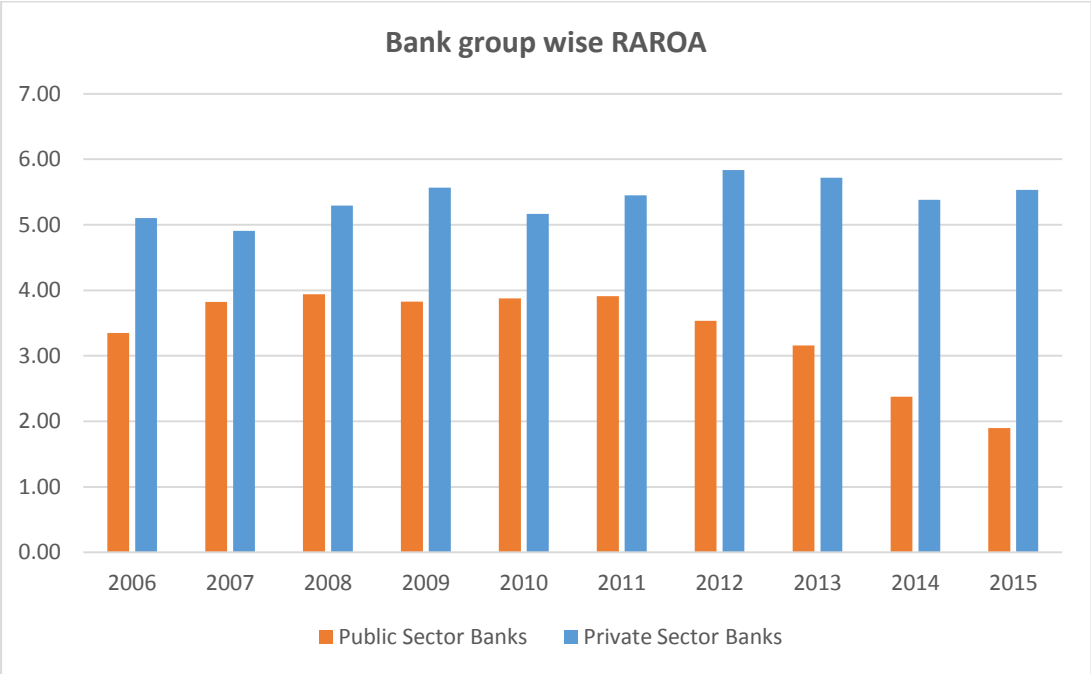
Sharpe ratios which helps in determining the volatility of the return (Stiroh, 2004; Chirazzo et al, 2008).

Table 6.2 Risk-adjusted Return on Asset of Indian Banking Sector

Year	Public Sector Banks	Private Sector Banks
2006	3.35	5.10
2007	3.82	4.91
2008	3.94	5.29
2009	3.83	5.57
2010	3.88	5.17
2011	3.91	5.45
2012	3.53	5.84
2013	3.16	5.72
2014	2.38	5.38
2015	1.90	5.53

Source: Computed value

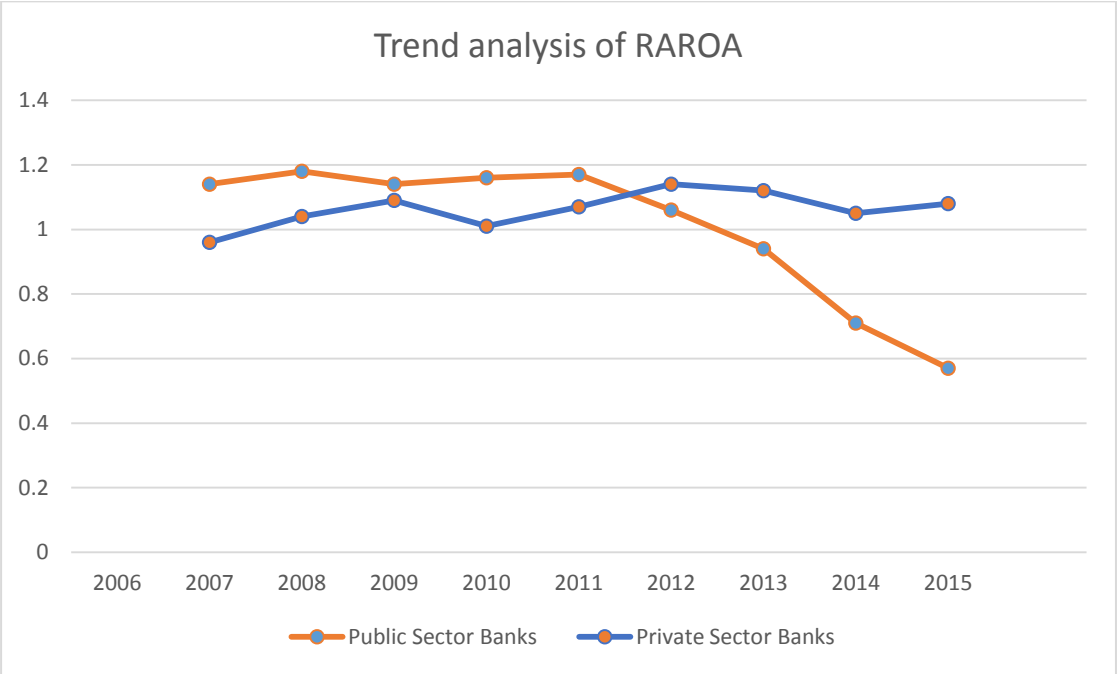
Fig 6.3 Risk-adjusted Return on Asset (RAROA) of public and private sector banks



Source: Computed figure

The risk adjusted return of banks under study reveals that the private sector banks are able to manage the risk on return efficiently compared to public sector banks under study. The values of RAROA illustrated above signify that the RAROA of public sector banks started to decline from 2011 onwards. In 2015, the value of RAROA of public sector banks is the lowest meanwhile the RAROA of private sector banks are consistent and increasing affectively depicting improved performance of the private banks over other two banks under study. The main reason for improved risk adjusted return on asset of private sector banks is increase in net interest income and better adjustment with the changing banking environment by maintaining a balance of credit over the period of time whereas the main culprit for public sector low performance over the years is their inability to recover their loans.

Fig 6.4 Bank Group-wise trend analysis of Risk-adjusted Return on Asset (RAROA)



Source: Computed figure

Trend analysis illustrated in Fig 6.4 shows the trend of RAROA of private sector banks and public sector banks during the period 2006-2015. An analysis of the risk-adjusted return on asset trend shows that the risk-adjusted return of private sector banks are higher than public sector banks but is. The trends of RAROA of private banks are lower but consistent and have an increasing trend. The reason for higher RAROA of private sector banks is because it focuses more on wholesale banking activities over traditional banking activities as the other income helps in adjusting the risk of variable interest income than public sector banks. The trend of RAROA of public banks shows a higher and increasing trend of return initially but the risk-adjusted return started declining from 2008 after the financial crisis and the major other reason for its decline is a stiff competition from other banks. Previously

majority of the banking business were concentrated to public sector banks but due to different banking reform several banks with affective products have come up in the market. The risk-adjusted return of public banks has a declining trend after 2008. The performance of public sector banks is depressing given its number of banks compared to private banks.

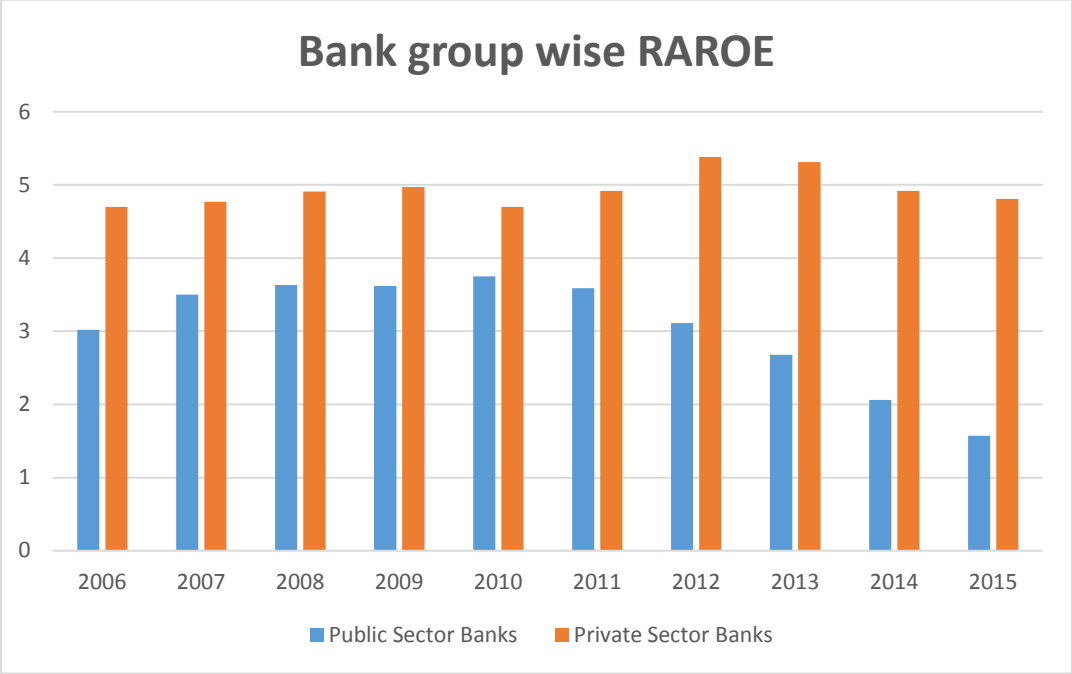
Table 6.3 and fig 6.5 depicts the average Risk-adjusted Return on Equity (RAROE) of public and private sector banks during the period 2006-2015. The RAROE of private sector banks are better than the public sector banks. The RAROE on 2006 of public and private sector banks stood at 3.02 and 4.70 respectively and again it reported its value at 1.57 and 4.81 during 2015 depicting a consistent and increasing trend of RAROE of private sector banks compared to the public sector banks.

Table 6.3 Risk-adjusted Return on Equity of Indian Banking Sector

Year	Public Sector Banks	Private Sector Banks
2006	3.02	4.70
2007	3.50	4.77
2008	3.63	4.91
2009	3.62	4.97
2010	3.75	4.70
2011	3.59	4.92
2012	3.11	5.38
2013	2.68	5.31
2014	2.06	4.92
2015	1.57	4.81

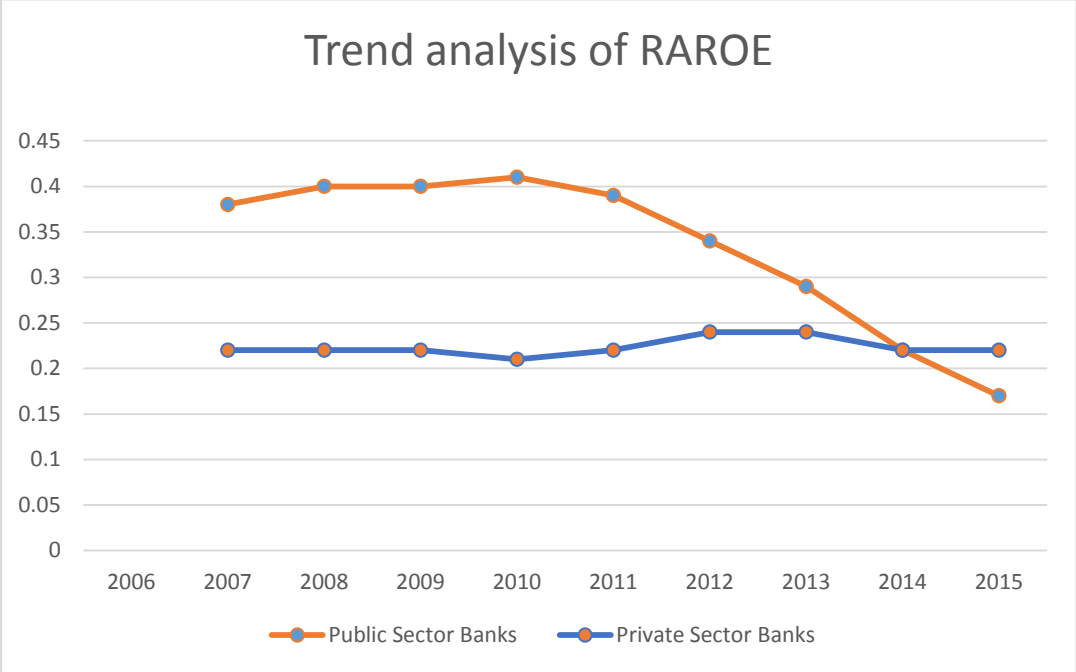
Source: Computed value

Fig 6.5Risk-adjusted Return on Asset (RAROE) of public and private sector banks



Source: Computed figure

Fig 6.6Bank Group-wise trend analysis of Risk-adjusted Return on Equity (RAROE)



Source: Computed figure

6.5 OBJECTIVES AND HYPOTHESIS OF THE STUDY

The present study is based on the objectives and hypothesis framed to investigate the influence of NFBI in financial performance of the public and private sector banks in India during 2005-06 to 2014-15 spread over the period of ten years. The study has used the term Risk-adjusted Return on Assets RAROA and Risk-adjusted Return on Equity as RAROE. The objectives and hypothesis formulated are defined as under:

1. To investigate the influence of Non-Fund Based Income (NBFI) on Return on Asset (ROA), Risk-adjusted Return on Asset (RAROA) and Risk-adjusted Return on Equity (RAROE)

$H_{01=}$ There is no effect of NFBI on ROA, RAROA and RAROE.

H_{a1}= There is an effect of NBFI on ROA, RAROA and RAROE.

6.6. EMPIRICAL MODEL

6.6.1 SPECIFICATION OF VARIABLES

After referring to different literature it was found that several studies have extensively used Return on Asset (ROA) (Githaiga et al., 2019; Bailey-Tapper, 2010; Zouari & Taktak, 2014) as the indicator of financial performance of banks. The present study has chosen ROA to determine the financial performance of the banks under study. ROA are used as a dependent variable to various bank specific independent variables to analyse the financial performance of the banks. As per the literature and the objective of the study, mainly three dependent variables are used in this study where the dependent variables like ROA, RAROA and RAROE are used.

The variables used in the study are mentioned below:

6.6.1.1 DEPENDENT VARIABLE

Return on Asset (ROA): It is an indicator of determining the financial performance of the company on the basis of its total asset ROA helps in understanding how well the asset of the company is used by the management to generate earnings. Return on Asset is a profitability ratio which determines the net profit (net income) generated on total asset of the company. ROA is obtained by dividing net income by average total assets.

$$ROA = \frac{Profit\ after\ tax}{Average\ total\ asset} \times 100 \qquad (1)$$

Risk-adjusted Return on Asset (RAROA): Risk-adjusted Return on Asset is used as an indicator to determine the variability of bank earning. RAROA helps in understanding the risk associated with the net income of the bank. It becomes important to study the volatility level of non-interest income as non-interest income is more volatile than compared to interest income (Smith at al., 2003) Risk adjusted return on asset or risk is calculated taking into consideration the standard deviation of bank performance to validate volatility of return. The researcher has taken Sharpe ratios or risk adjusted return or RAROA, RAROE like in the studies of (Stiroh 2004;Chiorrazo 2008). The value of RAROA and RAROE 4The formula is as follows:

$$RROA = \frac{ROA_{i,t}}{\sigma ROA_{i,t}} \qquad \textbf{(2)}$$

Risk-adjusted Return on Equity (RAROE): The present study has used RAROE to determine the variability in the bank earning. RAROE determines the affect of non-fund based income on the risk return trade-off of the banks studies conducted in US Commercial banks which suggests that the increase in non-fund based income lead to poor risk return trade-off of U.S Commercial banks (DeYoung & Rice, 2004).

$$RROE = \frac{ROE_{i,t}}{\sigma ROE_{i,t}} \quad \textbf{(3)}$$

6.6.1.2 VARIABLES USED IN THE STUDY

The study has used different explanatory variables for two different models as per the requirement of the study. The explanatory variables are based on the independent variables such as RINTA, RNPA,RLTA are undertaken from (DeYoung & Rice, 2004; Craigwell & Maxwell, 2006;Pennathur et al., 2012) and the variables like RAROA and RAROE is derived using the similar method used in the study (Chirazzo et al ,2008) . Natural logarithm of total asset is traditionally used as the size of the banks in almost all the literature referred and assumed that larger banks should diversifying into non-interest income (DeYoung & Rice,2004) another study found a contrasting result . The operating expenses is used as a driver of ROA along with non-interest income (Isshaq et al.,2019) and found to have a positive affect. Bad loans and CAR are used as an important explanatory variable against ROA (Saunders & Walters, 2016). NPA is expected to have a negative relationship with ROA as per the literature (Bawa et al., 2019) so the study expects a negative relationship. CAR and loan to asset ratio is found to have a positive relationship with ROA (Juwita et al., 2018). Operating expenses is expected to have a negative relationship with ROA. The

summary of the variables studied with dependent variable ROA and RAROA/RAROE is presented in table 6.4 and 6.5 respectively.

Table 6.4: Summary of the variables-ROA

Dependent variable	**Proxy**	**Measurement**	
Financial performance	ROA	(Net profit after tax/total asset)*100	
Independent variable	Proxy	Measurement	Expected sign
Core ratio	$SBDTD_{it}$	Ratio of demand and saving bank deposit to total deposit	(+)
Loan quality	$RNPA_{it}$	Ratio of non-performing asset to total advances	(+)
Priority Sector loan	$RPRTA_{i,t}$	Ratio of priority sector advances to total advances	(-)
Ratio of non-interest income/NFBI to total asset	$RNFTA_{it}$	Ratio of non-interest income to total asset	(+)
CAR	CAR_{it}	CAR tier 1	(+)
Operating expense	$OEXTA_{it}$	Ratio of operating expense to total asset	(-)
Bank Size	$LNTA_{it}$	Log of total asset	(+)
Lending strategy	$RLTA_{it}$	Ratio of loan to asset	(-)

Source: Based on literature

Table 6.5: Summary of the variable studied where dependent variable is RAROA/RAROE

Dependent variable	**Proxy**	**Measurement**	
Risk –adjusted Return on Asset/Equity	RAROA/ RAROE	$ROA_{i,t}$ / $\sigma ROA_{i,t}$o$RAROE_{i,t}$ / $\sigma ROE_{i,t}$	
Independent variable	Proxy	Measurement	Expected sign
Core ratio	$SBDTD_{it}$	Ratio of demand and saving bank deposit to total deposit	(-)
Loan quality	$RNPA_{it}$	Ratio of non-performing asset to total advances	(+)
Priority Sector loan	$RPRTA_{i,t}$	Ratio of priority sector advances to total advances	(+)
Ratio of non-interest income/NFBI to total asset	$RNFTA_{it}$	Ratio of non-interest income to total asset	(+)
CAR	CAR_{it}	CAR tier 1	(+)
Operating expense	$OEXTA_{it}$	Ratio of operating expense to total asset	(-)
Ratio of secured advance to total advances(used in RAROE)	$RSATA_{it}$	Ratio of secured advances to total advances	(+)
Bank Size	$LNTA_{it}$	Log of total asset	(-)
Lending strategy	$RLTA_{it}$	Ratio of loan to asset	(-)
One period lagged value of RAROE(in eq 6)	$LRAROE_{it-1}$	One period lag of RAROE	(+)

Source: Based on literature

6.6.2 DATA AND SAMPLE

The study is based on a panel data regression model and consists of data of banks operating in India. The data for the same is obtained from various publication of RBI like Report on Trend and Progress of Banking in India, Database on Indian Economy,

statistical table relating to SCBs in India and annual data releases. The study includes SBI and its Associates, Nationalised Banks and Private Sector Banks. The findings are based on bank group-wise in the form of public and private sector banks in India. The panel data consists of 45 banks studied over the period of 10 years with 450 observations from 2005-06 to 2014-15.

6.6.3 METHODOLOGY

According to the objectives and several literatures reviewed, the present study is based on second and third model .Where the first model tries to check the relationship of different bank specific factors on the ratio of non-fund based income of the banks under study and this model has been discussed in the previous chapter. The second model determines the financial performance of banks taking into consideration the ratio of non-fund based income as the independent variable. The financial performance is observed with the help of widely used ratio i.e ROA. Lastly the third model of the panel data observes the risk associated with the bank earning where the independent variable remains same but the dependent variable is Risk-adjusted Return on Asset (RAROA) and Risk-adjusted Return on Equity.

The present study analyses the financial performance of the SCBs in India with reference to the non-fund based income of the banks. The study has used panel data analysis to interpret the data with the help of fixed effect and random effect model, which is chosen by conducting a Hausman specification test. In order to inculcate the effect of cross section the study has chosen fixed effect model over Pooled regression model (Ordinary Least Square). The fixed effect model and random effect model is able to bring more robustness in the result of a cross section analysis where same variables are studied over the period of time compared to OLS regression model

(Woolridge 2010). As discussed earlier there are three equations in the study and all the three equation have different outcome and varied dependent variables. Each of the equation are discussed simultaneously as under:

6.6.3.1 FINANCIAL PERFORMANCE OF SCBs

The financial performance of the SCBs are ascertained by ROA. The independent variables of the respective ratio is presented in equation 4. Equation (4) consists of dependent variable ROA and the explanatory variables used are

$$ROA_{i,t} = ROA_{i,t} = \alpha + \beta_1 RNFTA_{i,t} + \beta_2 SBDTD_{i,t} + \beta_3 RNPA_{i,t} + \beta_4 RPRTA_{i,t} + \beta_5 CAR_{i,t} + \beta_6 OEXTA_{it\,i,t} + \beta_7 LNTA_{i,t} + \beta_8 RLTA_{i,t} + \beta_9 TIME_t + u_i + \varepsilon_{i,t} \quad \textbf{(4)}$$

The present study expects a positive relationship between ratio of non-fund based income and ROA both as it is assumed that well managed banks are able to attract customers and succeeds in providing efficient personalised services to its customer and finally leads to an increase in non-intermediaries activities of the banks.

6.6.3.2 RISK-ADJUSTED RETURN ON ASSET (RAROA)

The present study has utilised Risk-adjusted Return on Asset and Risk-adjusted Return on Equity to capture the variability of bank's earning as a dependent variable.

$$RAROA_{i,t} = \alpha + \beta_1 RNPA_{i,t} + \beta_2 RNFTA_{i,t} + \beta_3 CAR_{i,t} + \beta_4 OEXTA_{i,t} + \beta_5 LNTA_{i,t} + \beta_6 RLTA_{i,t} + \beta_7 SBDTD_{it\,i,t} + \beta_8 RPRTA_{i,t} + \beta_9 TIME_t + u_i + \varepsilon_{i,t} \quad \textbf{(5)}$$

$$RAROE_{i,t} = \alpha + \beta_1 RNPA_{i,t} + \beta_2 RNFTA_{i,t} + \beta_3 CAR_{i,t} + \beta_4 OEXTA_{i,t} + \beta_5 LNTA_{i,t} + \beta_6 RLTA_{i,t} + \beta_7 RSATA_{it\,i,t} + \beta_8 RPRTA_{i,t} + \beta_9 LRAROE_{i,t-1} + \beta_{10} TIME_{i,t} + u_i + \varepsilon_{i,t} \quad \textbf{(6)}$$

For each equation different Fixed effect (FEM) and Random effect model (REM) is run and Hausman test has been used to choose the model between FEM and REM. The results and discussions of the model are elaborated as per the output obtained from the test. In equation 6 one period lagged RAROE is used to ascertain the influence of previous year RAROE on the dependent variable.

6.7 RESULTS AND DISCUSSION

In this section, the summary statistics is analysed before the results of actual model is discussed. Table 6.6 presents the descriptive statistics of the independent and dependent variable undertaken in the study during the period 2005-06 to 2014-15.The descriptive statistics defines the mean, standard deviation, maximum and minimum values of the dependent and independent variables. It observes that the mean and standard deviation of ROA stands at .98 and .45 respectively. The mean and SD of RNFTA stands at 1.22 and 1.06 depicting a medium volatility. The mean of RLTA is highest among the explanatory variables followed by RPRTA and RSDTD depicting a higher engagement in traditional activities than non-traditional activities in the banks. As per the mean value of RNFTA the proportion of non-traditional activities are lower in public and private sector banks compared to the traditional activities.

Table 6.6 Descriptive Statistics of variables used in ROA

VARIABLE	OBS	MEAN	STD. DEV.	MIN	MAX
ROA	450	.98	.45	.02	2.13
RNPA	450	1.22	1.06	.01	7.18
RNFTA	450	1.12	.44	.16	3.57
OEXTA	450	1.96	.65	.76	5.00
RLTA	450	77.46	35.89	42.10	487.04
SBDTD	450	32.04	10.47	5.76	74.85
RPRTA	450	33.40	6.89	13.03	64.45
CAR	450	10.20	4.44	4.88	55.93
LNTA	450	11.07	1.38	6.88	14.53

Table 6.7 presents the correlation matrix of the explanatory variables and dependent variable. The correlation analysis enables to understand the linear association between the variables. The correlation coefficient ranges between -1 and +1 .The variables can be either positively related or negatively related. The correlation matrix basically helps in identifying the critically important variables. From correlation matrix of the dependent and explanatory it can be witnessed that the correlation between most of the regressors is significantly low below 0.50 which depicts an absence of multicollinearity among the variables. As expected the ratio of non-fund based income is a positively correlated with ROA and depicts that shifting towards generating NFBI can improve the financial performance of the public and private sector banks. The correlation matrix shows a negative relationship between SBDTD

and ROA depicting that excessively relying on demand deposit and savings bank to a deposit is affecting the financial performance of the banks negatively

Table 6.7 Correlation Matrix of variable used in ROA

Variables	ROA	RNPA	RNFTA	OEXTA	RLTA	SBDTD	RPRTA	CAR	LNTA
ROA	1.000								
RNPA	-0.420	1.000							
RNFTA	0.483	-0.228	1.000						
OEXTA	0.060	-0.221	0.252	1.000					
RLTA	-0.014	-0.089	0.039	-0.070	1.000				
SBDTD	-0.020	-0.100	-0.041	0.496	-0.142	1.000			
RPRTA	0.006	-0.004	-0.171	0.004	0.163	-0.006	1.000		
CAR	0.218	-0.205	-0.002	0.296	0.059	0.129	0.009	1.000	
LNTA	-0.102	0.166	-0.010	-0.265	0.163	0.050	-0.379	-0.257	1.000

Source: Computed results

Table 6.8 Variance Inflation Factor (VIF)

Variables	VIF	1/VIF
OEXTA	1.64	0.610
SBDTD	1.41	0.708
RNFTA	1.23	0.812
CAR	1.14	0.873
RNPA	1.13	0.885
RPRTA	1.07	0.932
RLTA	1.07	0.934
LNTA	1.02	0.982
Mean value	1.21	

Source: Computed results

Table 6.8 presents the Variance Inflation Factor of the variable. Since the VIF value is less than 10 the study can say that the variables used in the equation (4) are free from multicollinearity.

After conducting the preliminary analysis with the help of descriptive statistics and correlation matrix, the present study moves forward with the estimation of influence of NFBI in the financial performance of the public and private sector banks in India during the period 2005-06-2014-15.Table 6.9 presents the panel data regression analysis of non-fund based income and financial performance of Public and private sector banks in India. The panel regression model is run on both FEM and REM. Further, an appropriate model is chosen as per the p-value obtained from the Hausman Specification test. As per the analysis Fixed effect Model (FEM) was selected in

accordance with the Hausman test result where *Chi* (sqrd) value of 83.53 and a probability value of (0.00) which is less than 5%.

Table 6.9 Panel Data Regression Result- Dependent Variable ROA

Variables	Fixed effect Model		Random effect Model	
	Coefficients	**t-statistics**	**Coefficients**	**t-statistics**
RNFTA	.155**	2.27	.402***	6.78
RLTA	-.002**	-2.58	.115***	3.99
LNTA	.406***	8.56	-.001	-1.41
RPRTA	.002	0.66	.06***	3.37
SBDTD	.012***	3.04	.001	0.29
RNPA	-.064***	-3.76	.009***	2.78
OEXTA	-.276***	-4.48	-.087***	-4.86
CAR	.003	0.57	-.23***	-4.54
TIME AFFECT	Included		Included	
Constant	-.038	-0.12	-.375	-1.26
Observation	450		450	
Prob(F-statistics)	0.000		0.000	
R^2	0.41		0.38	
Durbin Watson Stat	1.65			
Hausman Test Stat	*Chi* (sqrd) 83.53			
	Prob>*Chi* (sqrd) (0.00)			
Model chosen	Fixed effect Model			

Source: Computed results

*Note: *** p<.01, ** p<.05, * p<.1*

The value of Durbin Watson Stat stands at 1.65 falls under the normal range of 1.5-2.5 and suggest that the model fitted is free from autocorrelation. According to the analysis of FEM the study finds that most of the explanatory variables are highly significant except RPRTA and CAR. Variables such as RNPA, RLTA and OEXTA are negatively correlated whereas RNFTA, SBDTD and LNTA are positively correlated. The results suggest that as banks tends to diversify into NFBI they will generate more profit As per the expectation increase in operating expenses and the ratio of NPA has a negative impact on the performance of the bank. The result of RLTA is significant and possess a negative influence on the financial performance of the banks. It suggests that the decline in RLTA and operating expenses improve the ROA of the bank. The size of the banks are captured by LNTA which has a significant influence on the performance of the banks merely due to economies of scale. The study did not find a significant affect of ratio of priority sector lending to total advances (RPRTA).The coefficient value of RPRTA is positive but insignificant. Further CAR is also found to be insignificant to explain the ROA.

Table 6.10 Descriptive Statistics of variables used in RAROA and RAROE

Variable	Obs	Mean	Std. Dev.	Min	Max
RAROE	450	3.85	2.84	.031	18.03
RAROA	450	4.15	3.16	.031	19.27
RNPA	450	1.22	1.06	.01	7.18
RNFTA	450	1.12	.44	.16	3.57
OEXTA	450	1.96	.65	.76	5.00
RLTA	450	77.46	35.89	42.10	487.04
SBDTD	450	32.04	10.47	5.76	74.85
RPRTA	450	33.40	6.89	13.03	64.45
CAR	450	10.20	4.44	4.88	55.93
LNTA	450	-.14	1.85	-1.46	12.33

Source: Computed results

The descriptive statistics of the independent and dependent variables used are presented in table 6.10. The mean of RAROA and RAROE stands at 4.15 and 3.85 respectively. The SD values of RAROA and RAROE depicts the volatility of return of public and private sector banks in India. Other variables taken as same the values suggests the volatility of traditional activities is higher than RNFTA as witnessed by SD of the respective value but the fact that banks are more involved in traditional activities and given its mean values the SD depicts a medium volatility.

Table 6.11 Correlation Matrix of RAROA and RAROE

Variables	RAROE	RAROA	RNPA	RNFTA	OEXTA	RLTA	SBDTD	RPRTA	CAR	LNTA
RAROE	1.000									
RAROA	0.566	1.000								
RNPA	-0.297	-0.288	1.000							
RNFTA	0.450	0.237	-0.228	1.000						
OEXTA	0.019	-0.009	-0.221	0.252	1.000					
RLTA	-0.068	-0.076	-0.089	0.039	-0.070	1.000				
SBDTD	0.124	0.076	-0.100	-0.041	0.496	-0.142	1.000			
RPRTA	-0.091	-0.006	-0.004	-0.171	0.004	0.163	-0.006	1.000		
CAR	0.056	0.038	-0.205	-0.002	0.296	0.059	0.129	0.009	1.000	
LNTA	0.065	0.042	-0.002	0.060	-0.053	-0.025	0.018	0.036	-0.026	1.000

Source: Computed results

Table 6.11 presents the correlation matrix of RAROA and RAROE and different explanatory variables used in the study to analyze the bank earning variability. As per the matrix it can be concluded that RNPA ,RLTA and RPRTA is negatively correlated with RAROA and RAROE whereas variables such as RNFTA,OEXTA,SBDTD,CAR and LNTA is positively correlated among the variables indicating that an increase in RNFTA,OEXTA,SBDTD and LNTA helps in improving the RAROE . Further the table suggests that an increase in operating expenses decreases the risk adjusted Return on Asset of public and private sector banks. Increases in NFBI of banks increases the Risk-adjusted Return on Asset and Risk-adjusted Return on Equity of public and private sector banks.

Table 6.12 Variance Inflation Factor (VIF) RAROA

Variables	**VIF**	**1/VIF**
OEXTA	1.750	0.571
SBDTD	1.750	0.571
RLTA	1.250	0.799
RNFTA	1.250	0.802
CAR	1.150	0.872
RNPA	1.140	0.877
RPRTA	1.080	0.923
LNTA	1.020	0.978
Mean value	1.310	

Source: Computed results

Table 6.12 presents the Variance Inflation Factor of the variable. Since the VIF value is less than 10 the study can say that the variables used in the RAROA are free from multicollinearity.

Table 6.13 Variance Inflation Factor (VIF) RAROE

Variables	VIF	1/VIF
OEXTA	1.900	0.527
RSATA	1.890	0.529
LNTA	1.580	0.633
RINTA	1.410	0.708
RLTA	1.390	0.718
RPRTA	1.360	0.735
RNFTA	1.230	0.810
CAR	1.210	0.829
RNPA	1.160	0.864

Source: Computed results

Table 6.13 depicts the VIF of the explanatory variables used in RAROE . Since the VIF values of the variables are less than 10 the analysis can be identified as free from the problem of multicollinearity. After the preliminary analysis the study moves forward to the panel regression analysis of RAROA and RAROE to find out the risk associated with diversifying into NFBI.

Table 6.14 Panel Data Regression Result- Dependent Variable RAROA

	Fixed effect Model		Random effect Model	
Variables	**Coefficients**	**t-statistics**	**Coefficients**	**t-statistics**
RNPA	-.211***	-3.86	-.242***	-3.85
RFNTA	.847***	4.47	.99***	4.66
CAR	.043***	2.81	.04**	2.33
OEXTA	-.539***	-3.10	-.627***	-3.42
LNTA	.468**	2.31	-.038	-0.18
RLTA	-.005**	-2.21	-.005**	-2.00
SBDTD	.104*	1.92	.071*	1.94
RPRTA	.005	0.54	.002	0.18
TIME AFFECT	INCLUDED		INCLUDED	
Constant	1.886	2.08	3.974***	5.26
Observation	450		450	
Prob (F-statistics)	0.000		0.000	
R^2	0.48		0.33	
Durbin Watson Stat	1.98			
Hausman Test Stat	*Chi* (sqrd)			
	119.93			
	Prob>*Chi* (sqrd)			
	(0.02)			
Model chosen	Fixed Affect Model			

Source: Computed results

*Note: *** p<.01, ** p<.05, * p<.1*

Table 6.14 presents the panel regression analysis to study the influence of NFBI on RAROA. The value of Durbin-Watson statistics stands at 1.98 which is within the range of 1.5 to 2.5 depicting that the model is free from the problem of autocorrelation The equation was run for both FEM and REM and after the Hausman specification test FEM was selected as the test obtained a p-value of 0.02 which is less than 5%. The FEM depicts that all the variables used in the study are significant except RPRTA. From the analysis presented in the table it is found that RNPA, OEXTA,RLTA are negatively associated with RAROA implying that inefficient management of NPA, operating expenses and ratio of loan to asset decreases the Risk-adjusted Return on Asset(RAROA). The RNFTA, LNTA, SBDTD is significant and positively related to RAROA. The result suggests that 1% increase in non-fund based income will lead to an increase in RAROA by .847. This depicts that the banks venturing into NFBI will be able to increase risk-adjusted return on asset This finding is consistent with the findings (Chiorazzo et al., 2008; Prajapati & Shah, 2009;Baele et al.,2007;Elsas et al.,2010) and inconsistent to the findings of commercial banks of U.S which concludes that venturing into non-interest income improves return but worsens risk-adjusted return (DeYoung & Rice, 2004).

The positive relationship between the bank size and RAROA implies that larger the banks better the risk-adjusted return on asset The main reason behind this is larger banks have better risk management, information technology, human capital and lower cost of capital and this is well proved by literatures (DeYoung & Rice,2004; Demsetz & Strahan,1997;Sanya & Wolfe,2011;Gurbuz et al.,2013)

Table 6.15 Panel Data Regression Result- Dependent Variable RAROE

	Fixed effect Model		Random effect Model	
Variables	**Coefficients**	**t-statistics**	**Coefficients**	**t-statistics**
RNPA	-.196***	-3.67	-.138***	-2.71
RNFTA	.402*	1.88	.443***	2.81
CAR	-.029*	-1.81	.001	0.05
OEXTA	-.681***	-3.78	-.032	-0.38
LNTA	.224	0.93	-.305***	-2.66
RLTA	-.003	-1.40	-.002	-1.15
RSATA	-.043	-0.72	.039**	2.37
RPRTA	.014	1.22	.004	0.42
LRAROE	.322***	4.61	.903***	47.67
TIME AFFECT	INCLUDED		INCLUDED	
Constant	.467	.45	.025	.04
Observation	405		405	
Prob (F-statistics)	0.000		0.000	
R^2	0.42		0.31	
Durbin Watson Stat	1.85			
Hausman Test Stat	*Chi* (sqrd) 121.40			
	Prob>*Chi* (sqrd)			
	(0.00)			
Model chosen	Fixed effect Model			

Source: Computed results

*Note: *** p<.01, ** p<.05, * p<.1*

Table 6.15 presents the influence of NFBI and other variables on Risk-adjusted Return on Equity (RAROE) . The analysis is based on the FEM and REM . Further with the help of the Hausman specification test FEM is chosen by obtaining a p-value of 0.00. The Durbin-Watson Stat as depicted in table obtained stands at 1.85, which sits at a normal range i.e within 1.5-2.5. The value of Durbin Watson Stat depicts that the model is free from autocorrelation as the value is within the normal range. . The analysis presented in table 6.15 suggest that RNPA, RNFTA,CAR ,OEXTA and lag of RAROE is significant. The analysis depicts a negative influence of RNPA, CAR, OEXTA on RAROE. As per the information, the analysis reveals a positive relationship of RNFTA with the RAROE. This suggest that as the banks involves in NFBI it helps in increasing the RAROE of the banks. Further the analysis reveals that if the loan quality (RNPA), CAR and OEXTA affects the RAROE negatively . The size of the bank were reported to be positive but insignificant to explain the RAROE. The one period lag value of RAROE is highly significant to explain the previous year RAROE on the current year RAROE. The R square value of all the equation ranges from 42-50 % very much similar to the studies referred (DeYoung and Rice, 2004; Prajapati and Shah, 2009) depicting that there are other independent variables to explain ROA, RAROA and RAROE.

6.8. CONCLUSION

After the panel data analysis it can be concluded that loan quality, NFBI, Operating expenses, ratio of loan to asset ,demand and savings bank deposit, capital adequacy ratio, size of the bank significantly affects the financial performance of the banks in India.

It was found that NFBI is highly significant and helps in improving the financial performance of the public and private sector banks in India. As per the trend analysis it is clear that the ROA of private sector banks are better than public sector banks. One of the main reasons for decline in the profit of PSB is engagement in NPA and priority sector lending and PSB has failed to cope up with the changing customer needs compared to private sector banks. The

private sector banks have been able to balance between the traditional and non-traditional activities of the banks in a better manner than compared to the public sector banks. After referring to the analysis conducted to check the risk associated with shifting into NFBI. It was found that NFBI helps in increasing the financial performance of the bank and also increases the RAROA and RAROE. The influence of NFBI on RAROA and RAROE was found to be inconsistent with the studies of US commercial banks and in Barbados (DeYoung & Rice,2004; Craigwell & Maxwell,2006). The study revealed that diversifying into NFBI increases the Risk-adjusted Return on Asset and Risk-adjusted Return on Equity. It is found that the banks with highly engaged in traditional activities are less inclined towards NFBI.

Further a positive and significant relationship were observed in LNTA and SBDTD .The analysis suggests that as the share of profit is taken by the larger banks in India and as the size of the bank increases the probability to improve financial performance rises merely because of competitive advantage and economies of scale. As expected a positive relationship were found between CAR and SBDTD with RAROA as more the banks are able to efficiently manage the CAR,RLTA and SBDTD more the banks become capable to improve profitability and delve into NFBI/non-traditional activities of the business efficiently. The analysis of RAROE witnessed a significant and negative relationship between CAR and RNPA. It can be concluded that the higher NPA and CAR decreases the Risk-adjusted Return on Equity (RAROE). As banks with higher capital ventures into NFBI it can further add on to be riskier. It is very important for the banks to maintain an optimum diversification into NFBI and a proper balance between traditional activities and non-traditional activities of the business.

The analysis further revealed that as loan quality and operating expenses declines the financial performance of public and private sector banks improves. The result has come up as per the expected sign. The study had assumed that there exists a negative correlation between NPA and operating expenses on ROA.

The size of the bank couldn't explain the volatility of return to shareholders in the form of RAROE but was found to be significant with RAROA. The relationship between the RAROA and bank size was observed to be positive, depicting that increasing the size of the bank alone could increase the RAROA. The positive relationship between the bank size and RAROA implies that larger the banks better the risk-adjusted return on asset The main reason behind this is larger banks have better risk management, information technology, human capital and lower cost of capital and this is well proved by literatures (DeYoung & Rice, 2004; Demsetz & Strahan, 1997; Sanya & Wolfe, 2011; Gurbuz et al., 2013)

On the basis of the result obtained from the various equations we conclude by rejecting the null hypothesis of the study and accepting the alternative hypothesis and found a significant evidence that the ROA , RAROA and RAROE are significantly effected by the NFBI. Further the study concludes by mentioning that NFBI improves the financial performance. Moreover NFBI increases RAROA and RAROE on the banks in India the study is consistent to the findings such as (Chiorazzo et al.,2008;Prajapati & Shah,2009;Baele et al.,2007;Elsas et al.,2010) and inconsistent to the findings of commercial banks of U.S which concludes that venturing into non-interest income improves return but worsens risk-adjusted return (DeYoung & Rice, 2004).

The next chapter provides the summary of all the chapters and also provides a brief of the findings of the study along with recommendation and future scope of the study. Further it also provides conclusion for the study o NFBI and financial performance of the banks in India.

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CHAPTER 7

CONCLUSION AND RECOMMENDATION

7.1 INTRODUCTION

The study tried to examine Non-Fund Based Income and Financial Performance in India during the period 2005-06 to 2014-15. The study has included an analysis of public and private sector banks in the sample. In order to analyse the financial performance and NFBI in the bank's the study has tried to include three major equation where the first equation has been devised to study the determinants of NFBI taking into consideration various bank parameters in terms of ROE, core deposit, loan strategy, loan quality ,technology and ownership structure. The second and third equation is based on identifying the influence of NFBI on the financial performance of the bank with dependent variable taken as ROA and RAROA/RAROE. The ROA determines the financial performance and RAROA and RAROE helps in determining the variability of NFBI on the ROA and ROE. The study has used trend analysis and panel data regression model to analyse the result. The equation is analysed on the basis of FEM and REM which has been selected with the help of the Hausman specification test. The analysis provides a conclusive evidence that the bank parameters affects the NFBI and at the same time NFBI significantly influences the financial performance of the public and private sector banks in India.

7.2 OBJECTIVE OF THE STUDY

The present study is undertaken to understand the following objectives:

1. To analyse the proportion of Non-Fund Based Income of Scheduled Commercial Banks in India and determine the trend of share of Non-Fund based Income in Scheduled Commercial Banks over the specified period of study.

2. To make a comparative study of the proportion of non-fund based income of Public sector banks and Private sector banks and explore reasons for significant differences in proportion of non-fund based income.

3. To investigate whether traditional activities has an affect on the level of non-fund based income of the bank.

4. To investigate the influence of NFBI on Return on Asset (ROA), Risk adjusted Return on Asset (RAROA) and Risk adjusted Return on Equity (RAROE).

7.3. HYPOTHESES OF THE STUDY

To address the above issues the study uses the following hypotheses:

H_{01} = Non-fund based income (NFBI) of SCBs is evenly spread over the decade under the study.

H_{02} = There is no significance difference in the proportion of NFBI across Public and Private sector banks in India

H_{03} =NBFI is not significantly affected by the Banking parameters such as size, traditional activities, CAR, operating expenses, bank efficiency and technological development.

H_{04} = There is no effect of NFBI on ROA, RAROA and RAROE.

Similarly, the alternative hypothesis of the study is stated below:

H_{a1} = Non-fund based income (NFBI) of SCBs is unevenly spread over the decade under the study.

H_{a2} = There is a significance difference in the proportion of NFBI across Public and Private sector banks in India

H_{a3} = NBFI is significantly affected by the Banking parameters such as size, traditional activities, CAR, operating expenses, bank efficiency and technological development.

H_{a4}= There is an effect of NBFI on ROA, RAROA and RAROE.

7.4. SUMMARY OF THE CHAPTERS

This section includes the summary of the chapters included in order to provide an overview of the study and they are discussed as under:

Chapter 1: Introduction to Non-Fund Based Income and Scheduled Commercial Banks in India

This chapter provides an overview of the entire thesis. It includes the brief of the concept and importance of NFBI defines variables of the study, objectives and

hypothesis of the study. Further a brief of the chapters included in the thesis is provided in this chapter.

Chapter 2: Review of Literature.

Under this chapter, various literature referred has been compiled. The literature are segregated into four different parts which consists of literature based on banking reforms, literature based on financial performance ,literature based on NFBI and financial performance in India and literature based on NFBI and financial performance outside India . The literature are segregated in order to get a clear view of various fields affecting the NFBI and financial performance of the banks in India.

Chapter 3: Research Design

The study has presented the method of study. The research design for studying the influence of NFBI on financial performance in Indian public and private sector banks were initiated with the help of appropriate scope of the study, objective and hypothesis of the study, sample size, sources of data, period of the study, methods of the study and empirical model of the study. The basic outlook of the equation used in the study were inculcated in this chapter,

Chapter 4: Theoretical background of the study.

The study has provided a theoretical background of the study taking into account the evolution of banking sector in India, reforms of the Indian Banking sector, ownership structure of the banks in India, function of commercial banks, technological change in the sector and definition of the variables used in the study. This chapter also elaborates the sources of income of banks.

Chapter 5: Determinants of Non-Fund Based Income

In this chapter the trend analysis of NIM, ratio of interest income and non-interest income/ NFBI of SCBs is taken into consideration along with the different components of NFBI of public and private sector banks. It further includes an analysis of determinants of NFBI on the basis of various bank parameters. In order to determine the affect of bank parameters a penel data model was used to obtain the result. After obtaining the result a thorough analysis were provided. The result suggest that ROE, RINTA, SBDTD, RNPA, OEXTA, CAR, LNTA are the important determinants of NFBI. It further found private sector banks are generating more NFBI than public sector banks

Chapter 6: Non –Fund based Income and Financial Performance - A Panel Regression Analysis

After the determinants of NFBI were analysed in chapter 5 the study further examined the influence of NFBI on the financial performance of the public a private sector banks in India during 2005-06 to 2014-15. In order to come to the conclusion the study took the help of a panel regression. This chapter consists of three equations. Before the panel data analysis a summary statistics, correlation matrixes were examined. The analysis found the NFBI is a significant determinant of ROA, RAROA and RAROE.

7.5 SUMMARY OF FINDINGS

In the present study an analysis is undertaken to find an influence of NFBI on the financial performance of banks in India. The findings of the study are divided into three different heads namely; trend of NFBI, Determinants of NFBI and NFBI and Financial performance. Firstly the trends of NFBI are discussed followed by

determinants of NFBI and the influence of NFBI on ROA,RAROA and RAROE are discussed.

The trend analysis of interest income of bank group wise suggests that the interest income is higher in private sector banks followed by public sector banks and at the same time the performance of foreign banks are quite low when compared to private and public sector banks as foreign banks mainly focuses on modern banking. When the interest income to total asset were closely analysed in public sector banks it was found that the contribution of Nationalised banks are higher than SBI and it Associates. Further the analysis of NFBI/non-interest income to total asset depicts that the NFBI is higher in foreign banks. Further the involvement of private sector banks on NFBI are higher than public sector banks. The trend further informed that the SBI and its Associates are more involved in generating NFBI compared to Nationalised banks within the frame of public sector banks. the trend analysis of the various components of NFBI indicates that public sector banks earns NFBI mainly through the commission ,exchange and brokerage followed by miscellaneous income and net profit(loss) on sale of investment it was further discovered that Public sector banks are incurring loss from sale of land and other asset and revaluation of investments. Whereas the proportion of private sector banks are higher compared to the public sector banks. The private sector banks witnessed a growing trend of all kinds of income especially in commission, exchange and brokerage followed by net profit(loss) on sale of investment and miscellaneous income. The contribution of Net profit (loss) on exchange transaction has witnessed a growth in the private sector.

Due to technological advancement and fluctuating interest income the private sector banks are seen diversifying into NFBI of banks and its activities have increased at a

larger extent over the period of the study. From the trend analysis of the public and private sector banks we can conclude that the private sector banks are generating more NFBI than public sector banks as private sector banks are able to enhance the customer service and provide best service as per the requirement of the customer. The technological advancement is the other important aspect in which the private sector banks are excelling compared to the public sector banks. Basically the private sector bank has been able to capitalise the weaknesses of the public sector banks. As we know that the income from non-fund based income is mainly generated from commission, exchange and brokerage, a good customer service and an efficient technological advancement helps in improving the way in which a bank earns its NFBI. The superior customer service and technological advancement is an important aspect of the private sector banks which has indirectly helped the banks to improve its NFBI. It is observed that private banks are better able to balance between the traditional activities and non-traditional activities of the bank.

Further the study analyses the influence of bank parameters on the NFBI. The analysis of panel data regression model is based on balanced panel data. There are various bank characteristics or determinants that are considered such as ROE, core activities of the business in the form of ratio of demand deposit and savings deposit to total deposit, loan quality (ratio of Non-performing asset to total advances), ratio of priority sector advances to total advances, ratio of interest income to total asset, overheads, bank size, lending strategy (loan to asset ratio) and a technological advancement in the form of dummy ATM were undertaken. It was identified that most of the determinants were significant and found that ROE, OEXTA, LNTA were positively related to NFBI. From the result it is found that a well-managed banks tends to drift towards NFBI more to generate income in this way a negative

relationship was expected according to the study (DeYoung and Rice, 2004). But the coefficient value is quite low depicting a minimum affect on RNFTA indicating that well managed banks are slowly shifting towards NFBI and the inefficient banks are also shifting towards NFBI to improve its financial performance. As expected the increase in NFBI is positively related to OEXTA as NFBI is associated with technological cost. The larger size banks are generating more NFBI as these large banks are able to cope up well with the expenses associated with installation of Technologies or merely because of competitive advantage and economies of scale.

Further it was found that SBDTD, RNFTA, RNPA were negatively significant depicting an inverse relationship between the interest and non-fund based income of the bank. It can be concluded that the banks focusing more on traditional activities are less inclined towards NFBI. As per the expectation and literatures it reveals that the banks with lower NPA tend to drift towards NFBI.

The ownership structure was also analysed with the help of a dummy and the results suggest that the private sector banks are more inclined towards NFBI. The time affect was used to identify whether the NFBI is spread over the years, it was found that the NFBI is unevenly spread over the years from 2006 --2012 and evenly spread from 2012 -2015. Dummy variable of ATM was found to be insignificant and the reason for its significant value over NFBI could be because the study had employed usage of ATM if the charges of ATM were available with respect to the banks over study the result would have more clear on the influence of ATM on NFBI.

Further the influence of NFBI on ROA states that NFBI is highly significant and positively related to ROA. The result suggests that banks diversifying into NFBI is able to improve the financial performance of the banks in India. The core activities in

the form of demand and savings banks deposit were found to be significant and positively related to the financial performance of the banks. The degree of affect of NFBI is higher than SBDTD suggesting that banks should diversify more on NFBI to improve the financial performance and to balance the inefficiency of interest income.

The analysis suggested that bad assets (NPA) of the bank declines the financial performance of the banks. The negative effect of non-performing asset to total asset highly affects the financial performance of the banks and in return the banks has to balance the loan loss with the income of the bank and at the same time banks are faced with the strict requirement of keeping certain amount as reserve which affects the entire activities of the banks .This inversely affects the ability to venture into diversifying into NFBI.

Variables such as RNPA, RLTA and OEXTA are negatively correlated whereas RNFTA, SBDTD and LNTA are positively correlated to ROA. The results suggest that as banks tends to diversify into NFBI they will generate more profit.

The sizes of the banks are captured by LNTA which has a significant influence on the performance of the banks merely due to economies of scale and competitive advantage. The results suggests that the larger banks are enjoying a higher share of profit against smaller banks. The coefficient value of bank size is relatively higher depicting that large banks are earning affective return and the major reason behind it is its ability to diversify income as with its competitive advantage, economies of scale and availability of fund to diversify. The study did not find a significant affect of ratio of priority sector lending to total advances (RPRTA) even though its coefficient value of RPRTA is positive.

As per the expectation operating expenses has a significant effect on the financial performance of the banks indicating that if the operating expenses is not managed properly it declines the financial performance of the banks. Therefore it is important for the bank to reduce its operating expenses to improve the bank performance. The result of RLTA influence on the financial performance of the banks. The affect of RLTA on financial performance is not that high therefore we can conclude that banks with inefficient RLTA are also able to improve profitability if the banks are able to manage its operating expenses efficiently.

The analysis of risk-adjusted return on asset found that NFBI increases the RAROA and the affect of NFBI (RNFTA) were high on RAROA compared to the core deposit in the form of demand and savings banks deposit. The result suggests that the banks should venture into NFBI to adjust the risk of fluctuating interest income.

Further the result found the affect of operating expenses are higher on the risk – adjusted return on asset of the banks studied, as it worsens the RAROA and RAROE. The analysis suggests that banks should focus on reducing its expenses to improve the financial performance of the banks.

The analysis also reported that NPA of the banks worsens the Risk-adjusted Return on asset and Risk-adjusted Return on equity therefore it is suggested to reduce the level of NPA in the banks.

The analysis of bank size is positively related to RAROA suggesting that the larger banks are better able to manage the risk and return merely due to its competitive advantage.

The further analysis of NFBI on RAROE found that NFBI is positively related to RAROE. Here the bank size is found to be insignificant informing that increasing the

size of the banks will not help the banks to improve the shareholders fund. Therefore keeping in mind the benefit of shareholders the banks should prefer medium diversification of size.

Therefore the study concludes that NFBI are highly affected by the bank size, bank efficiency, loan quality, operating expenses and CAR and the proportion of NFBI is different across public and private sector banks. The performance of private sector banks in terms of NFBI was found to be better than the public sector banks in India. According to the result it can be further concluded that NFBI increases the financial performance, RAROA and RAROE.

7.6 SUGGESTIONS

As per the results obtained on the analysis from our empirical model based on studying the determinants of NFBI and its influence on the financial performance of the banks operating in India. We provide the following suggestions for the NFBI and the financial performance of banks and they are as under:

- The operating expenses have a high effect on the level of NFBI and has been placed as an important determinant of NFBI therefore it is suggested that banks should reduce the operating expenses in the process of diversifying into NFBI.
- It is found that the banks with high engagement on traditional activities are less inclined towards NFBI. The banks are suggested to maintain a proper balance between the traditional activities and non –traditional activities as NFBI is found significant in improving the financial performance of the banks.
- Since NFBI is found to be a significant driver of financial performance of the banks and going through the trend of NFBI in public and private sector banks

it is suggested that public bank should venture more in NFBI to mitigate the risk of NPA.

- The banks with higher NPA should try to balance the gap of loan quality by venturing more into NFBI as it will improve with the financial performance of the banks ultimately helping banks to balance the loss of bad loans.
- Further the small and medium sized banks are suggested to diversify into NFBI to balance the volatility of interest income and improve its financial performance.
- The bank's CAR level bears a negative relationship with NFBI indicating the reason for insignificant relationship with the ROA therefore it is suggested that banks should diversify into NFBI to improve the financial performance of the banks.

7.7 LIMITATION OF THE STUDY AND SCOPE FOR FUTURE RESEARCH

- The study was confined to public and private sector banks and other type of SCBs were not included. We have excluded foreign banks from the study despite its involvement in NFBI is high. As out of the various bank parameters undertaken traditional activities were considered as a major determinant so the study had to exclude foreign banks as they are less inclined towards NFBI and further erroneous results were obtained after when it was included. Thus industry level study can be conducted on the NFBI to get a proper picture of NFBI and financial performance in the Indian banks.
- The study is limited to the period of 10 years only from 2005-06 to 2014-15. A longer period would have been considered to obtain a better outcome of the study. Thus it leaves scope for the future study with longer time frame.

- The study included dummy variable for public and private sector banks to capture the affect of ownership structure on NFBI as per the objectives but hasn't used the same for determining the influence of NFBI on the financial performance of the banks. Therefore the relationship between the NFBI and financial performance can be studied by considering the ownership structure.

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