COMPARATIVE STUDY OF PERFORMANCE AND TECHNOLOGY ADOPTION BY PUBLIC SECTOR BANKS IN INDIA

A THESIS SUBMITTED

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<u>Approval Sheet</u>

This thesis/dissertation/report entitled *COMPARATIVE STUDY OF PERFORMANCE AND TECHNOLOGY ADOPTION BY PUBLIC SECTOR BANKS IN INDIA* by Abhinav Kataria is approved for the degree of **DOCTOR OF PHILOSOPHY IN MANAGEMENT**

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CANDIDATE'S DECLARATION

I hereby certify that the work which is being presented in the thesis, entitled **STUDY OF PERFORMANCE AND TECHNOLOGY ADOPTION BY PUBLIC SECTOR BANKS IN INDIA** in fulfillment of the requirements for the award of the degree of Doctor of Philosophy in Faculty and submitted in Galgotias University, Greater Noida is an authentic record of my own work carried out during a period from 2018-2023 under the supervision of **Prof.(Dr.) Anurag Kumar and Prof.(Dr.) Adarsh Garg .**

The matter embodied in this thesis has not been submitted by me for the award of any other degree of this or any other University/Institute.

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This is to certify that the above statement made by the candidate is correct to the best of our knowledge.

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STATEMENT OF THESIS PREPARATION

1. Thesis title: ***Comparative Study of Performance and Technology Adoption by Public Sector Banks in India***

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3 Thesis Guide was referred to for preparing the thesis.

4. Specifications regarding thesis format have been closely followed.

5. The contents of the thesis have been organized based on the guidelines.

6. The thesis has been prepared without resorting to plagiarism.

7. All sources used have been cited appropriately.

8. The thesis has not been submitted elsewhere for a degree.

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DEDICATION

This research is dedicated to my Father, Mother and my Wife who sacrificed their comfort and resources to make sure what I am today. Special dedicated to my son Reyansh Kataria for encouraging me all the way at the expense of their quality time.

<u>ACKNOWLEDGEMENT</u>

ABSTRACT OF THESIS

Financial systems are a set of various combinations of a well-incorporated and well-developed set of subsystems that include properly functioning of financial institutions, market instruments, and services to channel the distribution and allotment of assets effectively and efficiently. Almost every developing economy has both formal and informal financial sectors. The formal financial sector consists of organized and appropriately regulated systems to suffice the needs of the different contemporary fields of the economy. The informal financial sector is an unorganized and non-regulated system that majorly emphasizes on conventional and rustic segments of society. The formal financial system has four subsets; (a) Financial markets, (b) Financial institutions, (c) Financial services, and (d) Financial instruments. Banks are considered most important players in the credit distribution and building strong economic system. There are differing views regarding the word "bank" in its current sense's origin. Some authors claim that where the word "bank" originally came from the French term "bancus" or "Banque," which signifies a bank. They sat on benches in the market and conducted business. If a banker were unsuccessful, the populace would smash his "Banque," or bench, signaling the failure of that specific banker. According to some scholars, "bank" was first taken from the German word "Banck," which meant a combined reserve company. It was Italianized into "banco" when German rule controlled a significant portion of Italy. The word "banco" signifies a lot of cash. In modern usage, a "bank" is an organization that accepts deposits of money to be utilized for lending. According to Section 5(c) of the Banking Regulation Act of 1949 in India, a bank is defined as a firm that conducts banking activity in India. In Section 5(b), banking is described as receiving public money and utilizing it for lending or investing, repayable upon demand or in another manner, and withdraw able by check, draught, or order or in another form.

There are various categories of banking services in India, such as Public, Private, Regional, Rural, Cooperative, Foreign, etc. But a large population in India still believes their money is safe in Public sector banks. The consistency and past credibility of the bank play an essential role in the mind of a depositor while selecting among the various banks in India.

Information and communication technology (ICT) is now at the center of the banking industry, which is at the center of every healthy economy. This is very clear that Information and Communication Technologies (ICT) has emerged as an essential topic in all business domains

impacting the world economy. Particularly, information and communication technology (ICT) has completely changed how banks work and provide customer service in the banking sector. Banks have made significant investments in ICT in an effort to keep up with the pace of global development, enhance the quality of customer service, and lower transaction costs. ICT networks that are widely used to supply a variety of goods and services with added value. ICT advancement significantly influences the creation of more adaptable and user-friendly financial services. ICT has also influenced many aspects of our society, from enabling people to use online services to virtual chatting rooms and economic reforms at the world level. ICT has strongly impacted the financial sector's evolution, including financial markets and banks in India. India is emerging as one of the biggest economies and has moved forward with implementing different financial sector reforms, specifically in the banking sector. ICT has played a significant role in bringing these ice-breaking changes. Therefore, ICT has backed all the developments and is behind the growth of the Indian Banking Sector with improved functioning and operations. There have been five significant stages in the development of the ICT that is main frame Computers, personal computers, microprocessor, internet, wireless links. POS Banking, Electronic Bill Payments, Internet Banking, SMS and Telephone Banking, RTGS, NEFT, and other noteworthy ICT applications are employed extensively in the banking business. In nutshell we can state, India's banking sector has embraced ICT quickly. There are a number of benefits to this adoption. If we compare this adoption across several banking categories, it helps to see the diversity. People in India have a great deal of faith in public sector banks, which have also embraced ICT. However, it is still unknown whether or not these investments in ICT have increased the banks' earnings. Additionally, it needs to be determined whether public sector banks differ from one another in terms of Deposits, Profits, or the use of ICT, or if they should be grouped together. Currently twelve PSU banks are operating in India. All these banks are different when it comes to technological adoption. Some are adopting Technology, while others have started to accept this challenge. This study has taken the data for the last ten years, from 2011-12 to 2020- 21(including all revision till September 2021). This study will try to determine the variation in the performance of Public sector banks (Deposits and Profits) so that we can able to analysis weather all public sector banks are same or public sector banks should be regarded as one unit or different unit. With these study depositors will able to differentiate between various public sector banks in terms of performance and on the other hands Public sector banks are able to identify what keys IT adoptions which are impacting the earning of

PSU banks. This will help them to rationalized these investments in ICT adoption which can bring more profitability to them.

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LIST OF ABBREVIATIONS

S.No	ABBREVIATION	FULL FORM
1	INC_Y	Incorporation Year
2	AG	Age
3	ATM_ON	Number of ATMs- On-site
4	ATM_OFF	Number of ATMs- Off-site
5	N_ATM	Total Number of ATMs
6	N_POS	Number of POS terminals- On-line
7	N_DC	No .of outstanding cards - Debit Cards
8	N_CC	No .of outstanding cards - Credit Cards
9	ATM_T_CC	No. of Transactions- Credit Card- Actuals at ATM
10	ATM_T_DC	No. of Transactions- Debit Card- Actuals at ATM
11	POS_T_CC	No. of Transactions- Credit Card- Actuals at POS
12	POS_T_DC	No. of Transactions- Debit Card- Actuals at POS
13	I	Interest Earnings
14	NI	Non-Int. Earnings
15	NII	Net Interest Income
16	OPP	Operating Profit
17	PAT	Net Profit (Net PAT)
18	TE	Total Earnings
19	FA	Fixed Assets
20	TA	Total Assets
21	D	Deposits
22	EMP	No. of Employees
23	AGE	Log of Age
24	BR_R	No. of Branches – Rural
25	BR_SU	No. of Branches - Semi-Urban
26	BR_U	No. of Branches – Urban
27	BR_MP	No. of Branches - Metropolitan
28	BR_TTL	No. of Branches – Total
29	Y13	2013

30	Y14	2014
31	Y15	2015
32	Y16	2016
33	Y17	2017
34	Y18	2018
35	Y19	2019
36	Y20	2020
37	Y21	2021
38	B2	BANK OF INDIA
39	B3	BANK OF MAHARASHTRA
40	B4	CANARA BANK
41	B5	CENTRAL BANK OF INDIA
42	B6	INDIAN BANK
43	B7	INDIAN OVERSEAS BANK
44	B8	PUNJAB AND SIND BANK
45	B9	PUNJAB NATIONAL BANK
46	B10	STATE BANK OF INDIA
47	B11	UCO BANK
48	B12	UNION BANK OF INDIA
49	MD_1	Deposits/Total Assets (MV = 0.8543)
50	MD_2	Interest Earnings to Total Earnings (MV = 0.8962)
51	MD_3	Net Interest Income to Total Earnings (MV = 0.2678)
52	MD_4	Operating Profit to Total Earnings (MV = 0.1940)
53	MD_5	Net Profit (Net PAT) to Total Earnings (MV = 0.0246)
54	MD_6	Net Profit (Net PAT) to Total Assets (MV = 0.0021)
55	MD_7	Total Earnings to Total Assets (MV = 0.0823)
56	D_TA	Deposits/Total Assets
57	I_TE	Interest Earnings to Total Earnings
58	NI_TE	Non-Int. Earnings to Total Earnings
59	NII_TE	Net Interest Income to Total Earnings
60	OPP_TE	Operating Profit to Total Earnings
61	PAT_TE	Net Profit (Net PAT) to Total Earnings
62	PAT_TA	Net Profit (Net PAT) to Total Assets
63	TE_TA	Total Earnings to Total Assets
64	I_BR	Interest Earnings per Branch
65	NI_BR	Non-Int. Earnings per Branch
66	NII_BR	Net Interest Income per Branch
67	OPP_BR	Operating Profit per Branch
68	PAT_BR	Net Profit (Net PAT) per Branch

69	TE_BR	Total Earnings per Branch
70	FA_BR	Fixed Assets per Branch
71	TA_BR	Total Assets per Branch
72	D_BR	Deposits per Branch
73	EMP_BR	Employees per Branch
74	ATM_ON_BR	Number of ATMs- On-site per Branch
75	ATM_OFF_BR	Number of ATMs- Off-site per Branch
76	N_ATM_BR	Total Number of ATMs per Branch
77	N_POS_BR	Number of POS terminals- On-line per Branch
78	N_DC_BR	No .of outstanding cards - Debit Cards per Branch
79	N_CC_BR	No .of outstanding cards - Credit Cards per Branch
80	ATM_T_CC_BR	No. of Transactions- Credit Card- Actuals at ATM per Branch
81	ATM_T_DC_BR	No. of Transactions- Debit Card- Actuals at ATM per Branch
82	POS_T_CC_BR	No. of Transactions- Credit Card- Actuals at POS per Branch
83	POS_T_DC_BR	No. of Transactions- Debit Card- Actuals at POS per Branch
84	I_G	Growth of Interest Earnings
85	NI_G	Growth of Non-Int. Earnings
86	NII_G	Growth of Net Interest Income
87	OPP_G	Growth of Operating Profit
88	PAT_G	Growth of Net Profit (Net PAT)
89	TE_G	Growth of Total Earnings
90	D_G	Growth of Deposits
91	D_TA_G	Growth of Deposits/Total Assets
92	I_TE_G	Growth of Interest Earnings to Total Earnings
93	NI_TE_G	Growth of Non-Int. Earnings to Total Earnings
94	NII_TE_G	Growth of Net Interest Income to Total Earnings
95	OPP_TE_G	Growth of Operating Profit to Total Earnings
96	PAT_TE_G	Growth of Net Profit (Net PAT) to Total Earnings

97	PAT_TA_G	Growth of Net Profit (Net PAT) to Total Assets
98	TE_TA_G	Growth of Total Earnings to Total Assets
99	I_BR_G	Growth of Interest Earnings per Branch
100	NI_BR_G	Growth of Non-Int. Earnings per Branch
101	NII_BR_G	Growth of Net Interest Income per Branch
102	OPP_BR_G	Growth of Operating Profit per Branch
103	PAT_BR_G	Growth of Net Profit (Net PAT) per Branch
104	TE_BR_G	Growth of Total Earnings per Branch
105	FA_BR_G	Growth of Fixed Assets per Branch
106	TA_BR_G	Growth of Total Assets per Branch
107	D_BR_G	Growth of Deposits per Branch

Chapter -1

Introduction of Study

1.1 INTRODUCTION – FINANCIAL SYSTEM

Financial systems are a set of various combinations of a well-incorporated and well-developed set of subsystems that include properly functioning financial institutions, market instruments, and services to channel the distribution and allotment of assets effectively and efficiently. Almost every developing economy has both formal and informal financial sectors. The formal financial sector consists of organised and appropriately regulated systems to satisfy the needs of the different contemporary fields of the economy. The informal financial sector is an unorganized and non-regulated system that focuses primarily on conventional and rustic segments of society. The formal financial system has four subsets: (a) financial markets; (b) financial institutions; (c) financial services; and (d) financial instruments.

Financial System

Organized Sector

Governed by Strict regulations by various regulators in the Country.

Unorganized Sector

No regulator exists. Transactions are done on one to one basis. They are referred as over the counter markets transactions.
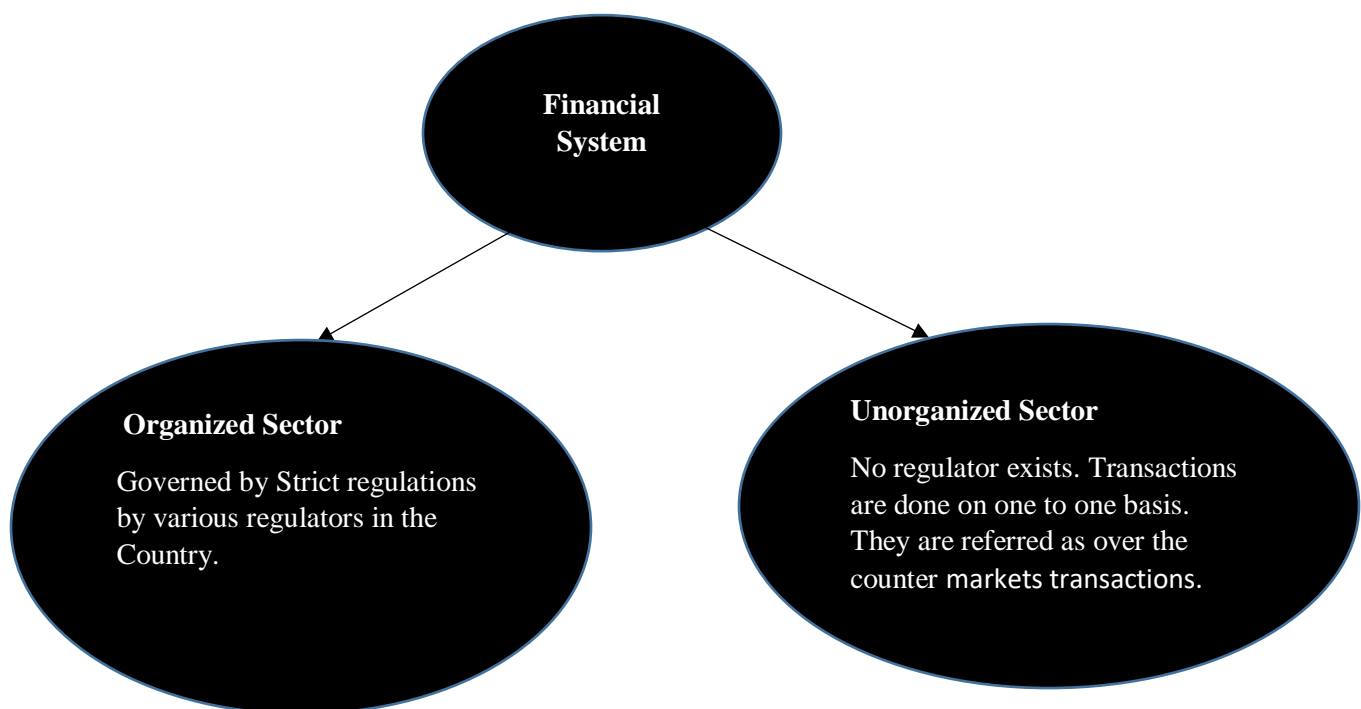
Source: Author's own

Figure 1: Structure of Financial System

A financial system is made up of the many services offered to the nation's citizens by financial institutions, including banks, insurance firms, pension plans, and funds, among others. The Indian financial system is crucial to the Indian economy and provides evidence of the expansion of our economy. It facilitates the movement of money to people, who then employ that money for their economic advancement. Financial institutions are organisations that offer many options, such as investment, lending, and deposit, to people, businesses, or both. While some other financial institutions offer products and services to the broader public, others are more likely to focus on serving a smaller number of niche markets.

1.2 BANKING SECTOR

Organized sector: The RBI has direct control over this sector. Commercial banks and Submarkets are included.

Commercial banks (under the Banking Regulation Act of 1949, which includes both private and public banks), RRBs, and cooperative banks.

Submarkets: Provide for governmental and industrial needs. Call money, bill market (commercial bill, T-Bill), certificate of deposit (CD), and commercial paper (CP) are all included.

Unorganized sector: local bankers, loan providers, private money lenderds etc. make up the unorganized sector.

Major Players in Banking Sector

(I) The central banks: These are the financial organisations that control, supervise, and manage all other banks. The RBI is referred to as India's central bank. Large financial institutions cooperate closely with the RBI to offer banking services to the general public.

(II) Commercial and retail banks: These banks work directly with businesses while also offering services to consumers. Currently, the majority of banks provide loans, deposit accounts, and financial counselling, savings accounts, certificates of deposit (CDs), personal and home loans, credit cards, and business banking accounts are all services offered by these banks.

(III) Internet banks: These banks operate similarly to retail banks. Online banks come in two varieties:

a. **Digital banks:** These are websites that only operate online but are linked to conventional banks.
b. **Neobanks:** These banks are independent of all other banks. These banks were created exclusively online.

(IV) Credit unions: These are the financial institutions that their members form and manage, and they offer typical banking services. Based on their fields of membership, such as military personnel or teachers, these unions assist a particular community.

(V) Insurance Providers: These businesses assist people in shifting the loss risk. These enterprises protect people and businesses from monetary loss brought on by calamities such as disability, death, accidents, property damage, and others.

(VI) Financial Markets: The market where buyers and sellers engage in the exchange of assets including derivatives, shares, bonds, and currencies

Includes two types:

1. Money Market: Offers credit with terms under one year.
2. The capital market manages both long- and medium-term lending. (> 1 yr.).

1.3 INDIAN BANKING INDUSTRY: EVOLUTION

India's prehistoric past: The Vedas, the prehistoric Indian texts, allude to the concept of usury and translate the word Kusidin as "usurer." The Jatakas (600–400 BCE) and the Sutras both make reference to usury (700–100 BCE). Texts from this time period also forbade usury; Vasishtha forbade members of the Brahmin and Kshatriya varnas from partaking in it. By the second century CE, usury had become more widely recognised. Usury was regarded by the Manusmriti as a proper means of obtaining funds or subsisting. Lending money above a certain interest rate—and at varying rates for different castes—was also viewed as sinful. The 'Jatakas, 'Dharmashastras', and

'Kautilya' all make reference to loan deeds, also known as "RNAPATRA", "RNAPANNA", or "RNALEKHAYA".

Later, during the Mauryan era (321–185 BCE), the "Adesha" bill of exchange, which is contemporary in design, was used. It was a directive to a banker telling him to pay the sum on the note to a different party. The widespread use of these instruments has been reported. Business people also shared letters of credit in large cities**.**

Mediaeval Period: The Mughal Empire continued to use loan deeds, also known as 'DASTAWEZ' (in Urdu and Hindi). Two different types of loan deeds are on file. 'Dastawez-e-indultalab' was due immediately, while "Dastawez-e-miadi' was due after a set amount of time. It has also been reported that the royal treasury employed barrettes as a form of payment direction. There were rumours of Indian bankers issuing bills of exchange using foreign currencies as well. "Hundis, a type of credit instrument, was developed during this period and is still in use today.

Colonial Period: The Union Bank of Calcutta was founded in 1829 by merchants as a private joint stock association and later became a partnership under British administration. The former Commercial Bank's owners The bank was owned by the owners of the former Commercial Bank and the Calcutta Bank, who agreed to build Union Bank to replace these two banks. In 1840, it shut down the agency it had established in Mirzapore the year before and established a new one in Singapore. The bank revealed that its accountant had cheated the organisation in 1840 as well. Despite being established in 1845, Union Bank closed its doors in 1848 due to insolvency and the need to pay dividends with more money received from depositors.

Despite not being India's first joint stock bank, the Allahabad Bank was established in 1865 and is still in business today. The 'Bank of Upper India' was founded in 1863 and enjoyed distinction until 1913, when it failed as a result of the transfer of some of its assets and liabilities to the 'Alliance Bank of Simla'. Foreign banks also started to appear in India in the 1860s, primarily in Calcutta. 'Grindlays Bank' opened its first branch in Calcutta in 1864. Calcutta, the busiest trading port in India, later became a significant financial centre. 'HSBC' made its debut in Bengal in 1869. The country's first completely Indian joint stock bank, "The Oudh Commercial Bank," was established in 1881 in Faizabad, thanks in large part to trade with the British Empire. It later folded

in 1958. The 'Punjab National Bank', established in Lahore later in 1894, grew to become the second-largest joint stock bank still operating in India.

The 'Comptoir d'Escompte de Paris' established branches in Bombay and Calcutta, respectively, in 1860 and 1862. Later, it established subsidiaries in Madras and Pondicherry, which were French colonies at the time.

At the beginning of the 20th century, the Indian economy was going through a period of relative stability. The infrastructure for the industrial, social, and other spheres had all improved in the nearly 50 years since the Indian uprising. During this period, Indians founded a variety of small banks, the majority of which cater to certain racial and religious communities. Although there were exchange banks and a few Indian joint-stock banks, presidency banks dominated the Indian banking sector. All of these banks engage in business across a range of industries. These exchange banks, which were primarily run by Europeans, were devoted to financing global trade. Indian joint-stock banks lacked the maturity and experience necessary to compete with the exchange and presidency banks and were undercapitalized.

With this segmentation, Lord Curzon could observe, "It looks like we are behind the times in terms of banking. "With solid wooden bulkheads, we are divided into awkward pieces like a classic sailing ship."

Between 1906 and 1911, the Swadeshi movement motivated the formation of banks. Local merchants and politicians were spurred by the Swadeshi movement to establish banks for the Indian population. During this period, some banks, such as (a) The Bank of India, (b) The Catholic Syrian Bank, (c) The South Indian Bank, (d) Corporation Bank, (e) Indian Bank, (f) Bank of Baroda, (g) Canara Bank, and (h) The Central Bank of India, were formed.

Many private banks were established in Dakshina Kannada and Udupi districts, which had previously been united and known as South Canara (South Kanara) Bank, thanks to the fervour of the Swadeshi movement. During this period, there was the foundation of four nationalised as well as private-sector banks. Consequently, the district of Dakshina Kannada is known as the "Cradle of Indian Banking". Sir Osborne Smith, a Britisher, held the initial post (1 April 1935), while C. D. Deshmukh, an Indian, was the first governor (1 August 1943).

During the First World War (1914–1918), the Second World War (1939–45), and the two years that followed, it was difficult for Indian banking until India gained its freedom. While the Indian economy received an indirect boost from war-related economic operations, the First World War had an adverse effect, with banks simply winding down. In India, a minimum of 94 banks were unsuccessful between 1913 and 1918. The Bank of Bombay, the Bank of Madras, and the Bank of Bengal were three presidency banks that merged in 1921 to become the Imperial Bank of India, currently known as the State Bank of India. In the early part of the 20th century, banks proliferated quickly, with their primary mission being to finance international trade. Local bankers and money lenders handled the domestic trade. They employed questionable working practises and an insufficient capital structure. Regulation of the Banking Companies Act of 1949, as well as the elimination and mergers of several banks

Following independence, banks tended to focus on serving the needs of the wealthy and aristocratic classes, narrowing their original mission. To combat this, six more banks were nationalised in 1980 and another 19 in 1969. After nationalisation, deposits and credit grew quickly, as did branch development. Priority sector lending and weaker parts received a lot of attention. This had an impact on banks' profitability, and NPAs were on the rise. The country's and the banks' expansion were both stunted by the highly regulated environment. A new round of reforms focused on privatisation, globalisation, and liberalisation was introduced in 1991. Banks initially suffered losses as a result of the reforms, but through divestments and increased efficiency, they were able to control their capital and competition.

The banks want to comply with the BASEL II criteria by 2009, and the second round of reforms is currently being implemented. The changes are intended to give banks more autonomy over their daily operations and help them develop plans for taking on both domestic and foreign competition with new goods and services. The current era is defined as the modern era of branchless banking. Most of the banking facilities are provided on an online or contactless basis. By mandating banks to maintain specific leverage ratios and retain specific levels of reserve capital on hand, Basel III is an international regulatory agreement that brought about a set of measures intended to reduce risk within the global banking sector. It was started in 2009 and is still being carried out.

1.4 ABOUT BANKING IN INDIA

About RBI

The Reserve Bank of India (RBI) is the apex bank of the nation and plays both a regulatory and promotional role. It upholds the nation's monetary policy to guarantee internal price stability, cost-effective utilisation of available money, and external exchange rate stability. Under the Reserve Bank of India Act of 1934, it was established as a private shareholders' organisation on April 1, 1935. As per the Reserve Bank (Transfer to Public Ownership) of India Act, 1948, it was nationalised in January 1949.

This law gives the federal government the authority to give the RBI any instructions it deems appropriate in the interest of the general public after consulting with the bank's governor. The Governor and the Deputy Governors make up the 20-member Central Board of Directors that oversees RBI. The Governor and Deputy Governors of the Bank are elected by the Government of India.

The RBI Act of 1934 divided banks into scheduled and non-scheduled banks. Scheduled banks are those that have paid-up capital and reserves of at least Rs. 5,000. Scheduled commercial banks are those banks that meet the RBI's requirements outlined in Section 42 and have been included in the Second Schedule of the Reserve Bank of India (RBI) Act, 1934 (60 of the Act). Being a part of the second schedule gives the bank access to accommodations from the RBI during periods of liquidity shortage. The bank is nevertheless subject to many requirements and obligations under the Reserve Regulations of the RBI as a result of its position.

About Commercial Banks in India

Commercial banks as a whole fall under this umbrella. Commercial banks exist to make money through commercial activity. Scheduled banks can be further subdivided into (i) private sector banks, (ii) public sector banks, (iii) foreign banks in India, (iv) regional rural banks, and (v) cooperatives. Public-sector banks can be further categorized into the State Bank of India and other nationalised banks.

Following nationalisation, public sector banks quickly progressed in branch expansion and opened new branches in the countryside and semi-inner city areas without any banking infrastructure at all. The commercial banks' deposits have significantly increased. Extensive deposit mobilisation, on the one hand, and swift money supply growth, on the other, led to a spectacular increase in credit availability. The banks' credit policies underwent a notable adjustment after nationalisation. The policymakers should be commended for giving the priority sectors, particularly agriculture, small business, and small transit operators, more significance.

Other priority sectors were included, such as educational, professional, and self-employed individuals; retail trade; consumer loans; and housing loans for underprivileged groups. For the future disbursement of bank credit, several creative programmes, including equity funds for small units, village adoption, agricultural development branches, etc., were established. Credit planning was introduced to make the banking industry a crucial component of national planning. Banks created quarterly credit budgets to improve the link between credit demand and supply.

Despite the significant increase in deposit mobilisation and credit provision, public sector banks had low profitability over time. Many public sector banks and financial institutions had financial weaknesses, and few of these institutions experienced yearly losses.

In India, public sector banks' low profitability resulted from (i) falling interest income and (ii) rising operating costs for banks. The Statutory Liquidity Requirements (SLR) and Cash Reserve Ratio (CRR) required public sector banks to maintain significant deposits with the RBI. They received a significantly lower rate of return in exchange. Additionally, to prioritise sectors under social banking, they had to distribute a sizable amount of their deposits at a lower interest rate.

Even a minimum of 1% of the total deposits had to be given to the community's most vulnerable members at a low concessionary interest rate of just 4%. The amount of income they made, as a result, was reduced. Above all, the government compelled the public sector banks to provide loans in priority industries like agriculture to questionable parties who couldn't afford to pay back their debts. As a result, their loans turned into non-performing assets, also known as sinister and dubious debts.

Public sector banks (PSBs)

Production costs increased due to unprofitable branch development, high employee recruitment, growing staff disorganisation and inefficiency brought on by trade union action, low productivity, high salary costs, etc. Due to these factors, the profitability of PSBs was negatively impacted by their growing expenses and low-interest revenue on one side. In addition, their work technology was outdated, and they were in no way customer-friendly. Therefore, they could not respond to obstacles in a hostile environment. Consequently, specific reforms must be made so that PSBs can overcome their limitations. But a large population in India still believes their money is safe in public-sector banks. The type and past credibility of the bank play an essential role in the mind of a depositor when selecting among the various banks in India. Approximately 80% of Indians have bank accounts (source: RBI, 2022).

Summary of percentage holdings of total assets held by different types of banks The data shows the strong dominance of public sector banks in India.

Year	Banks	Total Assets	Percentage holding of Total Assets
2022	PUBLIC SECTOR BANKS	12706660.75	58.69
	PRIVATE SECTOR BANKS	7371715.05	34.05
	FOREIGN BANKS	1368521.47	6.32
	SMALL FINANCE BANKS	203076.24	0.94
	Total Assets of Scheduled Banks	21649973.51	100.00
2021	PUBLIC SECTOR BANKS	11728799.36	59.92
	PRIVATE SECTOR BANKS	6421783.94	32.81
	FOREIGN BANKS	1260682.42	6.44
	SMALL FINANCE BANKS	163557.16	0.84
	Total Assets of Scheduled Banks	19574822.89	100

Source: RBI 2022, Figures in crores

Figure -2 Details of Total Assets Holdings in Banking Sector

According to the Reserve Bank of India, as of December 31, 2020, there were 120 crore account holders in India. Out of which 81.37* (from the published source of the IIBF 2022 Report) crore account holders are of public sector banks and the rest, 38.63 core, are in the private sector. The above facts clearly indicate the strong dominance of public sector banks in India.

1.5 INFORMATION TECHNOLOGY AND BANKING SYSTEM

Information and communication technologies (ICT) have emerged as an essential topic in all business domains impacting the world economy. ICT has also influenced many aspects of our society, from enabling people to use online services to virtual chatting rooms and economic reforms at the global level. ICT has strongly impacted the financial sector's evolution, including financial markets and banks in India. India is emerging as one of the biggest economies and has moved forward with implementing different financial sector reforms, specifically in the banking sector.A need was felt to have appropriate development of the banking sector, resulting in dynamic changes in the Indian banking sector concerning working, orientation, services, and regulatory and administrative functioning. ICT has played a significant role in bringing about these ice-breaking changes. Therefore, ICT has backed all the developments and is behind the growth of the Indian banking sector with improved functioning and operations.

Through Core Banking Services (CBS), the banks deliver the best customer service to their customers through a single platform. By the end of 2010, branch computerization had progressed quickly, and almost 97.8% of banks were computerised. And then, by the end of 2011, 98 percent of banks were computerised. Then, in 2012, all the banks implemented CBS and were computerised. The banks are now concentrating on implementing more cutting-edge technology that would enhance internal effectiveness and improve client relationships.

1.6 TRADITIONAL TOOLS OF INFORMATION TECHNOLOGY ADOPTION

- **Automated Teller Machines (ATMs)**

Beginning in the early 1990s, Western banks brought the idea of automated teller machines to India. Foreign and private sector banks installed ATMs because they lacked a robust branch network. This idea of ATMs has also been adopted by public-sector banks. Customers utilise ATMs for a variety of tasks in addition to cash withdrawals, including ordering cheque books, obtaining mini bank statements, recharging mobile devices, paying bills, etc. The banks may generate significant amounts of revenue from these multipurpose ATMs. On the one hand, the development of ATMs has benefited customers, and on the other, it has reduced transaction costs. The installation of bilingual ATMs would aid in reaching the rural market.

- **Internet Banking**

Since the beginning of 2000, Internet banking has gained popularity in India. Customers can use it to execute banking operations from home. The bank's secure website is used by consumers to conduct financial transactions.

- **Phone Banking**

Rapidly, this had a significant influence on the banking industry. Customers can conduct all financial transactions over the phone without going to an ATM or a bank location. In the Indian banking industry, phone banking is considered a relatively new phenomenon. However, this has had a substantial impact on the banking industry. Interactive Voice Response System (IVRS) or tele-banking executives are used for phone banking operations.

- **Credit and debit cards**

Since these credit and debit cards were introduced, they have grown in popularity. Customers who use this card-based delivery method benefit from not having to carry cash with them when making purchases. Customers' ability to purchase now and pay later is the primary factor in credit cards' popularity. The quantity and dollar amount of transactions made using credit cards increased significantly, despite a deterioration in the number of unpaid cards. Cash usage has decreased thanks to debit cards. As with credit cards, the quantity and amount of transactions have also increased for debit cards.

- **Electronic payment system**

The use of electronic payments has been significantly influenced by technology. Electronic payments using cards and retail purchases have both grown in popularity recently. Electronic payment methods like (I) for large-value transactions: Real Time Gross Settlement (RTGS); (II) for debit and credit clearing: Electronic Clearing Service (ECS); (III) for retail transactions: National Electronic Fund Transfer System (NEFT); and (IV) for credit and debit cards: card-based payments have all grown in popularity recently. Direct credit payments like salaries and pensions are made via ECS credit. ECS debit is used to pay bills, pay insurance premiums, and make

monthly loan payments. Thus, it is clear that technology has had a significant impact. The usage and value of ECS, NEFT, and RTGS transactions have also dramatically increased. It is true to say that technology has altered the way the banking industry is structured. In addition to making banks more customer-friendly, it also made the sector's operations simpler. The bank functions similarly to a financial store by providing a range of financial services.

1.7 IT AND BANK EARNINGS

IT expenditures in the banking sector have helped to increase revenue development, which can only happen through valuable proposals, channelizing marketing and sales techniques, and management of the customer's life cycle. To better meet needs and generate new services for clients, businesses can first construct new value propositions using IT systems. For instance, IT systems like CRM programmes enable the customization of offers and services through greater awareness of consumers' demands, improving customer responsiveness and one-to-one marketing effectiveness (Ansari and Mela 2003). (Mithas et al., 2006). This is achieved by making it possible to better understand the unmet and varying needs of the customers. Then understanding and using customer information for better designing, forecasting, manufacturing, delivering, looking for cross-selling opportunities, and finally fulfilment (Kohli 2007; Kohli and Melville 2009; Liang and Tanniru 2006–07; Kohli and Melville 2009). To increase brand awareness among current customers and draw in new ones, businesses might use IT systems to create new marketing and sales channels. IT systems, target clients to enhance business through IT networks like e-mail, short message services (SMS), websites, and targeted databases, thereby increasing their revenue. Also, IT enhances the management of the client lifecycle, boosting contact and closure rates as well as customer satisfaction, knowledge, and retention (Bardhan 2007; Srinivasan and Moorman 2005). According to Homburg et al. (2002), increased customer satisfaction increases loyalty and willingness to pay, which in turn boosts revenue growth (Babakus et al. 2004). IT projects for revenue growth frequently call for adaptability to a variety of scenarios. IT projects sometimes involve a high degree of social complexity that may require adjustments to deal with many business processes, including many stakeholders. These IT-enabled opportunities suggest such methodologies that substantial hindrances in organisational learning and path dependence fade away the competitive advantage. For instance, Dell uses IT (such as social media) extensively to involve both its staff and customers (Bennett 2009). Investments in online dialogue spaces like

Idea Storm and Employee Storm create associations between clients and organisational divisions. In turn, these technologies assist Dell in better managing the lifecycle of its customer resources and integrating client feedback into company operations. Similar to this, Southwest Airlines developed an integrated system to establish strong connections between its passengers, staff, and other airlines (Feld 2009).

Dell and Southwest prove how IT investments help an organisation be ambidextrous: IT infrastructure supports intricately functioning processes at the back end while providing a user-friendly interface to customers. These IT aspects, with an in-built feedback system, make customer dealing and its operations easy as they become interrelated and interdependent, allowing current process improvements and organisational learning to go hand in hand. These examples demonstrate how IT investments may assist businesses in developing their IT capabilities and resources, which in turn increases sales. Holden and El-Bannany (2004) look into whether bank profitability in the UK between 1976 and 1996 was impacted by investments in information technology systems. The findings demonstrate that banks' profitability has a promising impact on the number of automated teller machines that have been installed by a bank when the other criteria mentioned in the literature are taken into account. Using evidence from accounting data, this study observes the consequences of investments in information technology (IT) systems on bank earnings in the public sector banks during the ten years 2012–2022. Since 2012, many facets of bank operations have undergone a revolution thanks to the growth of IT technologies. The main focus of the article is to show that, although IT systems have a significant role in controlling the management of banks, they also have a positive impact on client services.

Perhaps the most noteworthy impact of IT in banks was the installation of automated teller machines (ATMs), which had a direct impact on customers. These ATMs helped in providing 24-hour access to cash and information to the customers through less frequent contact with staff and a more "mass market" provision of services rather than a traditional way of personal service with a "friendly bank manager." These ATMs have allowed banks to provide an altogether different service around the clock without having to employ staff or provide other facilities. In other words, these new services are being offered at a reduced price, which should contribute to an increase in bank profitability. Transaction costs are decreased as a result, and some banks make money from fees associated with using ATMs.

The Indian banking and IT industries both benefited from each other. The banking industry in India has undergone a revolution because of technology. On the one hand, where banks, without managing the technological challenges themselves, outsourced software-related activities to the IT sector, numerous IT companies gained The globalisation of the Indian banking industry has been significantly aided by IT. The entire banking system has been significantly impacted by mobile banking, internet banking, and ATMs. Customers of the Indian Banking System started using debit and credit cards for electronic payments, which is a big transformation for banks as a whole. The Indian Banking System has benefited from IT in the following ways: a) IT and Banking Systems; b) Automated Teller Machines (ATMs); c) Internet Banking; d) Phone Banking; e) Credit Cards and Debit Cards; f) Electronic Payment System. The computerization of the branches marked the beginning of the Indian banking system's IT revolution. Private banks and foreign banks initially had the upper hand, but as computerization spread, public-sector institutions also embraced it. Computers being installed in the branches were the beginning of everything. Today, nearly every branch is entirely computerised. The networking of the branches has been aided by banks' adoption of Core Banking Solutions (CBS). Consumers can now manage their branches from anywhere in the nation thanks to this. Internet and mobile banking have benefited from branch networking. A single platform is also used for complete banking activity.

1.8 INFORMATION TECHNOLOGY ADOPTION IN BANKING

The Indian banking industry is likewise making an effort to get out of bed and start acting pro-actively. Up until 1990, Indian banks operated in a relatively safe and comfortable environment. However, since then, because of altered economic conditions, they have been forced into fierce rivalry policies. The banking industry is becoming more competitive thanks to technology. Banks have long used technology to enhance their offerings and productivity. Technology today is altering not only the environment but also how we interact with our consumers. Although technology has not eliminated all barriers, it has created better products and channels. The upgrade of the financial system's technological infrastructure is given priority by the RBI. The banking business now has access to new products and services, new markets, and effective delivery methods thanks to technology. The banking industry can address obstacles in the current competitive environment with the help of IT. IT enables the cost of international fund transfers to be reduced.

The Indian government has started a number of initiatives to encourage people to switch from cash to digital payment methods (such as e-Wallets, the Unified Payment Interface, the Aadhaar-enabled payment system, etc.). According to the Reserve Bank of India's (RBI) study on digital transactions, India's total number of non-cash transactions increased from 228.9 million in 2004–2005 to 1.9 billion in 2016–2017. The development of technology and its use in the financial industry have allowed bankers to think outside the box.

Details - Year	RTGS	NEFT	UPI	BHIM Aadhaar Pay	Card Payments
	Volume	Volume	Volume	Volume	Volume
2015-16	983	12529	-	-	19593
2016-17	1079	16221	180	-	34864
2017-18	1244	19464	9152	20	47486
2018-19	1366	23189	53915	68	61769
2019-20	1507	27445	125186	91	72384
2020-21	1592	30928	223307	161	57787
2021-22	2078	40407	459561	228	61783

(Volume in lakh; Value in Crore)

Source: RBI- DBIE,2022

Figure 3 – Indicating adoption of ICT in Banking

The above table clearly indicate the strong adoption of ICT enablers in Indian banking sector. Most of the Financial transactions have been made possible by today's communication and computing technologies. The development of nationwide financial services, including ATM, electronic check, and credit card processing, money transfers, online account opening, mobile banking, online loan applications, insurance, and investment services, has been made possible by the speed and dependability of information.

S.NO	Name of Bank	Year of Establishment	Number of ATMs- On- site	Number of ATMs- Off- site	Number of POS terminals- On- line	Total Human Resource	Number of Branches	No .of outstanding cards - Credit Cards	No .of outstanding cards - Debit Cards
1	Bank Of Baroda	1908	8663	2970	49485	82695	8214	644537	65399342
2	Bank Of India	1906	2388	3163	53300	51459	5025	169025	41707777
3	Bank Of Maharashtra	1935	1505	445	2930	12387	1915	44250	9638962
4	Canara Bank	1906	9128	4324	37387	88450	10458	772849	40882576
5	Central Bank Of India	1911	2746	898	4016	32335	4609	0	26549122
6	Indian Bank	1907	4239	686	12084	41630	6002	133374	25267189
7	Indian Overseas Bank	1937	2720	425	10194	23571	3201	61119	19212964
8	Punjab And Sind Bank	1908	1067	30	1087	8832	1531	0	3198027
9	Punjab National Bank	1894	8610	5171	48246	96241	10768	305763	44403060
10	State Bank Of India	1955	25706	36911	747205	245652	22233	11821564	293312845
11	UCO Bank	1943	2146	215	9419	22064	3056	0	10128240
12	Union Bank Of India	1919	9089	3868	313420	78202	9332	471266	44151937

Source: RBI, DBIE – Figures as on 30 September 2021 (All revisions) & Author's own

Figure 4 – ICT adoption in Public Sector Banks in India

The above table clearly indicate strong ICT adoption by public sector banks in India. The development of information and communication technology in the financial sector, where we have used technology, has improved societal utility and strengthened and nourished the financial sector. The primary objective of all banks now is to develop a new strategy for specialised banking activities using information technology in order to better serve all stakeholders. The banking systems are updated and adopted in order to support instantaneous financial market operations across space and the ability to accurately record and account for a vast number of transactions. Banks are using technological solutions to offer clients good, satisfying services. Using IT services in the banking industry reduces handling costs, making cost savings the key advantage of IT for

banks. The banks were able to transition from the idea of "branch customer" to "bank customer" with technology. For today's tech-savvy consumers, continuous banking from anywhere and anytime offers further comfort and convenience. Other than banking, new products and services have been introduced with the aid of technology. Currently, management can use data warehousing as a very helpful tool for decision-making. With the use of data warehousing, banks may collect a massive amount of data in one location. This makes it possible to determine the demographics of current and potential clients. The banking industry is able to offer financial services in unbanked areas because of technology. Financial inclusion, a sustainable banking topic that is particularly pertinent to a nation like India with a sizable unbanked population, plays a significant role in technology. As technology has advanced, banks are supplying the products that customers want, and customers have experienced the power of technology in all aspects of daily life, including banking.

In Indian banks realised that even significant expenditures in technology are insufficient unless the majority of bank customers use it for financial activities. Banks are struggling to move majority of clients to digital channels, so it is imperative that they find inexpensive in-branch solutions to connect the general public with digital banking channels. Due to the significant expenditures made on the digital banking platform, it is crucial for banks to promote the adoption and use of these channels. Future bank branches should be transformed by figuring out cost-effective tactics and segmenting branch consumers based on their banking needs and preferences. All throughout the world, technology has changed the banking sector. However, according to Takieddine and Sun (2015), the adoption rate of technologically enhanced banking services varies by nation. The banking procedures need to change in order to provide customised products. Social media, mobility, and analytics are the sectors of technology that are now trending and developing. Banking will be driven by these, or banks will use these to grow their businesses and offer goods and services. Adoption of social media is made very simple by the use of a smartphone and all the available apps. Indian banks have begun integrating social media into their everyday operations in a variety of ways and at varying maturity levels. Some banks use their Facebook page to offer customers special deals, information about their products, and customer service. Banks believe they might not be able to handle the critical feedback or comments once they are in the area because of various limitations on account of freedom of expression. However, it is preferable to be in the

spotlight and take advantage of the chance to talk about their products and address customer complaints from the bank's perspective.

Banks have concentrated on Facebook and increased their connectivity and reach. In addition to utilising social media's networking features, banks also utilise analytics to better understand and serve their customers. This will make it possible for banks to better integrate their goods and services. For prompt resolution of client complaints and inquiries, banks can also use social media channels. Nearly millions of people use smart devices for banking thanks to the growing number of mobile phones. Customers can now conveniently bank from their home or office thanks to several delivery routes. Traditionally, card-based transactions call for the swipe of the card at the merchant's POS terminals. Then came the online transactions for "Cards Not Present." Mobile payments at POS terminals are the next stage of evolution. All significant card issuers have upgraded or replaced their POS terminals, which also support NFS (near field communication)-based mobile payments. Both mobile payments and conventional card transactions can be supported through NFS-based communication. Big data offers potential for cross-selling and a better understanding of client needs due to the abundance of computing resources available in the form of cloud, mobile, IOT, and other devices, as well as the variety of data from interactions on social media channels. It aids in attracting new clients and keeping loyal ones. Additionally, it offers chances for security analytics, better coding techniques for secure application development, and comprehension of how flaws affect application security. Big data analytics is still a difficult and time-consuming operation that needs expensive tools, a sizable computing infrastructure, and effort. Greater transparency in IT procurement is being brought about by cloud computing. The nature, function, and precise classification of the cloud environment are all described by the cloud deployment model.

With the development of artificial intelligence, banks are no longer required to employ personnel to respond to consumer inquiries. BOTS can be utilised to address the questions and complaints of customers thanks to AI and natural language processing. The development of technology will make financial transactions and the distribution of banking products more user-friendly. The banking industry is moving towards branchless, paperless, contactless, and cardless banking with a stronger focus on technology. Banks continually innovate and strive to stay ahead of the curve in order to keep up with the rapid changes in technology, legislation, and the market environment.

Therefore, banks must be ready to make ongoing technology investments and adopt new technological advancements. Employees will require continual training and development. Additionally, there will be a need to make an effort to teach customers how to use technology safely. There is a chance of a system breach unless the clients are aware of the security elements of the financial systems. The techniques for increasing client awareness are gamification and utilising social media outlets. In addition to raising customer knowledge, banks must implement a system for resolving customer complaints in accordance with RBI recommendations. The enhancement of client services across all economic, social, and geographic sectors is ultimately how technology adoption is demonstrated. Nearly all banks give their clients access to digital channels. Banks might be pleased with customers who use digital channels, but they must take the customers who do not use them seriously. Different groups may have different reasons for not adopting, such as those related to convenience, necessity, security, lack of confidence, etc. While postpones can be successfully converted into users among the non-adopters, the real challenge for the banks is to entice opponents and rejecters into the digital channel ecosystem. In addition to raising awareness, banks need to revisit their digital strategies for those groups. Higher levels of trust are established when security is stronger. Trust in the banking system increases dramatically as more and more clients have trouble-free and fraud-free transactions through alternate delivery channels.

Therefore, to conclude, banks are focused on adopting information technology because it makes things easier to handle, makes coordination better, makes your job easier, enhances communication, reduces complexity, increases accuracy, reduces errors, boosts productivity, and facilitates banks' ability to provide 24 x 7 x 365 services. I will be able to reduce banking frauds, improve efficiency, and utilise the bank ombudsman scheme.

Contemporary challenges associated with information technology adoption in banking:

1. Both banks and customers must undertake due diligence.
2. Adequate security precautions must be taken by both banks and customers.
3. Customer education to keep them from falling for phishing scams.
4. Make sure malware attacks are prevented on computer systems.

1.9 DOMINANCE OF BANKS IN THE INDIAN BANKING SYSTEM

By creating new markets, competition is intended to increase bank efficiency and foster financial innovation. Currently, monopolistic competition exists in the Indian banking sector. This characteristic of the Indian banking sector is typical of developing and emerging markets. Additionally, we observe a decline in competition between the two time periods, prior to and following 2007. This can be attributed to the sector's consolidation, in which larger banks bought out smaller ones to increase their scale, market share, and transaction volume.

According to the Reserve Bank of India, as of December 31, 2020, there were 120 crore account holders in India. Out of which 81.37 crore account holders are of public sector banks, the remaining 38.63 percent are in the private sector. From the Published Source of the IIBF, 2022 Report

The data still suggested the strong presence and dominance of public sector banks in terms of total assets in the banking system. However, in terms of market capitalization, it seems that public-sector banks are losing to private-sector banks.

S.No	Name of Bank	Cat.	No. of Branches	No. of ATM	Market Capitalization * Crore
1	State Bank of India	Public	22000+	62000+	Rs. 2,60,331 crores.
2	HDFC Bank	Private	6000+	18000+	Rs. 6,17,499 crores.
3	ICICI Bank	Private	5,400+	13,500+	Rs. 2,66,974 crore.
4	Kotak Mahindra Bank	Private	2300+	1500+	Rs. 2,83,464 crores
5	Axis Bank	Private	4750+	10900+	Rs. 1,76,669 crores

Source: RBI DBIE, 2021

Figure -5 Details of top five banks in term of Market Capitalization

Interpretation from the above table

1. As we can observe, among the top five banks in India, only one public sector bank has achieved its spot, while the other four are from the private sector. It confirms the shift in paradigm from public-sector banks to private-sector banks.
2. Although the public sector banks have a large customer base due to the reliability factor that comes from government ownership of the banks,
3. Private sector banks are also cashing in on their technological advancement and providing fast services to grow their market share and popularity among consumers, especially when it comes to the urban population.

In the modern era of technology adoption, depositors are looking for trust and facilities provided by public sector banks concerning technology. In a nutshell, it can be concluded that many people in India desire to open and maintain their accounts in a public sector bank for safety reasons. Apart from that, they believe that the service provided by these banks is cost-effective; in addition, if these banks can provide their services with various technological advancements, then PSU banks are the first choice for Indian depositors.

Currently, twelve PSU banks are operating in India. All these banks are different when it comes to technological adoption. Some are adopting technology, while others have started to accept this challenge. This study has taken the data for the last ten years, from 2011–12 to 2020–21. This study will try to determine the variation in the adoption of technology among various public sector banks so that depositors will select a particular PSU, considering the information technology. In addition to that, it also attempts to study variation in terms of deposits and profits of PSU banks operating in India.

1.10 RESEARCH QUESTIONS

RQ1: What is the variation in deposits and profits among different public field banks in India?

Many recent articles have listed the reasons for the differences in deposit and profits variability among public-sector commercial banks. This variability in deposits and profits at individual banks

is of interest to the general public and bank management for many reasons. Variability in deposits and profits influences the bank's worth in cash surplus funds and bank assets, such that variability influences the division of total associate bank reserves and the availability of funds for loans inside the banking system, thus the pathway and pace of economic policy actions and loan rates. The more unstable a bank's deposit and profits are, the more fluid its mix of possessions will be. Among the elements most commonly recognised as influencing deposit and profits changeability is the bank range, but information technology adoption also influences variation in deposits and profits among different public sector banks in India as all banks differ in their technology adoption systems. Thus, it would be necessary to study such variations.

RQ2: What is the impact of income generated by information technology adoption on bank earnings?

Digitization is the most significant change that has occurred in banks. The banking process is now more reliable and quicker than ever. Document and record upkeep and retrieval have been faster and simpler. The basic banking system has been enhanced by computerised banking. The automated banking services facilities provided by banks like automatic teller machines (ATM), cash deposit machines (CDM), cheque deposit equipment, POS equipment, ATM cards, credit cards, etc., provide improved services. Through these services, services have gotten simpler. The banking business now has access to new goods and services, markets, and effective delivery methods. These IT-based services, procedures, and systems may or may not increase earnings. in the current competitive environment Thus, it would be necessary to evaluate the effect of information technology on bank earnings (interest and non-interest earnings).

1.11 OBJECTIVES OF THE STUDY

The proposed goals of the learning are to understand the current state of the significantly changing public sector banking. Public-sector banks participated in the financial activities of the economy as passive participants before the execution of reforms and the introduction of IT. With the aid of technological understanding, they have made the best use of their functional and operational independence following the opening of the change process. Banks must look for novel ways to

boost revenues while cutting expenses, despite being caught between the pressures of competition and development politics.

The objectives of the study are mentioned as follows:

1. To study the difference in deposits among different public division banks in India
2. To study the difference in profits among different public division banks in India
3. To study the impact of income generated by information technology adoption on bank earnings

1.12 INSPIRATION OF STUDY

This topic was chosen for further investigation because, according to financial records, banks spend a lot of money on acquiring and implementing information technology. Several banks' have spent about half of their fixed asset investments on adopting and implementing information technology systems. Given the importance of IT adoption, there may be a strong correlation between information technology and earnings. Evidence from the empirical literature, however, reveals a markedly divergent practical conclusion between these factors, highlighting uncertainty about whether IT spending has improved the effectiveness or routine of the banking division in terms of earnings. Hence, it is significant to understand this relationship in the context of the public sector bank.

1.13 SIGNIFICANCE OF THE STUDY

One cannot overlook how IT affects public sector bank productivity. Utilising core banking apps for centralised operations and process automation has dramatically increased productivity and efficiency. It assisted a bank in making the transition from "branch banking" to "bank banking" and signifies that a client will now be viewed as a bank client rather than merely a client of a specific branch. Additionally, networks enable banks to provide various services via a single web, saving money. Banks now have more options "thanks to specialisation in customers, products, or distribution channels." It helps us shed light on the effects of the influence of IT on bank prosperity. The banks must boost volumes and cut operating costs due to slipping margins. By moving

consumer access to less expensive channels like ATMs and online banking, employees require less labour, which lowers expenses.

This study is helpful to each public sector bank regarding information technology adoption. Banks can identify and correlate all the variables that help us adopt information technology through this study. With this adoption, what areas contribute to maximising revenues and asset creation for these banks? This study also facilitated the correct relationship with the benefits availed to all PSU banks with the adoption of information technology. This study also provides future frameworks for the adoption of other IT-enabled services in public sector banking.

1.14 SCOPE AND COVERAGE

As previously said, many studies have periodically evaluated the financial performance of various bank sectors using the appropriate measures and the goals specified in their research work. This Ph.D. research aims to evaluate variation in deposits and profits across various public sector banks and the contribution of technology adoption to bank earnings. It is necessary to emphasise how information technology has impacted every facet of the banking business. The importance of information technology in the banking industry is enormous. Today's banking climate is highly competitive. Banks follow the latest technologies to expand and survive in a rapidly unstable marketplace. They are seen as an "enabling resource" that can help develop customer-friendly and more adaptable features that respond quickly to marketplace-related kinetics. It can also be used to have productive contact and lower costs with those involved in the banking industry. However, it is important to investigate whether this adoption is bringing any noticeable change in banks earnings or not.

For the current study, data is taken from 2011- 2021 (till September 30, 2021 (all revisions). This timeline is considered because after this time period, merging of Public sector Banks has been implemented by RBI and banks have entered into consolidation phase with respect to all software, accounts, customer Ids, UPI, Cards   etc. Hence post-merger data is not available for the study. So the data for current twelve Public sector banks (till 30th September 2021) is consideration for the study. Further, the time period also includes COVID-19 pandemic but comparative analysis of Pre

COVID and Post COVID periods is out of the scope of this current study because data taken is averaged data for ten years.

This study will cover:

1. The variation in deposits among different public division banks in India
2. The variation in profits among other public division banks in India
3. The impact of income generated by information technology adoption on bank earnings

1.15 THEORETICAL FRAME WORK USED IN THIS STUDY

CAMELS Model

A supervisory grading system called CAMELS was first created in the United States to categorise a bank's general state of health. Every bank and credit union in the United States must follow it, and it is also used abroad by several financial supervisory bodies. A designated supervisory regulator's on-site inspections are paired with a ratio analysis of the financial statements to determine the ratings. The Federal Reserve, Office of the Comptroller of the Currency, the National Credit Union Administration, the Farm Credit Administration, and the Federal Deposit Insurance Corporation are some of the supervisory regulators in the United States. This approach is a widely acknowledged and applied system for grading banks and financial organizations. The concept was first projected by the Basel Committee on Banking Supervision of the BIS. Analysts and authoritarian agencies utilise this technique to estimate the efficiency and risk of financial organisations. This tactic aims to supervise and control financial procedures. Alternatively, we could say whether or not the bank under inquiry is reliable. Using this strategy, we can accurately and effectively anticipate potential risks the bank might encounter in the present and future.

Many authors have evaluated monetary organisations' strengths and shortcomings by employing various approaches. The CAMELS model is well-liked among the models. To ascertain how effectively banks are operating financially, the CAMELS model assesses the five factors (i) asset value, (ii) capital sufficiency, (iii) administration, (iv) earnings worth, and (v) liquidity. Researchers commonly use it. As a result, there are lots of examples in the literature. In their analysis of the financial performance of Bangladeshi Islamic banks over five years, Chakraborty,

Salam, and Rubbanyn (2015) suggested that these banks stay away from risk to maintain long-term profitability. According to recently published research, even though many countries have used the CAMELS model to measure their financial success, none of these studies appear to have been carried out in the Sri Lankan context.

In a study by Suba and Jogi (2015), the routines of two private division banks in India, ICICI and HDFC, were assessed and contrasted. While other indicators did not show a statistically significant difference between the two banks, the capital adequacy ratio indicator did show a statistically significant difference between the two banks. The indices of liquidity, managerial quality, and profitability have a strong positive link with financial success, according to a different study (Azizi &Sarkani, 2014) conducted in Mellat Bank of Iran. Enough capital, high-quality assets, and the financial success of banks did not, however, correlate. The bank under examination had the best economic performance over the course of the study, according to a survey by Mohiuddin (2014) that used a model of commercial banks in Bangladesh using CAMELS characteristics. More recently, Jha and Hui (2014) examined and contrasted the economic performance of commercial banks in Nepal using the CAMELS model. The outcome showed that domestic private banks are comparatively less proficient than foreign-owned joint venture banks, although public sector banks Ibrahim (2014) compared the outcomes of the two banks in the United Arab Emirates. The results showed that both banks performed commendably through the phase under investigation. The Commercial Bank of Dubai saw lower liquidity levels, while Abu Dhabi National Bank profited from having a primarily increased level of liquidity. According to research by Gupta (2014) that used an illustration of Indian public division banks and the CAMELS approach across five years, there is an excellent gap in the performance of all the general division banks.

Taani (2013) looked into how the capital arrangements of Jordanian banks affected how well they performed. The results showed that total debt had a significant and favorable relationship with bank performance as measured by net interest margin, net profit, and return on capital employed. Still, that total debt did not affect the return on equity in the Jordanian banking industry. In 2013, Balaputhiran and Nimalathashan compared the commercial and public banking systems in Sri Lanka. The outcome discovered that, except for BD and BMF, all corporate governance metrics appreciably associate with ROE at the 5% significance rate. This constructive correlation is present across state banks and private banks.

Trivedi (2013) used the CAMELS model of research for the Surat urban cooperative bank. The SPCB was judged to have appropriate levels of capital adequacy, asset quality, managerial effectiveness, and earning capacity. However, the state of liquidity generally wasn't good enough. Keovongvichith (2012) used the CAMELS framework to estimate the banking sector's financial routine and recognise the institutions' strengths and weaknesses. Andries, Vasile, and Ursu (2012) studied the variables influencing bank performance in CEE countries. According to the study's conclusions, the financial services industry's regulatory and supervisory framework reform should continue to strengthen stability and efficiency. Goel and Rekhi (2012) did comparison research on the presentations of a few Indian private and public sector banks. Analysis shows that general-division banks are less profitable than private ones, and comparatively, new banks are more efficient than old ones. Private banks are growing more swiftly than public sector banks and will approach merging more quickly than private sector banks, according to Kumar et al.'s (2012) examination of the health of Indian banks.

Rural, regional banks in India were subjected to the CAMELS technique by Reddy and Prasad (2011) to discriminate between two groups of these banks. They attempted to review the post-reorganisation financial performance of a few particular regional rural banks. Lohia (2011) inspected the presentation of the Indian banking business using the CAMELS Framework and found that, on average, private banks outperform state banks. Additionally, he showed a strong positive correlation between liquidity ratios and return on assets. Matkar (2011) used the CAMELS model to evaluate the monetary routine of the Indian MSC Bank. He advised banks to continue operating profit as their primary goal and adopt top-notch risk management practises to survive. In terms of competitiveness, Gupta and Verma (2008) evaluated the monetary routine of Indian private division banks. They came to the opinion that risks originating from unfavourable events and managing non-performing assets are the solution to the elevated prosperity of Indian banks and that openness and good authority will serve as the fundamental guiding principles for banks in India. The acronym CAMELS represents six crucial performance criteria. (i) Capital sufficiency, (ii) Asset quality, (iii) Management Skills, (iv) Earnings Sufficient, (v) Liquidity Position, and (vi) Compassion for Market Risk are all represented by the letters C. Bank regulatory agencies use the internationally recognised CAMELS rating system to assign financial organisations a score based on the acronym's six criteria. Supervisory authorities assign a score to

each bank. Many denote the best performance for each factor, and a score of five indicates the worst performance.

Six essential parameters for CAMELS approach

1.Capital Adequacy: Nobody can reject the significance and crucial function that principal sufficiency plays in the performance of any monetary institution. Any banking and financial organisation must have sufficient capital to sustain losses from defaults, operating losses, natural disasters, etc. The organisation must have adequate money to offset these losses while continuing to be monetarily safe and stable to continue smooth operations. As per Basel III regulations, financial institutions must have a minimum capital requirement. Analysts and regulators should consider profit potential, capital trend analysis, dividend policy interest practises, future growth plans and the risks connected with them, and the general state of the economy. They also need a ratio analysis to establish the institution's capital sufficiency.

2.Asset Quality: Credit risk is a factor in all loans and investments made by institutions. A better grade and a greater credit risk are mutually exclusive. However, the borrower's creditworthiness influences the credit risk of loans in turn. Loans to banks and other financial institutions that are widely viewed as being secure and accessible to the general public or consumers should be separated into two categories by the authorities. They should gauge the institution's investments, considering their quality, trend, and potential for profit. Regulators must consider how ready their policies are to withstand any credit loss. Additionally, they must look around and assess if the institution has a well-established system to identify potential threats quickly.

3.Management Capabilities: Any financial organisation's capacity to successfully balance risk and return prospects is essential to its success. To maximise earnings and minimise risk, the bank's management should be proactive, skilled at utilising cutting-edge technological and innovative trends, and open to new ideas and investment prospects. Risk includes marketplace, legal, social, operational, and credit risks. Management should establish internal control measures to detect and manage potential workplace threats. The authorities should investigate the institution's internal audit practises, the management's openness and transparency in its communications, and financial reporting standards. The ratings should also consider the management's long-term growth strategy,

growth rate, total advances to total profit, the business created per staff member, and return on advances. These are essential ratios to consider while assessing managerial competencies.

4.Earnings Sufficiency: Any monetary institution's profits are supposed to be enough. The takings ought to also be consistent and reliable. The rate of return must also go beyond the cost of the principal to be profitable. The analysts gauge the management's perspective and its plans for sustaining and boosting profits. They also assess the institution's basic earnings because they are typically long-term and lasting. While trading activity revenues are more irregular and transient and can negatively affect ratings, payments from services and interest are necessary because they are more long-term. Net profit to total assets, ROE and ROA, and net interest margin are significant ratios determining an institution's ability to satisfy its financial responsibilities.

5.Liquidity Position: Liquidity is essential for every bank or monetary organisation. It ought to have adequate funds on hand. The liquidity can help to overcome the unforeseen elevated withdrawals or cash-flow necessities so that it shouldn't affect the institution's regular operations. Analysts assign grades to institutions as per their liquidity status. It is a significant ranking element once again. In the event of a protracted and severe liquidity crisis, the entire banking system and economy could collapse. Analysts consider a few key ratios when analysing an organisation's liquidity position. The two examples of these ratios (NSFR) are the net stable funding ratio (NSFR) and the liquidity coverage ratio (LCR).

6.Sensitivity to Market Risk: Analysts grade financial institutions while considering market risks that can influence the routine of a specific company. Any institution must manage interest rate risk, the most significant market risk. A boost in interest rates will directly increase its net interest income, and vice versa. Analysts should also consider the institution's contact with any particular area, such as business, energy, agriculture, etc., and its prospects. The ratings may fall if the outlook for that specific industry is bleak or unknown. Furthermore, any institution's ratings with sizable exposure to the stock, commodity, or foreign exchange markets may alter. Value at Risk (VAR) is a technique that financial institutions, like banks and other financial institutions, use.

Application of theoretical model in the Study:

CAMELS MODEL		
C	**Capital adequacy**	Fixed by RBI - 12 % Current
A	**Assets quality**	Assets
M	**Management**	Government Of India - Holding
E	**Earning quality**	Profits, Interest and Non Interest Earning
L	**Liquidity**	Deposits
S	**Sensitivity**	Interest Rate Risk

Source: Author's own

Figure 6 – Use of CAMELS Model in Study

1.16 RESEARCH HYPOTHESES

Following Hypotheses are framed on Deposit's, Profits and Information Technology adoption.

Hypotheses for Deposits -D

1.H0 (D): There is no significant **variation in Deposits** among different Public sector banks in India.

H1 (D): There is significant **variation in Deposits** among different Public sector banks in India.

2. H0 (D): There is no significant **variation in Deposits / Total Assets** among different Public sector banks in India.

H1 (D): There is significant **variation in Deposits / Total Assets among** different Public sector banks in India.

3.H0 (D): There is no significant variation in **Deposits /Total Assets Growth** among different Public sector banks in India.

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H1 (D): There is significant variation in **Deposits /Total Assets Growth** among different Public sector banks in India.

4.H0 (D) : There is no significant variation in **Deposits/ Branch** among different Public sector banks in India.

H1 (D): There is significant variation in **Deposits/ Branch** among different Public sector banks in India.

5. H0 (D): There is no significant variation in **Deposits / Branch, Growth** among different Public sector banks in India.

H1 (D): There is significant variation in **Deposits / Branch, Growth** among different Public sector banks in India.

Hypotheses for Profits -P

1.H0(P): There is no significant variation in **Operating Profit per branch** among different Public sector banks in India.

H1(P): There is significant variation in **Operating Profit per branch** among different Public sector banks in   India.

2 H0(P): There is no significant variation in **Growth of Operating profits per branch** among different Public sector banks in India.

H1(P): There is significant variation in **Growth of Operating profits per branch** among different Public sector banks in India.

3.H0(P): There is no significant variation in **Growth of Operating profits** among different Public sector banks in India.

H1(P): There is significant variation in **Growth of Operating profits** among different Public sector banks in India.

4.H0(P): There is no significant variation in **Operating profits to total earnings** among different Public sector banks in India.

H1(P): There is significant variation in **Operating profits to total earnings** among different Public sector banks in India.

5.H0(P): There is no significant variation in **Growth of operating profit to total earning** among different Public sector banks in India.

H1(P): There is significant variation in **Growth of operating profit to total earning** among different Public sector banks in India.

6.H0(P): There is no significant variation in **Net profit per branch** among different Public sector banks in India.

H1(P): There is significant variation in **Net profit per branch** among different Public sector banks in India.

7.H0(P): There is no significant variation in **Growth of Net profit per branch** among different Public sector banks in India.

H1(P) There is significant variation in **Growth of Net profit per branch** among different Public sector banks in India.

8.H0(P): There is no significant variation in **Net Profits to total assets** among different Public sector banks in India.

H1(P): There is significant variation in **Net Profits to total assets** among different Public sector banks in India.

9.H0(P): There is no significant variation in **Growth of Net Profits to total assets** among different Public sector banks in India.

H1(P): There is significant variation in **Growth of Net Profits to total assets** among different Public sector banks in India.

10.H0(P): There is no significant variation in **Net Profits to total Earning** among different Public sector banks in India.

H1(P): There is significant variation **Net Profits to total Earning** among different Public sector banks in India.

11.H0(P): There is no significant variation in **Growth of Net Profits to Total Earning** among different Public sector banks in India.

H1(P)There is significant variation in **Growth of Net Profits to Total Earning** among different Public sector banks in India.

Hypothesis for Interest earning (IE)

1.H0 (IE): Information technology adoption has no significant effect on Bank Interest Earning**.**

H1(IE): Information technology adoption has significant effect on Bank Interest Earning.

Hypothesis for Non Interest Earning

1.H0 (NIE): Information technology adoption has no significant effect on Non Interest Earning**.**

H 1(NIE): Information technology adoption has significant effect on Non Interest Earning.

*Information technology and Information and Communication technology (ICT) has been used interchangeably in the current study.

CHAPTER SUMMARY

This chapter gives an overview of the financial system and the Indian banking industry. In this chapter, the chronological progress of banking in India is explained. It also highlighted ICT adoption in Indian banking and addressed major challenges faced by public sector banks in terms of IT adoption. It also explains the dominance of PSU banks in terms of total assets. However, when it comes to the top banks in terms of market capitalization, only one PSU bank makes the list. This chapter also detailed major determinants of technology adoption from the past to the present, along with the purpose and significance of the study, research questions, research objectives, inspiration, scope of the study, a basic theoretical framework, and hypothesis testing details.

CHAPTER -2

Literature Review

2.1 REVIEW OF LITERATURE

Research depends upon one central aspect, novelty. It requires skills like inventiveness and uniqueness, along with different approaches such as raising a query and asking the question, exploring, criticizing, etc., to draw conclusions and share those findings to enhance further teaching and learning. There are various tools, among which critical literature review enables the researcher to have a clear and brief knowledge of all essential aspects of the study and support to build a base for the research problem. Therefore, a valuable and specific literature review helps to develop the foundation for the study's hypothetical and operational complexity and enables the researcher to create an argument and justification for the significance of the study.

In this chapter the review of available and published literature in banking, Technology adoption, ICT, Public sector Banking, ATM, Credit card, Debit Card, and POS etc is done.. The review of these constructs presented in different sections includes definitions, detailed meaning and concept, types, and sub-constructs used to measure the impact in this study.

The benefits of globalization are numerous and diversified for nations. With the minimization of the gap in economic borders between different countries, businesses have multiple opportunities to invest in new markets. The globalized effect of information and technology has also significantly impacted all business, social and economic elements. Globalization has also increased competition due to new players entering the market, and banking is one such sector that has witnessed a tremendous increase in competition after globalization. By bringing together finance demanders and fund suppliers, the banking world plays a crucial role in the economies of various nations. It has contributed to a rise in the number of investments countries make. The upsurge in the banking sector has lowered the unemployment rate as well. Therefore, a strong banking sector promotes national economic growth and has emerged as a significant sector. The extent of the banking field is expanding globally, but due to intense competition, the banking industry's global profitability has significantly decreased.

On the other side, it is also noted that there is a considerable increase in the use of electronic banking. Many studies admit the positive impact of IT on the corporate world. Financial and

banking services closely monitor technological advancements, adopting and using those most commonly. The rapid changes in banks' functioning brought about by ongoing technological advances, and other global developments have made the competition among banks more challenging. They have increased the contention in the banking world and its growth worldwide. Electronic banking is becoming increasingly widespread on a global scale. By allowing clients to conduct banking activities at a higher degree of comfort, the primary goal of this circumstance is to boost customer satisfaction. In terms of e- banking, POS, debit card, ATM, and card data are used, whereas returns on price/earnings ratio and equity changes are measured as a touchstone of the economic achievement of the banks. In these countries, e-bank reserves change the banks' economic achievement. Hence bank took action to persist in such an explosive atmosphere. Electronic banking products are becoming significant to both banks and customers daily. The favorable benefits on performance are primarily due to the cost ability that internet banking ensures. When a website or ATM does a built-in transaction, the cost can be decreased by 40% to 80%. Internet banks and different e-banking products reduce banks' typical operational costs and physical overhead expenses. The most critical factors are a comparatively minimal threat in the count of the good profits and costs through such products. Though, the latest research (Cho and Chen, 2021; Kou et al., 2021; Tunay et al., 2019; Wang et al., 2021; Zhang and Yang, 2019; Saidi, 2018; Scott et al., 2017; Weigelt and Sarkar, 2012; Ciciretti et al., 2009; Arnaboldi and Claeys, 2008; Kagan, 2005; DeYoung, 2001; Hasan, 2002; Pigni et al., 2002; Sullivan, 2000) have found an affirmative consequence of investing in the economic skill going on banks and their effectiveness.

The advantages of technology development in banking are evolving steadily in the Indian financial sector and adding to the foundation for the country's overall economic success. Everyone grows with the help of technology, whether in business, education, or banking. Banks invest heavily in innovative or novel banking techniques to fully utilize technology. For example, ATMs, mobile banking-banking, CRM, and tele-banking.

Additionally, electronic banking, Indian Financial Networks, real-time gross settling, and RBI all demonstrate how the central bank consistently implements novel technical payment methods. The Indian financial system is more complex than the international monetary system due to the above mentioned factors. By encouraging inclusive economic development across many industries, IT

advancements significantly contribute to growth and inclusion. Using IT in banks strengthens administrative backend procedures, increases competitive efficiency, improves front-end operations, and lowers customer transaction costs. The India Reserve Bank has extensively pursued the creation of cutting-edge methods for the Indian banking sector. Core Banking Solution (CBS) is a significant technical advancement in the banking industry that connects customers from all bank branches online with their accounts. The banking sector in India has quickly advanced in its shift to a more competitive business climate. Technology infrastructure development was a significant component of the banking sector reform.

Every situation inevitably changes, and the Indian financial sector is no exception. The use of various channels and technology has increased the sector's reach to all remote regions of the nation. Electronic Banking was born out of India's financial transactional change, but it wasn't without difficulties. Bank customers needed alternate channels to reduce time spent in the banking halls because their daily banking activities had advanced. However, to cut costs, the bank also needs other media that could transfer the majority of its procedures, basic banking, and services to its clients.

Total 143 papers were reviewed from reputed journals out of 55 finds to be suitable and in line with the topic. This helped identifying gaps between the existing research and topic for the study.

Asma'a Al-Amarneh Jordan, H. Y., Atta, A. B., & Khalaf, L. (2023). Nexus between information technology investment and bank performance: the case of Jordan. Continuous performance improvement is expected by bank stakeholders, including creditors, investors, regulators, and other bank stakeholders. Bank managers can use information technology (IT) as a strategic resource to enhance their bank's capabilities and hence acquire competitive advantage in order to accomplish this goal. In this investigation, the profitability and effectiveness of Jordanian commercial banks are contrasted with expenditures on information technology (IT). While adjusting for bank size and financial leverage, three metrics are used to assess bank profitability: return on equity (ROE), return on assets (ROA), and net interest margin (NIM). The cost efficiency ratio is used to calculate cost efficiency. 13 commercial banks that were listed on the Amman Stock Exchange between 2010 and 2021 make up the study sample. Descriptive statistics, correlation analysis, the panel least squares method, and fixed effects multiple regression models are all employed to ascertain the relationship between the variables. According to the research, banks invest an average of 0.61

percent of their total assets in hardware and software for information technology. Furthermore, it is anticipated that banks that make IT investments will perform better over time as shown by their increased profitability and efficiency. In comparison to larger banks, smaller banks have higher IT investment as a percentage of assets. Less leveraged banks often have a higher IT investment to asset ratio (0.69%) when compared to highly leveraged banks. The research demonstrates that banks that are profitable (as determined by ROE) spend more than 1.1% of their total assets on IT. When compared to banks that are less efficient, highly efficient banks also invest more in IT (0.6%).

Khamees, B. A. (2023). Information Technology Governance and Bank Performance: A Situational Approach. In order to better understand how organizational competition (OC) affects the relationship between the efficiency of information technology governance (ITG), which underpins accounting information systems, and the financial performance of banks, this paper will present empirical data. Return on Investment (ROI), Return on Equity (ROE), and Tobin's Q are indicators of financial performance. Over the course of five years, from 2015 to 2019, averages of these variables were calculated. In fact, there is evidence to support the claim that deploying ITG will help banks perform better. The fundamental hypothesis of this study, to be more precise, is that the relationship between ITG and bank performance is dependent upon the proper interaction and matching between ITG and the OC. The senior management of Jordanian banks are part of the study population. of light of this, a questionnaire with 16 paragraphs was created and given to senior managers of 23 banks between January and May 2021. As a consequence, 142 valid surveys—or 61.7% of the questionnaires anticipated to be collected—were gathered. Multiple regression, the t-test, exploratory component analysis, and descriptive statistical metrics are used to examine and process data. The findings demonstrate that, despite the large impact of OC on ITG, there is no correlation between ITG and OC interaction and bank performance as measured by the three performance proxies. The study's findings imply that either banks do not gain anything from ITG in terms of performance improvement or that chief executive officers' opinions of ITG in their banks are false. It should be made clear, though, that the respondents' assessments of the effectiveness of ITG use in their banks may have been influenced by their values and views.

Thakur, S., Rastogi, S., Parashar, N., Tejasmayee, P., & Kappal, J. M. (2023). In the modern workplace, Information and Communications Technology (ICT) plays a crucial role. Various

researchers are looking into its effects in a number of different fields. The effect of ICT on bank profitability is covered in this paper. In India, there are 33 banks in operation. The study covered a sample span of 10 years, from 2010 to 2019. The study sheds light on how ICT enhances bank profitability both during and after COVID-19. The results are estimated using panel data analysis. According to this study, there is a linear relationship between ICT and banks' profitability (NIM) in India. ICT and profitability, however, appear to have a favorable U-shaped link, according to the quadratic association. Additionally, the profitability and connectivity of ICT are both significantly but negatively impacted by the Net of Non-Performing Assets. According to the findings, banks should make long-term investments in ICT. The findings do not significantly change how policymakers, shareholders, or managers should approach the implementation of ICT tools as a critical component of boosting a bank's long-term profitability. Additionally, the level of otherwise decreased ICT investments cannot be a successful move. The current study adds to the body of banking literature by presenting fresh data on the relationship between ICT and profitability when NPA is present. This report makes the case for the use of ICT in banks to boost their profitability. ICT aids the bank in upholding accountability and transparency, as well as expanding the reach of financial services. Once more, this circumstance improves the nation's economy.

GBANADOR, M. A. (2023). Electronic banking systems and the performance of deposit money banks in Nigeria. This study looked at how Nigeria's deposit money banks (DMBs) performed in relation to electronic banking systems (e-banking). The study used secondary data gathered from the Central Bank of Nigeria's statistical bulletin using an ex-post facto research design. The study used monthly time series data from 2019 to 2021. For testing stationarity, the Augmented Dickey Fuller (ADF) and Phillips-Perron were employed. Data analysis also included the application of the Ramsey Reset test, heteroskedasticity test, Breusch-Godfrey serial correlation LM test, Johansen cointegration test, Parsimonious Error Correction model, and completely modified Least Square. The study discovered that the performance of DMBs in Nigeria was not significantly impacted by e-banking systems in the short term. The results of the long-term investigation, however, showed that mobile banking has a favorable and significant impact on the performance of DMBs in Nigeria, whereas ATM and POS have a good but minor impact. The Johansen Co integration and completely modified least squares results demonstrate a long-term association between the performance of DMBs and e-banking. In order to maintain their performance, DMBS

should educate clients about the advantages of using ATM, POS, and other e-payment channels, as well as provide high-quality mobile banking services, according to the study's conclusion that e-banking influences DMBs' performance in Nigeria.

Saroy, R., Jain, P., Awasthy, S., & Dhal, S. C. (2022). Impact of digital payment adoption on Indian banking sector efficiency. Using Data Envelopment Analysis and dynamic panel data techniques, we discover that Indian banks' adoption of digital payment systems has improved their cost effectiveness. When banks go digital, there may be an increase in efficiency due to cheaper availability of these inputs rather than a direct reduction in the inputs used in intermediation. Assimilation into the full digital payments environment, as opposed to piecemeal use of technology, may be the key to achieving these benefits. We observe persistence in both cost and technological efficiencies. Other significant factors that affect cost efficiency include the relative asset holdings of banks within the sector, non-performing assets, cost of deposits, yields on advances, and equity.Shaikh, I., & Anwar, M. (2023) Digital bank transactions and performance of the Indian banking sector.In our study, we look at how the performance of Indian banks is affected by digital bank transactions. The goal of the study is to pinpoint the elements of the digital mode of transaction that affect financial and operational performance and lower bank costs. A panel data set for the years 2011 to 2020 has been created, taking into account 32 public and private banks. On the surface, it appears that the proportion of public sector banks in digital transactions with their counterparts in the private sector banks has decreased. Real-Time Gross Settlement (RTGS) and National Electronic Fund Transactions (NEFT) value increases by 1% are shown to improve business per employee by 0.03% and 0.08%, respectively. The CASA to Deposit ratio (0.016% and 0.0078%) is in fact further explained by a change in RTGS and NEFT transactions. A change in RTGS also has a significant impact on advancements (0.7%). The cost of cash has been significantly impacted by credit card usage at POS and ATMs. Our research suggests two applications: First, RTGS-based transactions must be promoted more quickly; this will improve the bank's performance. In order to lower the cost of cash, banks should enable credit-based digital transactions.

Pandey, S. (2023). Impact of online banking on the profitability of Nepalese commercial banks. The present research investigates the influence of online banking on the profitability of commercial banks in Nepal. The dependent variables are the return of assets and the return of equity. The

chosen independent variables include ATM banking, point of sales banking, QR code, mobile banking, internet banking, and credit card. The utilization of primary data is employed to evaluate customer perspectives on online banking services. This research is founded on a combination of primary and secondary data sources, and a total of 163 participants were included in the study. In order to attain the objectives of the research, a meticulously designed questionnaire has been formulated. The study aims to evaluate the statistical significance and relative importance of online banking in relation to the profitability of commercial banks in Nepal, through the estimation of correlation coefficients and regression models.

Bernard Azolibe, C., Okonkwo, J. J., & Obi-Nwosu, V. O. (2023). The study, based on observed data and , we postulate a novel mechanism by which technology-based banking services, such as automated teller machines (ATMs), point of sale (POS), mobile, and internet banking, drive bank deposit growth. For the time period from 2006 quarter 1 to 2019 quarter 4, the short-run, long-run, and causal relationships among the variables were examined using the autoregressive distributed lag (ARDL) bounds-testing and Granger causality approach. The study used an error correction model (ECM) since the variables have a long-run cointegrating connection. According to the findings of the ARDL-ECM analysis, there is a significant positive association between total bank deposits in Nigeria and the number of ATMs and the dollar amount of POS transactions, both in the short and long terms. The results for mobile and internet banking were found to be unfavorable and negligible, indicating that these services are still not widely used in Nigeria. Additionally, the Granger causality test result showed that only the number of ATMs has a causal influence on bank deposits, indicating that commercial banks should continue to deploy ATMs as this is thought to be the most effective way to increase deposit growth. According to the study's conclusions, banks in Nigeria should collaborate with the telecommunications industry to expand their network coverage and offer the quick network speeds that are required for the success of mobile and internet banking.

Table -1 Summary of Literature Review -2023

Title	Year	Author	Journal/Vol	Key Findings
Nexus between Information technology investment and bank performance: the case of Jordan	2023	Asma'a Al-Amarneh Jordan, H. Y., Atta, A. B., & Khalaf, L.	"Banks and Bank Systems", 15 February 2023	In comparison to larger banks, smaller banks have higher IT investment as a percentage of assets. While adjusting for bank size and financial leverage, three metrics are used to assess bank profitability: return on equity (ROE), return on assets (ROA), and net interest margin (NIM).
Observations and specific review: This study uses three profitability matrix only. While deviation in deposits is not taken into consideration .				
Technology-based banking and bank deposit: The Nigerian commercial banks' experience.	2023	Bernard Azolibe, C., Okonkwo, J. J., & Obi-Nwosu, V. O.	African Journal of Science, Technology, Innovation and Development,	ARDL-ECM analysis, there is a significant positive association between total bank deposits in Nigeria and the number of ATMs and the dollar amount of POS transactions, both in the short and long terms. The results for mobile and internet banking were found to be unfavorable and negligible, indicating that these services are still not widely used in Nigeria
Observations and specific review: Only Number of ATM and POS is used to test the effectiveness of IT adoption**.**				
Information Technology Governance and Bank Performance: A Situational Approach.	2023	Khamees, B. A.	International Journal of Financial Studies, 11(1), 44	Return on Investment (ROI), Return on Equity (ROE), and Tobin's Q are indicators of financial performance. Over the course of five years, from 2015 to 2019, averages of these variables were calculated. In fact, there is evidence to support the claim that deploying ITC will help banks perform better
Observations and specific review: ICT drivers like POS, ATM ,Credit Card ,Debit Card are missing **.**				

The Impact of ICT on the Profitability of Indian Banks: The Moderating Role of NPA	2023	Thakur, S., Rastogi, S., Parashar, N., Tejasmayee, P., & Kappal, J. M	Journal of Risk and Financial Management, 16(4), 211	The study sheds light on how ICT enhances bank profitability both during and after COVID-19. The results are estimated using panel data analysis. According to this study, there is a linear relationship between ICT and banks' profitability (NIM) in India. ICT and profitability, however, appear to have a favorable U-shaped link, according to the quadratic association
Observations and specific review: Only NIM are used to judge the bank's profitability. Profitability per Branch are missing in study.				
Electronic banking systems and the performance of deposit money banks in Nigeria	2023	Gbanador, m. A	Nigerian Journal of Management Sciences Vol, 24(1a)	The study discovered that the performance of DMBs in Nigeria was not significantly impacted by e-banking systems in the short term. The results of the long-term investigation, however, showed that mobile banking has a favorable and significant impact on the performance of DMBs in Nigeria, whereas ATM and POS have a good but minor impact.
Observations and specific review Only Mobile making is used as a proxy of ITC adoption. Study on Impact of ATM and POS adoption in long was not studied**.**				
Impact of digital payment adoption on Indian banking sector efficiency	2022	Saroy, R., Jain, P., Awasthy, S., & Dhal, S. C	Journal of Banking and Financial Technology, 1-13.	When banks go digital, there may be an increase in efficiency due to cheaper availability of inputs rather than a direct reduction in the inputs used in intermediation.
Observations and specific review : This Study is only restricted to use of ICT in removing intermediation.				

Digital bank transactions and performance of the Indian banking sector	2023	Shaikh, I., & Anwar, M.	Applied Economics, 55(8), 839-852	On the surface, it appears that the proportion of public sector banks in digital transactions with their counterparts in the private sector banks has decreased. Real-Time Gross Settlement (RTGS) and National Electronic Fund Transactions (NEFT) value increases by 1% are shown to improve business per employee by 0.03% and 0.08%, respectively. The CASA to Deposit ratio (0.016% and 0.0078%) is in fact further explained by a change in RTGS and NEFT transactions.

Observations and specific review: This Study do comparative study of PSU and Private Banks as one unit. However the study specific to each bank is missing**.**

Impact of online banking on the profitability of Nepalese commercial banks	2023	Pandey, S	Perspectives in Nepalese management, 301	The chosen independent variables include ATM banking, point of sales banking, QR code, mobile banking, internet banking, and credit card. The utilization of primary data is employed to evaluate customer perspectives on online banking services.

Observations and specific review: This study is based on understanding customer perspectives only. The impact of ICT adoption on Banks profitability is not studied**.**

Source: Author's own after literature Review

According to the study of Gangopadhyay, P., Jain, S., & Bakry, W. (2022) lowering operational expenses and enhancing the way banks provide financial intermediation are two ways information technology (IT) is intended to enhance performance of the bank . The specific impact of IT on bank's productivity, however, have yet to be determined by empirical evidence because some researchers find evidence to support the Solow Paradox while others find evidence to refute this paradox. The inconsistent results are partially attributable to the variation in the quality of financial services. We take into account the top level banks of Australia, who have adopted standardized

measures for providing quality banking services, to avoid the issue of discrepancy. They examine the impact of information technology on the cost and profit effectiveness of Australian banks from 2000 to 2019 using the dynamic panel data approach, panel ARDL and cross-sectional-ARDL (CS-ARDL) models. We clearly demonstrate that the adoption and spread of IT investment has increased bank profit margins, defying the conventional wisdom that IT has not been able to effectively gather soft data in the banking sector. In addition, we observe that the cost borders have increased as a result of the IT boom. There is proof that relationship banking in Australia has been improved by IT, despite increases in operational inefficiencies, moving the profit boundaries up.

For this reason, the government continually introduces regulatory measures to make sure it is dependable and safe to add to the evolving face of technology. Finland was the opening nation on the planet to hold the front in electronic-banking. The opening financial institution in India to launch the use of electronic banking in 1997 under the name Infinity was ICIC bank. By using delivery channels like internet banking, mobile banking, telephone banking, ATMs, debit/credit cards, e-cheques, smart cards, e- clearing services (ECS), e- transfer funds (ETF), e- data interchange (EDI), etc. Banking institutions have been able to computerize financial transactions, which has stabilized the Indian economy and investigated the result of electronic banking products happening bank prosperity plus performance. The economic and banking developments observed in the previous few decennia are a reaction to the transformation of their organizational configuration and the quickening pace of ICT growth. Several nations developed political and strategic ties with one another, leading to the emergence of free economies to enhance the effectiveness of financial systems within conventional systems. ICT, business intellect, and business study are often improved in developed nations to keep up with international trade (Udin et al., 2021).

Awwad, and Khoury, R. (2021), while calculating governance and bank-specific variables, this case intends to estimate the effect of IT administration on a bank's financial performance in Palestine. Six regional banks were listed on the Palestine Exchange between 2008 and 2019 to make up the sample. While the presence of Information technology expertise on the board of directors and in executive management serves as a proxy for IT governance, two accounting procedures—Return on Assets (ROA) and Return on Equity—provide information on performance (ROE). Findings underline the significance of IT governance and demonstrate the

necessity of developing and upgrading Palestine's corporate governance standards. In line with these claims,

Kwan et al. (2021) demonstrate that during the Covid epidemic, deposits poured into banks with superior IT skills, and businesses were more likely to move to these banks. Additionally, well-established internet sales channels make it easier to extract rents through product cross-selling, which increases profits.

Malik Mustafa. 2021, technology and its application must advance in the new world, and people increasingly rely on the Internet for their daily needs. In light of this, I suggest the Bank of Muscat implement a mobile banking system. The system can vaguely access a user's bank account and carry out specific operations and transactions, including payments, transfers, account inquiries, and other services that will be further shown. Some customers are not yet comfortable using m-banking services, so the solution I am recommending needs to be upgraded and promoted appropriately.

According to Arora (2021), the nationalization of the banks in India, this business has been growing steadily while meeting the needs of various societal segments. The banking industry recently achieved quick progress by using IT as a platform and attempting to reach higher altitudes. A focus on essential concerns, including the market, clients, competition, technology, and society, has driven banks to implement the most sustainable best practices in the world due to customer conscience. Although Indian banking has used a variety of measures to speed up growth through time and space, more needs to be done in terms of risk, security, and other factors.

Wang et al. (2021) stated that consumer understanding of various banking technologies impacts banks' earnings, including internet banking, mobile banking, ATMs, debit cards, RTGS, and credit cards. In addition, Fintech lowers the cost of financial intermediation while increasing bank profitability and risk management.

Dadoukis, Fiaschetti, and Fusi's (2021) study view the Covid-19 pandemic's early stages and how early IT deployment exaggerated bank performance. We express that in terms of Tobin's q, lending, market returns, and elevated information technology users outperform. As per our statistics, added loans are given under the United States Paycheck Protection Program. Few loan changes are due to the Corona virus when pre-disaster Information technology reserves are

superior. This finding provides the latest results that implementing computers and automation makes banks extra flexible during disasters, ultimately increasing economic strength.

Cho and Chen (2021) mention how Fintech innovation improves Chinese bank performance. Likewise, Sheng (2021) demonstrates how Fintech makes banking credit facilities easier in Chinese banks, chiefly for central banks. Kou et al. (2021) show how Fintech increases a bank's competitive edge and thereby enhances the economic routine of banks in Europe.

According to Feyen et al. (2021), in IT infrastructure, in terms of hardware, software, and other integrated tools, banks can achieve a reasonable growth rate and have a more integrated relationship with their customers. Using various channels, such as all-day hours, remote financial facilities, regular branches, telebanking, Internet, ATM, and personal computers, can help banks re-design their operations to achieve more profitability. It was argued that technology improves banks' performance in two ways: i) by improving their monitoring and screening capabilities (Berg et al., 2020); and (ii) by helping them make better lending decisions, making it easier to choose the best borrowers, hence lowering the risk of default.

Table- 2 Summary of Literature Review -2021-22

Title	Year	Author	Journal/Vol	Key Findings
In search of a rational foundation for the massive IT boom in the Australian banking industry: Can the IT boom really drive relationship banking	2022	Gangopadhyay, P., Jain, S., & Bakry, W	International Review of Financial Analysis, Volume 82 July 2022	They examine the impact of information technology on the cost and profit effectiveness of Australian banks from 2000 to 2019 using the dynamic panel data approach, panel ARDL and cross-sectional-ARDL (CS-ARDL) models. Study clearly demonstrate that the adoption and spread of IT investment has increased bank profit margins, defying the conventional wisdom that IT has not been able to effectively gather soft data in the banking sector.

Observations and specific review : Impact of ICT adoption in PSU banks was not studied.

Information technology governance and bank performance: evidence from Palestine	2021	Awwad, and Khoury, R	Journal of Decision Systems	While the presence of Information technology expertise on the board of directors and in executive management serves as a proxy for IT governance, two accounting procedures—Return on Assets (ROA) and Return on Equity—provide information on performance (ROE). Findings underline the significance of IT governance and demonstrate the necessity of developing and upgrading Palestine's corporate governance standards

Observations and specific review: IT governance is essential for Palestine's corporate governance standards to improve performance.

The impact of financial technology on China's banking industry: An application of the metafrontier cost Malmquist productivity index.	2021	Kwan et al	he North American Journal of Economics and Finance, 57, 101414.	Deposits poured into banks with superior IT skills, and businesses were more likely to move to these banks. Additionally, well-established internet sales channels make it easier to extract rents through product cross-selling, which increases profits.

Observations and specific review: Banks with IT skills and internet sales channels increase profit.

Impact of Information technology on the banking sector in developing countries.	2021	Malik Mustafa.	International Journal for Modern in Science and Technology, 201-204.	The system can vaguely access a user's bank account and carry out specific operations and transactions, including payments, transfers, account inquiries, and other services that will be further shown. Some customers are not yet comfortable using m-banking services.
Observations and specific review :Concerns with respect to safe use of M- Banking is addressed in this study-banking services allow users to access their bank accounts because of which users are not comfortable.				
Technology adoption in banking sector: the Indian context.	2021	Arora, R.	Academy of Strategic Management Journal, 20, 1-16.	The banking industry recently achieved quick progress by using IT as a platform and attempting to reach higher altitudes. A focus on essential concerns, including the market, clients, competition, technology, and society, has driven banks to implement the most sustainable best practices in the world due to customer conscience.
Observations and specific review: Banks are using IT to address market, client, competition, technology, and society concerns. Comparative study among banks was not covered.				
Can Fintech improve the efficiency of commercial banks? —An analysis based on big data.	2021	Wang et al.	Research in international business and finance, 55, 101338.	Consumer understanding of various banking technologies impacts banks' earnings, including internet banking, mobile banking, ATMs, debit cards, RTGS, and credit cards. In addition, Fintech lowers the cost of financial intermediation
Observations and specific review: Fintech reduces cost of financial intermediation**.** This is possible with the use of ATM ,RTGS, Debit card etc **.**Comparative study among banks is not covered				

IT adoption and bank performance during the Covid-19 pandemic.	2021	Dadoukis, Fiaschetti, and Fusi's	Economics Letters, 204, 109904.	We express that in terms of Tobin's q, lending, market returns, and elevated information technology users outperform. As per our statistics, added loans are given under the United States Paycheck Protection Program
Observations and specific review: Comparative study on Banks performance is not Covered**.** Tools of IT adoptions and interlinkage is not being explained.				

Source: Author's own after literature Review

In their study, Nigam and Sameer Sharma (2020) focused on ICT's impact on India's banking sector. Based on ICT and banking literature, the analysis is conceptual. Researchers highlighted the key factors that Indian banks consider when adopting ICT in the banking field, the expanding global trends in banking ICT and the role of ICT in the banking field. The research finds banks engage in various activities in addition to updating technology. For different processes, including issuing cheque-books, mailing account statements, debit/credit card statements, setting up online accounts, designing new products, and so on, centralized processing is done at the corporate level. In addition, most branches now offer open contact centers, individual window operations, customer interaction management systems, etc. In general, banks are using more ICT in their daily operations.

Chen, T. H., & Peng, J. L. (2020) analysed the literature related to financial innovation because financial technology (fintech) has been effectively applied in academic circles and the policy-making arena. The authors also evaluate how financial innovations may affect bank performance and liquidity risk. The authors study a sample of Taiwanese commercial banks between 2010 and 2017 using three proxies for financial innovation: financial patents (i.e., applications for invention), Research and development expenditures, and financial news pertaining to Fintech (i.e. innovation intentions). Bank performance advantages from financial innovation are not uniform; banks with high R&D spending perform poorly, whereas those with innovation goals do better.

Le and Ngo (2020) prove that utilizing cutting-edge technologies significantly improves financial performance. Abul Hasan et al., (2020) contend that the size of the bank has a sizable moderating

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effect on the profitability of the bank. Dong et al., (2020) discussed the beneficial effect may be attributed to the certainty that using online banking and modern software enhances the power of credit risk while lowering operating and information costs. He analyzes the relationship between profit and cost efficiency in banks and the adoption of online channels. To gauge the investment in digitization, they consider a dummy variable.

Adding together, AlAli and AlKulaib (2020) demonstrate an analytically meaningful link between bank branch count, a replacement for bank size, and effectiveness. Information and communication technology (ICT) includes software, hardware, networks, media collection, storage, processing, and presentation. The usage of contemporary financial apps has boosted competition in the financial sector. Electronic finance is one of the most crucial tools for maintaining efficient internal control over financial reporting (Chatterjee, 2020).

Rizvi, H. S., Khan, B., & Khan, S. (2020) conducted this study to evaluate the existing state of E-Banking operations in Regional Rural Banks (RRBs) and to highlight the necessity of effective adoption of E-Banking in RRBs as it could contribute to transformation in Rural Credit. Out of the top 10, 5 RRBs whose data was publicly accessible were chosen for this analysis. In order to analyse the statistics of e-banking indicators over the time period of 2010–11 to 2018–19, the study utilised a content analysis methodology. The study also sought to pinpoint any technologically related limitations in rural financing. The information was gathered from the RRBs' annual reports.

Table-3 Summary of Literature Review -2020

Title	Year	Author	Journal/Vol	Key Findings
Statistical and bibliometric analysis of financial innovation.	2020	Chen, T. H., & Peng, J. L.	Library Hi Tech, 38(2), 308-319.	Demonstrates how Fintech makes banking credit facilities easier in Chinese banks.
Observations and specific review: The relation between technology adoption and credit disbursal is studied**.**				

Financial sector policy response to COVID-19 in emerging markets and developing economies.	2021	Feyen et al.	Journal of Banking & Finance, 133, 106184.	Using various channels, such as all-day hours, remote financial facilities, regular branches, telebanking, Internet, ATM, and personal computers, can help banks re-design their operations to achieve more profitability
Observations and specific review: Banks can use various ITC channels to increase profitability**.** Comparative study among banks is not covered				
Measuring gap in expected and perceived quality of ICT enabled customer services: A systematic study of top ten retailers of India.	2020	Nigam and Sameer Sharma	International Journal of Applied Systemic Studies, 9(2), 159-184.	The research finds banks engage in various activities in addition to updating technology. For different processes, including issuing cheque-books, mailing account statements, debit/credit card statements, setting up online accounts, designing new products, and so on, centralized processing is done at the corporate level.
Observations and specific review : Banks use centralized processing for a variety of activities with ICT adoption.				
Risk-adjusted efficiency and bank size in a developing economy: an analysis of Vietnamese banks.	2020	Le and Ngo	Journal of Economic Studies.	Contend that the size of the bank has a sizable moderating effect on the profitability of the bank.
Observations and specific review: This study is focused on understanding size of Bank and Banks Profitability				

The Effect of Bank Size on Financial Performance: A Case Study on Kuwaiti Banks	2020	AlAli and AlKulaib	Journal of Insurance and Financial Management	Information and communication technology (ICT) includes software, hardware, networks, media collection, storage, processing, and presentation. The usage of contemporary financial apps has boosted competition in the financial sector
Observations and specific review: ICT has increased competition in the financial sector.				
E-Banking in India: Exploring the evidences from selected regional rural banks.	2020	Rizvi, H. S., Khan, B., & Khan, S.	Indian Journal of Economics and Development, 16(3), 397-403.	The study also sought to pinpoint any technologically related limitations in rural financing. The information was gathered from the RRBs' annual reports
Observations and specific review : RRBs' annual reports identified technological limitations in rural financing.				

Source: Author's own after literature Review

Shevrin, (2019) It is possible to discover various conclusions regarding the relationship between financial technology and profitability since big and petite banks differ in their operations and investments in economic knowledge.

The Fintech system's significant role in helping businesses reduce expenses and, as a result, boost profitability was proved by Yang and Zhang (2019). Moreover, Sapci and Miles (2019) assert that larger banks experience more excellent scale effects than smaller ones and demonstrate that bank size significantly impacts cost-effectiveness and returns on investment in the US banking sector.

According to Alshubiri et al. (2019), the ICT revolution has led many nations to contemplate technological advancement. It has made electronic finance a crucial component of all economic and financial sectors with a noticeable impact on productivity by attracting international investment. Alshubiri et al. (2019) also reported that a significant increase in fixed broadband leads to financial growth. According to Tunay, Yüksel, and Tunay (2019), electronic banking has

become a standard business practice practically adopted by banks, especially in the previous few years. Banks invest in this region to attract clients to endure such an extreme environment. They suggested that due to the increased efficiency of banking operations, investing in technology components has a significant impact on the financial routine of banks.

Sepehrdoust and Ghorbanseresht (2019) e- bank services, bank performance, and cost metrics, including ROE, the price to entire profits ratio, non-interest earnings, and operating cost expenditure to whole belongings percentage, have to be associated with one another. It was observed that electronic banking technologies are used to increase profitability, and banks are investing in new technologies to boost their productivity, the value of their services, and financial performance. Hence, banks can raise their investments in technological advancement to have better financial performance.

Satinder Singh and Ajaydeep Singh Brar (2019), the banking sector has seen significant changes during the past few decades. Today, the Indian financial system is regarded as a highly developed and well-regulated financial system on a global scale. The banking industry is more robust and better equipped to handle today's competition's challenges. With improved openness and transparency, the Indian banking industry has gotten closer to best practices in accounting, corporate governance, and risk management. Prudential guidelines that are widely accepted have been followed. This paper examines the recent changes in the Indian banking industry. The various potentials for the banking industry have also been discussed. Since IT plays a significant role in banking, the paper also looks at IT in that sector. Additionally, the potential outcomes of the banking industry were highlighted.

Koroleva, E. V., & Kudryavtseva, T. (2019) analyzed the utilisation of information technologies has given rise to the idea of the "digital economy," which is built on the application of cutting-edge developments. Every sphere of the economy is undergoing digital revolution, including the banking industry. One of the industries that introduces and uses the most recent developments in information and communication technology today is banking. Despite the growing importance of digitalization, surprisingly little is known about the factors that affect the performance of digital banks. By analysing the relationship between internal factors and bank performance in Russia, this research aims to close this gap. On the dataset of 16 digital banks, we employ regression models. Return on assets is a 2018 metric used to assess the performance of digital banks. The findings

demonstrate that digital banks function better when they have more customers and digital transactions. With regards to the percentage of loans and deposits made through remote banking, our findings are still not very conclusive. These findings suggest that a digital bank's internal elements, which have been established, are crucial to its success.

Kwateng, K. O., Agyei, J., & Amanor, K. (2019) stated that the incorporation of information and communication technologies into contemporary financial services has been actively pursued by banking organisations. Unfortunately, there hasn't been any actual evidence to back up the project's value. This study uses data envelopment analysis to look for causal relationships between the effectiveness of information technology (IT) applications and bank performance. The study uses the DEA method to assess the cost and IT effectiveness at the bank level. The causal relationship between the variables was then investigated using the Granger causality tests of the Vector Error Correction Model together with the forecast error variance decomposition and impulse response functions. Based on the data, the bank had an average cost efficiency level of 99.1% during the sampling time. Also, the years 2005, 2006, and 2014 were those in which the bank attained the highest levels of cost effectiveness. The result was an inefficiency score range of 0 to 2.9%, with the 2016 fiscal year having the worst cost performance. The study also discovered correlations between IT efficiency and cost performance in the short- and long-terms. However, for the short term, more specifically the first period, by the medium to long term period, the majority of improvement to overall IT performance originates from the bank's cost performance. Management should be aware that any improvement to IT applications may significantly contribute to overall IT performance.

Appiahene, P., Missah, Y. M., & Najim, U. (2019) mentioned that many firms are investing heavily in information technology (IT) as a result of its debut. IT is viewed as a tool for these firms to gain a competitive advantage. Organizations' growing reliance on IT has sparked a discussion over how to determine how it will affect how well those organisations perform. The lack of reliable quantitative indicators has often been blamed for the findings of earlier studies on IT and business performance. In comparison to parametric approaches, non-parametric models like data envelopment analysis (DEA) have been proposed as a suitable qualitative indicator of IT influence on organisational performance. In the present study, 444 bank branches in Ghana were subjected to a two-stage DEA model. The robust DEA package of the R programming language was used to

calculate the efficiency. The findings revealed that IT had a substantial impact on banks' overall performance because many of them (78.82%) were effective across the board, despite having subpar efficiency in deposit and investment management. In conclusion, additional research can use DEA and machine learning techniques to examine how IT affects business success.

Table-4 Summary of Literature Review -2019

Title	Year	Author	Journal/Vol	Key Findings
Bank size, returns to scale, and cost efficiency,	2019	Sapci and Miles	Journal of Economics and Business, 105(C), 105842.	Assert that larger banks experience more excellent scale effects than smaller ones and demonstrate that bank size significantly impacts cost-effectiveness and returns on investment in the US banking sector.
Observations and specific review : Larger banks have better cost-effectiveness and returns on investment.				
The impact of ICT on financial development: Empirical evidence from the Gulf Cooperation Council countries.	2019	Alshubiri et al.	International Journal of engineering business management, 11, 1847979019870670.	ICT revolution has led many nations to contemplate technological advancement. It has made electronic finance a crucial component of all economic and financial sectors with a noticeable impact on productivity by attracting international investment.
Observations and specific review: ICT revolution has enabled electronic finance, attracting international investment				
The effects of technology on bank performance in advanced and emerging economies: an empirical analysis.	2019	Tunay, N., Yüksel, S., & Tunay, K. B.	IGI Global, In *Handbook of research on managerial thinking in global business economics* (pp. 263-280).	Electronic banking has become a standard business practice practically adopted by banks, especially in the previous few years. Banks invest in this specific region to attract specific HNI clients to endure such an extreme environment.
Observations and specific review: Banks invest in the specific region to attract HNI clients**.**				

Impact of information and communication technology and financial development on economic growth of OPEC developing economies.	2019	Sepehrdoust and Ghorbanseresht	Kasetsart Journal of Social Sciences, 40(3), 546-551.	It was observed that electronic banking technologies are used to increase profitability, and banks are investing in new technologies to boost their productivity, the value of their services, and financial performance.
Information Technology in Indian Banking Sector: Some Recent Developments	2019	Satinder Singh and Ajaydeep Singh Brar	International Conference on Recent innovations in Sciences, Management, Education and Technology (Vol. 4, No. 7, pp. 529-535).	The various potentials for the banking industry have also been discussed. Since IT plays a significant role in banking, the paper also looks at IT in that sector.
Observations and specific review: IT plays an important role in banking. However detailed investigation on bank performance is not covered**.**				
Factors influencing digital bank performance.	2019	Koroleva, E. V., & Kudryavtseva, T.	In Digital Science Springer International Publishing.	Despite the growing importance of digitalization, surprisingly little is known about the factors that affect the performance of digital banks.
Observations and specific review : Factors influencing digital bank performance remain unknown.				
Examining the efficiency of IT applications and bank performance	2019	Kwateng, K. O., Agyei, J., & Amanor, K	Industrial Management & Data Systems	This study uses data envelopment analysis to look for causal relationships between the effectiveness of information technology (IT) applications and bank performance. The study uses the DEA method to assess the cost and IT effectiveness at the bank level.
Observations and specific review : Data envelopment analysis and DEA to assess cost and IT effectiveness.				

Evaluation of information technology impact on bank's performance: The Ghanaian experience.	2019	Appiahene, P., Missah, Y. M., & Najim, U	International Journal of Engineering Business Management, 11, 1847979019835337.	The lack of reliable quantitative indicators has often been blamed for the findings of earlier studies on IT and business performance. In comparison to parametric approaches, non-parametric models like data envelopment analysis (DEA) have been proposed as a suitable qualitative indicator of IT influence on organizational performance.
Observations and specific review : Non-parametric models like DEA are proposed to measure IT influence on organizational performance**.**				

Source: Author's own after literature Review

Fazil (2018) found a link between the adoption of electronic applications and the financial growth of banks. ICT enhances the banks' operational flexibility and encourages financial risk disclosure to guarantee safe operations. Banks generate new services or present existing products in innovative and advanced forms (Dinçer et al., 2018).

Zhang et al. (2018) highlighted that providing technological-based products and services to customers is a significant advantage to banks. Sardana, V., and Singhania, S. (2018) examine the hypothetical writing on the development of digital and information technologies in the Indian banking industry. The phenomenal results in the digital world have entirely changed the bank's work. The introduction of the digital business age has been upending the commercial landscape and bringing about the novel and distinctive business practices. Digital banking is just one of the modern outcomes of this. With a wide range of supplies like ATMs, debit card deposits, mobile payments, and others, digital banking technology has advanced over time. There is considerable potential for opportunities to be created locally and globally, leveraging the digital age's infrastructure. The banking industry is facing a rise in competitiveness and many other problems, forcing banks to adopt new digital business models that offer them distinctive sources of value. This essay looks at the impact of digital technology on Indian banking, including its size and direction.

Aswin and Bala Nageshwara Rao (2018) investigated the relationship between the use of new technology and the customers in the banking sector. Findings show that the majority of bank customers utilize ATMs. Therefore, banks must be made aware of e-banking services. The package also includes a few documents that focus on the advancement of financial technology. Ozili (2018) talked about issues related to digital economics that have not received much consideration in the literature. Even though digital business and economic inclusion have many uses for consumers of monetary services, digital money providers, government, and the financial system. However, there are some problems that, if committed, could look up how good digital investment functions for businesses, government, and people. The article's talk of digital investment defiance applies to continuing discussions and national-level consideration targeting boosting monetary enclosure during digital finance in developing and emerging economies.

Table-5 Summary of Literature Review- 2018-19

Title	Year	Author	Journal/Vol	Key Findings
Digital Transformation in commercial banks? —An analysis based on big data.	2019	Yang and Zhang	Research in International business and finance, 138, 1022.	Highlighted that providing technological-based products and services to customers is a significant advantage to banks.
Observations and specific review : Banks benefit from providing technological-based products and services to customers.				
Digital technology in the realm of banking: A review of literature.	2018	Sardana, V., and Singhania, S.	International Journal of Research in Finance and Management, 1(2), 28-32.	The phenomenal results in the digital world have entirely changed the bank's work. The introduction of the digital business age has been upending the commercial landscape and bringing about the novel and distinctive business practices.
Observations and specific review : Digital business age has revolutionized banking by introducing novel practices.				

A Study on Role of Technology in Banking Sector	2018	Aswin Raj. T | Mr. Bala Nageshwara Rao	International Journal of Trend in Scientific Research and Development	Findings show that the majority of bank customers utilize ATMs. Therefore, banks must be made aware of e-banking services.
Observations and specific review : Banks must increase awareness of e-banking services to attract customers				

Source: Author's own after literature Review

According to Ersin and Duran (2017), like most financial sectors, the banking industry also finds it challenging to offer new products and services. It is difficult to provide customers with the same products in new and innovative versions. Thus, technology-based electronic applications like point of sale networks, mobile banking, internet banking, telephone banking, and (ATMs) offer considerable advantages when offering existing products to customers. Banks have shifted a significant percentage of their products and services to raise demand and profitability. This trend has anticipated persisting in the future (Tunay and Yüksel, 2017).

Ersinand Eti (2017) stated that customers these days have 24x7 access to almost every banking product and financial service at less cost. By engaging and encouraging customers to use electronic banking services, their visits to the branches can be minimized or made more feasible. The results of applied research on banks in different countries projected that banks could function better by using electronic banking services. However, it is also observed that the expected performance level was not achieved in developing nations. They cannot spend enough on technological infrastructure and the traditional approach of the customers in terms of banking services (Yüksel et al., 2017; Long et al., 2017).

Babu and Rajini (2017) Research covered the impact of technology on banking operations. Comparisons of banks in various regions were made to investigate user interactions with Internet banking, ATMs, mobile banking, telephone banking, and other facilities, along with difficulties in using the bank's technology. The function of a nation's central bank in its economic development is crucial. Trade and industry are said to run on finance. India is now among the top 5 economies in the world in terms of fastest economic growth thanks to the development of banks in the nation and development through banks in the country. The world is watching India as a potential dominant participant in global markets. Today's banks have an impact on every citizen's life. Everywhere

the bank is present, he must keep his money there at midnight to keep his valuables safe, purchase/sell securities on the capital market, and borrow money for trade, tutoring, home, or consumer goods. He must also book rail and air travel tickets and pay insurance premiums, telephone bills, and electricity bills. Essentially, there are two categories of banks: commercial banks and cooperative banks. The two sectors of banks, which have a nationwide network and offer services, are further separated. Both the private and public banks. While private banks are privately owned, public sector banks are entirely under the control of the government (i.e., the central government). The present study was done with the stark distinction between private and public banks in Twin Cities in mind while considering the usage of technology in banking services. Banking in India was entirely developed in terms of supply, product selection, and reach, yet reaching the impoverished and rural areas of the country is still difficult. The SBI has increased its branch network, and the government has improved its capacity to address this. NBARD provided this Microfinance.

Vashisht (2017) investigates the effect of IT on the level of service the banking industry offers. The planned study aims to recognize the patterns of bank adoption of electronic media, the drivers and barriers to bank adoption, the IT-affected dimensions of the quality of e-banking services, and consumer adoption of these services. The study also emphasized how IT directly influences the aspects that determine service quality and explored the enabling and impediments to the successful adoption and growth of IT systems in banks.

Other sectors may suffer as a result of the banking sector's failure. One of the critical duties of Indian banks is the management of non-performing assets (NPA). The researcher concluded that the government and bankers must make significant efforts to reduce the NPA; otherwise, it will severely harm their bank profits and be bad for emerging nations (Thangam, S.Ganapathy, 2017). Furthermore, large banks invest more money in technology, as Filip et al. (2017) claimed. Moreover, the effects of three different IT platforms, including the Internet used in the home, business, and retail, on the bank richness for three thousand six hundred ninety-two institutions across twenty-eight different European countries in 2013 was inspected by Campanella et al. (2017). They notice a strong correlation between all forms of IT investment and the financial success of European banks.

Rega (2017) explores how the number of physical branches and digital assets impacts bank productivity in a sample of 38 European banks from 2013 to 2015. The writer provides evidence of a beneficial association between profitability and digital investment.

Table 6 - Summary of Literature Review - 2017

Title	Year	Author	Journal/Vol	Key Findings
Measuring the Waste-Conscious and Saving Habits of the Youth in Turkey:The Sample of Istanbul Medipol University.	2017	Ersin and Eti	International Journal of Islamic Economics and FinanceStudies, 3(3), 41–49	By engaging and encouraging customers to use electronic banking services, their visits to the branches can be minimized or made more feasible. The results of applied research on banks in different countries projected that banks could function better by using electronic banking services.
Observations and Specific review : Engaging customers to use electronic banking services reduces visits to branches.				
Comparative study between private sector and public sector banks in the adoption of technology in banking Services-Twin Cities.	2017	Chandan Babu and Rajini	ISOR Journal of Business Management, 64â, 69, 17037-2017.	Comparisons of banks in various regions were made to investigate user interactions with Internet banking, ATMs, mobile banking, telephone banking, and other facilities, along with difficulties in using the bank's technology. The function of a nation's central bank in its economic development is crucial.
Observations and specific review : Investigations of user interactions with Internet banking, ATMs, mobile banking, telephone banking, and other facilities, as well as challenges using the bank's technology, were conducted using comparisons of banks in various countries.				

Impact of Information and Communication Technology on Service Quality of Banking Sector: A Comparative Study of Private and Public Sector Banks in Gwalior and Chambal Region.	2017	Vashisht .A	Social Sciences, 7(01).	The planned study aims to recognize the patterns of bank adoption of electronic media, the drivers and barriers to bank adoption, the IT-affected dimensions of the quality of e-banking services, and consumer adoption of these services.
Observations and specific review : Bank adoption of e-banking services, drivers, and consumer adoption.				
The bank of the future, the future of banking-An empirical analysis of European banks.	2017	Rega	SSRN Electronic Journal	Explores how the number of physical branches and digital assets impacts bank productivity in a sample of 38 European banks from 2013 to 2015
Observations and specific review : Physical branches and digital assets affect bank productivity.				

Source: Author's own after literature Review

Also, according to Zengin and Yüksel (2016), electronic banking can be a cost advantage for the bank. Banks can improve profitability, and the risks can be significantly decreased compared to conventional banking products. Sharma (2016) the Indian internet banking environment was examined. Finally, the banking industry has convinced them to change their "conventional banks" in that region as the market for sale people shifts to one for buyers. This change has made it possible to satisfy every consumer's needs and expectations better. Online banks have potential due to growing client internet knowledge, integrating banking services into e-commerce, expanding internet reach, and worldwide financial operations.

Dhiraj Sharma (2016) has found that electronic banking has affected Indian bankers. Regulation and technological protocols make banking an enjoyable and safe process. The sooner technology is incorporated into their business plan as a whole, though, the sooner they will be able to regain their lost market share. However, 65 percent of the public sector banking industry still has a crucial role.

Again Siddik, Sun, Kabiraj, and Shanmugan (2016) looked at the possessions of e-banking on bank routines in their empirical investigations. Because e-banking is becoming more popular in Bangladesh; the outcome of e-banking on bank routine has not yet been determined; their study will fill this gap. Scientific research on the development of e-banking on the performance of banks in Bangladesh from 2003 to 2013 analyzed data from 13 banks to measure Return on possessions, Return on fairness, and Net Interest boundary. With a two-year lag, e-banking positively impacts banks' Return on Equity.

In contrast, according to the least square methodology, a negative impact was identified in the first year of acceptance. The experiential research finding was more critical for developing nations like Bangladesh since it would draw policymakers' and the bank's management's attention to the need for better e-banking regulations. This research added to the empirical literature by correlating the results of earlier studies.

Table-7 Summary of Literature Review -2016

Title	Year	Author	Journal/Vol	Key Findings
Nexus between financial inclusion and economic growth: Evidence from the emerging Indian economy.	2016	Sharma , Dhiraj	Journal of financial economic policy, 8(1), 13-36.	The sooner technology is incorporated into their business plan as a whole, though, the sooner they will be able to regain their lost market share.
Observations and specific review : Technology can help businesses regain lost market share.				
Impacts of e-banking on performance of banks in a developing economy: empirical evidence from Bangladesh.	2016	Siddik, Sun, Kabiraj, and Shanmugan	Journal of Business Economics and Management, 17(6), 1066-1080.	Because e-banking is becoming more popular in Bangladesh; the outcome of e-banking on bank routine has not yet been determined; their study will fill this gap.
Observations and specific review : - E banking is becoming popular in Bangladesh, study determine impact of ICT on Bank performance **.**				

Source: Author's own after literature Review

Ashok Kumar Chandra (2015) has conducted a comparison analysis of the Korba electronic banking services between banks in the public and private sectors. E-banking is the future of banking; internet banking is gaining popularity with customers and strengthens the bonds between bankers and customers. Adequate security measures and stringent cyber rules are also required in India because e-banking is growing more widespread and banking uses cutting-edge technology, making them more vulnerable to cybercrimes and having a higher potential for reputational damage.

Tunay et al. (2015), in their research, mentioned that the banking industry could promote everyday items to customers in a variety of new and innovative ways. ATMs are widely distributed across the globe; users can access their bank accounts wherever they choose, increasing the benefits of utilizing an ATM. The importance of a bank's network to a client will be influenced partly by the bank's final system size, which would mean that the significance of an ATM network increases with the number of available ATMs increases in different locations. ATMs play a vital role since banks can increase consumer satisfaction by optimizing operations through ATMs. Customers prefer those banks that provide most of their banking operations, such as cash withdrawals, bill payments, and money transfers, via ATMs or E-banking systems. Therefore, it is considerably easier to meet consumers by providing banking activities via E-banking services.

According to Kirmani et al. (2015), the IT industry enables some industries to keep a competitive frame in the global market through innovative services. ICT refers explicitly to various IT techniques for handling and managing electronic data. The emergence of ICT businesses is now able to interact and carry out their operations more effectively through digital networks. This has also made tremendous progress in resolving challenges with distance and time constraints, which has increased the effectiveness of financial and economical company operations. ICT is crucial because it helps commercial banks and microfinance institutions, which provide financial intermediation services at a lower cost, increase economic activity.

Nawafleh (2015), in his research, examined the role of IT on the bank profitability level. The use of electronic-banking tools to promote different financial products has expanded significantly. It has benefited the number and quality of banking services and competition among banks. They found that demographic features affect the usage of E-banking, and the profitable banks' capital also considerably affects the growth abilities.

Table -8 Summary of Literature Review 2015

Title	Year	Author	Journal/Vol	Key Findings
Interaction between Internet banking and bank performance: The case of Europe.	2015	Tunay et al.	Procedia-Social and Behavioral Sciences, 195, 363-368.	ATMs are widely distributed across the globe; users can access their bank accounts wherever they choose, increasing the benefits of utilizing an ATM. The importance of a bank's network to a client will be influenced partly by the bank's final system size, which would mean that the significance of an ATM. network increases with the number of available ATMs increases in different locations
Observations and specific review : ATMs are increasingly important as the number of available ATMs increases in different locations**.**				
Impact of ICT on effective financial management.	2015	Kirmani et al.	International Journal of Information Science and System, 4(1), 1-14.	ICT refers explicitly to various IT techniques for handling and managing electronic data. The emergence of ICT businesses is now able to interact and carry out their operations more effectively through digital networks.
Observations and specific review : ICT enables businesses to interact more effectively through digital networks.				
Nawafleh, S. A. (2015). The effect of information technology on the bank profitability imperial study of Jordanian banks.	2015	Nawafleh	International Journal of Business and Management, 10(2), 170.	The use of electronic-banking tools to promote different financial products has expanded significantly.
Observations and specific review : Electronic-banking tools are increasingly being used to promote financial products.				

Source: Author's own after literature Review

Gutu (2014) found that in a specific case of Romania, the electronic banking operations negatively influenced the banks' profitability and performance. This problem persists even in institutions with significant internet banking advertising budgets. This revealed that customers in these nations continue to desire traditional bank services offered in branches. As a result, profitability suffers, and the anticipated cost reduction of e-banking services cannot be realized. Sharma and Govindaluri (2014) investigated the variables affecting Internet banking uptake in urban India. In metropolitan India, attitudes about online banking are determined mainly by the apparent ease of use, usefulness, collective impact, social awareness, the caliber of the internet connection, and computer self-efficacy. The intention of customers to utilize online banking systems can be predicted using their attitude toward using internet banking.

Wilson et al. (2014) investigated how information technology affected bank profits. Regression results conflicted with the last hope, which showed that IT spending in the research period had no critical contact with upcoming in-use routines. The sample used for the study included a quarter of Nigeria's banks currently listed on the Stock Exchange of Nigeria. Despite using several profitability measurements, the results remained solid. This unexpected result, among other factors, is probably related to the fact that all banks now invest in information technology. The statistics come from a nation of sub-Saharan Africa where bank savings in IT is not until now at their peak. The findings indicate that IT investment is essential for banking organizations to maintain their ability to function effectively in the current competitive banking business.

The necessity to investigate the natural character of the connection amid prosperity and asset in IT in the banking sector of Nigeria served as the primary impetus for the current study. Estimation techniques were applied to determine the sign, size, and importance of the variables recognized in the representation. IT investment was considered a composite item of four main components: data connections, hardware, software, and IT services. The study's findings indicate no significant correlation between Information technology implementation and bank profitability for the sampled institutions. This is unexpected, especially in light of the financial institutions' pursuit of the most recent "state of the art" in IT implementation. The remaining article is organized as follows.

Behera, A. K., Nayak, N. C., & Das, H. C. (2014) analysed the relationship between the state bank group's (a bank in Bhubaneswar, Odisha, India) use of information technology (IT), CRM, and performance. The majority of Indian banks has significant branch networks and is focused on

providing full banking products. 2012 saw the collecting of empirical data, which was then combined with theoretical data for analysis. The non-probability sampling method was used to choose a sample of 18 branches. Using a survey method, opinions from branch managers, employees, and clients were gathered. In accordance with the bank's grading scale, each of the 18 branches was given an equal grade. Three distinct kinds of surveys were created for branch managers, branch employees, and branch customers. The 7-point Likert scale questionnaires have both structured and semi-structured items. Data analysis was carried out using bivariate correlation and linear regression. The Pearson correlation coefficient was used to assess the linear relationship between the variables. According to the data, IT use and the financial and quality performance of bank branches are positively correlated. It was discovered that bank performance was correlated with elements including employee attitudes toward using IT, bank staff IT literacy levels, and the extent and complexity of the IT applications.

Table -9 Summary of Literature Review 2014

Title	Year	Author	Key Findings
Impact of technological innovation on delivery of banking services in Nigeria.	2014	Wilson et al.	The statistics come from a nation of sub-Saharan Africa where bank savings in IT is not until now at their peak. The findings indicate that IT investment is essential for banking organizations to maintain their ability to function effectively in the current competitive banking business.
Observations and specific review : IT investment is essential for banking organizations to remain competitive.			
Performance of Banking Sectors Due to Adoption of Information Technology (IT).	2014	Behera, A. K., Nayak, N. C., & Das, H. C.	Using a survey method, opinions from branch managers, employees, and clients were gathered. In accordance with the bank's grading scale, each of the 18 branches was given an equal grade. Three distinct kinds of surveys were created for branch managers, branch employees, and branch customer.
Observations and specific review: Surveys were used to grade 18 branches based on grading scale. Accordingly the performances is being reviewed on ICT adoption at different level.			

Source: Author's own after literature Review

Motwani Matharu and Haryani (2013) stated that the banks in India are being forced to be innovative and creative by the fierce rivalry in the banking industry. The banking industry has implemented mobile banking to provide financial services at the convenience and comfort of its consumers to meet the constantly rising expectations and demands of the consumer market. In

India, mobile banking is still in its infancy. Many service providers are simultaneously investing heavily to take advantage of the commercial potential provided by wireless technology.

In the study by Hosein (2013), it was mentioned that both developed and developing economies are consistently using technology. E-banking services serve their customers in a better way as well as increase the bank's monetary routine. Still, despite having high infrastructure costs, emerging nations do not have enough users for online banking. According to the study by Abaenewe et al. (2013) on Nigeria, Hassan et al. (2013), Oyewole et al. (2013), Okiro and Ndungu (2013), and Gakure and Ngumi (2013) on Kenya, it could be summed up that electronic banking activity even in such developing nations with a low rate of developing countries they are proactively working to increase the profitability in their banks.

E-banking will probably change the fundamentals of banking in India in a big way, both in terms of opportunities and hazards. The RBI, the nation's central bank, and many government-led initiatives have helped the growth of electronic-banking in India. The notion of the scope of e-banking is still under development (N. Jamaluddin, 2013).

Mittal, and Gupta, (2013). Since the acclimatization of Indian banks, this business has grown steadily while meeting the demands of different societal groups. The banking business has been growing very fast by employing IT as a stage and trying to catch new targets. In this study, an effort has been made to investigate numerous cutting-edge tools recently released by banks. Romdhane, S. B. (2013). In this study, the effectiveness of information technology (IT) investments in a sample of 15 Tunisian banks from 1998 to 2009 is examined. On panel data, we apply the traditional Stochastic Frontier Approach to provide cost-efficiency estimations. The effectiveness of these approaches to efficiency evaluation is tested by comparing the findings from the Data Envelopment Analysis (DEA) method with the Stochastic Frontier Analysis (SFA) method. The empirical results imply a favourable effect of IT investments on Tunisian banks' performance. The research of the internal factors affecting banks' efficiency levels reveals that the size and management ability of Tunisian banks have a positive and significant impact on their cost efficiency, while the proportion of non-performing loans is a source of inefficiency. The "Productivity Paradox" may not apply to all IT investments, according to research measuring the effects of several categories of IT investments (hardware, software, and IT services) on banks' cost effectiveness.

Arora, H., & Arora, P. (2013). A "performance-paradox" may result from investments in information technology (IT) made in the intention of generating increased profits and returns but which fail to deliver predicted "gains" in the needed time frame. This study looks into whether the massive amounts of money Indian public sector banks (PSBs) have spent on IT over the last ten years have had an impact on bank performance. As indicators of bank performance, four metrics are used: operating profits (OP), profits per employee (PPE), business per employee (BPE), and return on assets (ROA). The parameters of panel data made up of 27 PSBs are estimated from 2004 to 2009 using the first differences regression, two-stage GLS, and GMM methods. We discovered that investing in IT has significantly benefited OP and PPE. We view this outcome as proof of improved profits as well as profitability brought about by IT advancements in bank operations. Results regarding the impact on BPE are not conclusive. However, the analysis was unable to uncover any proof of a significant connection between IT spending and ROA. Thus, this study finds evidence that significant IT spending by Indian PSBs has not been a waste and has really increased revenues.

Table -10 Summary of Literature Review 2013

Title	Year	Author	Journal/Vol	Key Findings
FDI and ICT effects on productivity growth.	2013	Hosein andYazdan,	Procedia-Social and Behavioral Sciences, 93, 1710-1715.	E-banking services serve their customers in a better way as well as increase the bank's monetary routine. Still, despite having high infrastructure costs, emerging nations do not have enough users for online banking.
Observations and specific review: E-banking services serve customers, but not enough users in emerging nations.				
Emerging role of information technology in banking sector's development of India.	2013	Mittal, and Gupta,	ACADEMICIA: An International Multidisciplinary Research Journal, 3(9), 11-17.	The banking business has been growing very fast by employing IT as a stage and trying to catch new targets. In this study, an effort has been made to investigate numerous cutting-edge tools recently released by banks.

Observations and specific review : Banks are using IT to reach new targets.				
Effect of investments in information technology on bank performance: empirical evidence from Indian public sector banks.	2013	Arora, H., & Arora, P.	International Journal of Business Information Systems, 13(4), 400-417.	The analysis was unable to uncover any proof of a significant connection between IT spending and ROA. Thus, this study finds evidence that significant IT spending by Indian PSBs has not been a waste and has really increased revenues.
Observations and specific review : IT spending by Indian PSBs has increased revenues in terms of return on assets **.**				
Emerging role of information technology in banking sector's development of India.	2013	Mittal, and Gupta,	ACADEMICIA: An International Multidisciplinary Research Journal, 3(9), 11-17.	Investigated the variables affecting customer satisfaction in Indian banks and how they affected it. 400 customers of 13 retail banks in India were given a survey.
Observations and specific review : Variables affect customer satisfaction in Indian banks are studied extensively				

Source: Author's own after literature Review

Multiple foreign banks have relocated to India due to liberalization and information technology, expanding the banking sector's access to new customers, innovative products, and effective delivery methods. India's banking industry is essential and crucial to the economy's growth. Technology utilization has led to increases in efficiency, productivity, and penetration. It has helped make small value transactions viable in addition to increasing cost-effectiveness. Additionally, it expands options, develops new markets, and boosts effectiveness and productivity. In India, financial markets have been observed to have changed to buyers' needs. Indian commercial banks are evolving into one-stop supermarkets. With the advent of value-added and personalized products, the emphasis is changing from mass banking to class banking. With technology, banks can imitate a branch in the lobby of a commercial building without having to staff manual tasks with employees. The usage of tele-banking, Automatic teller machines, net banking, web banking, and online banking and trading has made it possible for the branches to operate on a 24 x 7 basis. These technologically advanced distribution channels help businesses

contact the most significant number of clients cost-effectively and effectively. The appeal of these financial innovations is that they provide a win-win situation for both the bank and the customer. Growth and progress are multiplied when technology is used effectively. In the coming years, information technology promises to alter the speed of banking. Internet and mobile banking will soon be standard in the banking industry. Despite being advanced and complicated, IT systems are energy consumers (Sreelatha and Chandrashekar 2012).

Within this framework, Aduda and Kingoo (2012) studied the force of online banking actions on bank industry performance in countries of Africa with a lesser progress rate. Sarkar (2012) examined how online money dealing and internet banking apps affect bank routine in industrialized nations and found that these applications, which often call for sophisticated technology, greatly impact bank profitability. The ICT sector helps bank branches run more efficiently by gathering data more effectively, which is used to assess applicants' creditworthiness more quickly and simplify deposits. Information technology and communication networks such as mobile financial services therefore effectively increase access to bank services. To ensure the efficiency of all economic sectors, electronic financial systems are economic systems that need financial resources (Abubakar and Tasmin, 2012).

Gupta and Dev (2012) investigated the variables affecting customer satisfaction in Indian banks and how they affected it. 400 customers of 13 retail banks in India were given a survey. Customer satisfaction at banks was said to be influenced by five variables: service quality, ambiance, client participation, accessibility, and financials. According to (Brush et al., 2012), higher fees demand more highly educated consumers than regular bank customers for internet banking services. The viability of such services for the banks would also be low if the ratio of bank clients via the Internet and additional e- banking services can't be amplified. Additionally, studies on clients who favor online banking indicate that using such facilities has enhanced client capabilities. Although, it is as well as accurate that client use of e- banking facilities impacts banks' expenses and revenue. If all banks in the industry offer comparable electronic-based services without considering their mutual sales powers, they cannot all raise their profitability. On the other hand, when banks offer supplementary services in this sector, revenues rise and operating costs decline.

Frank and Oluwafemi (2012) claimed that Information Technology significantly differed between banks performing well in the middle-1980s and those that were less money-making. Research has

demonstrated that utilizing information technology (IT) effectively and efficiently can help differentiate between business equivalents. Therefore, utilizing IT and its benefits is necessary for survival, global relevance, market share, and sustained development. A list of IT devices used in the banking sector includes ATMs, teller printers, smart cards, and Magnetic Ink. Net banking, email, telephone, and online banking are more IT services. Internetworking makes up a larger portion of what banks could be said to be used for IT. Internet, extranet, intranet, and interbank networking are all included in this internetworking. Branch offices have intranets so that only the branch where the transaction took place could access it.

Isizoh et al. (2012) quoted that many Nigerian government organizations now use websites to tell the public about their operations. Nigerians may now use the web and the Internet to find any necessary knowledge. Websites publish vacant situations, business contracts, and legal actions for public consumption. This has significantly increased productivity, making Nigeria's economy strong. Nigerians can now express their opinions to the administration and ask inquiries regarding general topics. He added that it is impossible to undercut the role of ICT in the fight against crime and terrorism. The Nigerian state of Bayelsa signed an MOU with the company of China Huawei in 2012 to install CCTV throughout the state's capital. This will make it easier to maintain a watch on the state capital. Additionally, this will significantly lower crime in the state. Vehicle theft was eliminated through car trackers, demobilizes, timers, etc. Global Positioning Systems (GPS) and remote sensing have made it possible to locate particular locations on the earth's surface, track large trucks, prevent terrorism, and ensure the safe delivery of commodities and property. These are just a few advantages of ICT in the expansion and development of Nigeria's economy. Despite IT's disadvantages, there have been significant difficulties in applying it to the banking sector.

Gupta, B. (2012). One of the main issues facing Indian banks is non-performing assets; since financial deregulation, the Indian banking industry has undergone radical upheaval. NPAs are a gauge of a bank's performance. Increasing NPA at a shocking rate is a danger to the banking field, conveying troubling signs about the feasibility of the exaggerated banks. An elevated level of NPAs indicates the possibility of a big count of credit defaulters that affect the net income of banks and profitability and erode the worth of the benefit. The hitch of NPAs is distressing the banks, also the financial system completely. Many prudential and provisioning standards are being adopted to improve the banking system's financial stability, forcing banks to increase effectiveness

and reduce NPAs. To analyze the operational performance of the State Bank of India and links and other Public Banks, an attempt is being made to comprehend the notion of NPAs, their extent, and the primary drivers of increasing NPA.

Dubois et al. (2011) mentioned that banks that rely heavily on electronic financial services are "innovative." Their costs are lower than the segment average, and their distribution networks are more comprehensive than the sector. The utilization of a digital framework by banks is crucial in this situation. Profitability increases as the infrastructure are improved, and the cost per transaction decreases. However, it is said that elements like the customer's degree of education and the website's functionality play a part in how well internet banking services work.

Al-Samadi and Al-Wabal (2011) indicated that the installation process for internet banking and other e- banking operations is pretty quick. Developing economies like India, Pakistan, Jordan, and Romania have also adopted electronic banking procedures, which have enabled their banks in lessen operation costs and to perform better in terms of profitability, but for Jordan's banks' performance, the effect was negative because customers still depend on traditional distribution channels (Al-Samadi and Al-Wabal, 2011; Khrawish and Al-Sa'di, 2011; Sumra et al., 2011). These researches have exposed that rising countries' e- banking framework problems slow down potential cost-effectiveness and amplify productivity.

Given that some branches in developing countries have insufficient Information Technology frameworks and thin ATM networking, it can't be argued that electronic banking activities have a significant blow on profitability. Ekata (2011) mentioned that in 2009, more than $107 million was spent by the 24 commercial banks in the US nation on IT and related services. As stated by Agbolade (2011), the term "information explosion," a scientific loom to information and the clarification of its fundamental properties, as well as essential changes in how the notion of information is interpreted, all resulted from the rapid creation of a mass of heterogeneous information. It was broadened to include information communication between computers and signal interaction in the realms of plants, animals, and people.

Günsel and Tükel (2011) This essay will investigate if a bank's information technology (IT) capabilities may boost its bottom line and give it a competitive edge. This report explicitly assesses IT competence, as opposed to earlier research, which focused on the consequences of IT expenditure on competitive advantage. This article examines the relationships between IT

competence and human capital support on three business performance indicators using a sample of 15 banking firms. The findings show that human capital assistance directly impacts banking organizations' performance.

Leckey (2011) used the Balanced Scorecard (BSC) framework to determine and document the extent to which Ghanaian banks' IT investments can affect their financial performance. The study uses a sizable panel dataset comprised of samples from 15 institutions drawn from the banking sector in Ghana for ten years (1998-2007). According to the survey, banks with higher "return on equity (ROE) and return on assets (ROA)" have a higher level of IT investment. Technology's role in banking amid a crisis: What effects does information technology (IT) in banking have on the stability of the financial system? Greater pre-crisis IT usage resulted in fewer non-performing loans and more lending during the global financial emergency, according to data on US banks' IT infrastructure and their executives' backgrounds. The use of IT is directly linked to improved bank resilience, according to empirical research, including estimates using instrumental variables that take advantage of historical data on technical schools' locations. An examination of loans at the loan level reveals that high-IT institutions generated mortgages more successfully, suggesting improved borrower screening. There is no proof that low-quality loans are being offloaded, that business models are different, or that monitoring is increasing.

Chitra (2010) stated that information technology in banking operations is primarily concerned with penetrating information technology in rural regions and outsourcing information technology. Customers are encouraged to use information technology more frequently when business with banks. Smaller banks need to use more strategic thinking when making information technology investments. Ho and Mallick (2010), in their study, mentioned that by using bank-level data from a panel of 68 US institutions between 1986 and 2005, the research analyses the consequences of IT investment in the banking sector. IT can boost bank performance by lowering operating costs (supply side), but it can also encourage rivalry among banks to adopt new technologies (demand side). It is challenging to determine which influence has predominated because most empirical studies have used the production function technique. This study describes the prerequisites for identifying these two effects in meta morphed model with network possessions. The adoption and spread of IT investment may reduce bank earnings, showing unfavorable network competition effects in this sector. The predicted profit equation is an equilibrium relation over the long run. In

recent years, the service sector has significantly increased information technology, primarily computers and related devices.

Jalal-Karim, and Hamdan (2010) In this essay, the effects of IT on the Jordanian bank sector from 2003 to 2007 are examined. The study looks at the extent of IT use by 15 Jordanian banks over five years and the impact on enhancing the routine of two matrix types. The first is a routine monetary matrix that includes Earnings per Share, Market Value-Added, and Return on Investment. The second is an operational performance matrix that combines Net Profit Margin, Operating Return on Assets, and Employee Profitability. By evaluating the investment in Hardware, Software, e-Banking, online Banking, ATMs, the utilize Cyber twigs, and Banking with the help of SMS service, Jordanian banks' use of IT will be evaluated. Our measures' findings showed a significant result in using Management Information Service in banks of Jordan. The relationship between information technology and bank performance often has two positive effects. First, information technology can lower banks' operating expenses (the cost advantage). For instance, banks' operations for completing routine and low-value-added activities, such as bill payment and balance inquiry procedures, are facilitated and sped up by internet technology. This technology will enable banks to focus their capital on unique, high-value transactions like private trust services and asset banking via twigs. The following positive result is that ICT could encourage client interactions within a single network (the network effect). Wali (2010) quoted The connection between Information Communication Technology and other organizational operations is comparable to that between management and social employees, in which the former develops policies and the latter carries them out. ICT is used to carry out numerous organizational tasks to put policies into effect and enforce them.

According to Ciciretti et al. (2009), online banking has a considerable constructive contact on the bank's performance and the growth of competition in the banking industry. The question of how technological advancements will boost efficiency is especially crucial because businesses outsource this operation. The activity's difficulties are complicated, so the best governance strategy must be chosen. According to numerous studies done by surveys, banks that subcontract the internet banking operation do it extra proficiently. It is also distinguished that the expansion of technology outcomes in an exchange between adaptability and effectiveness. By considering growing client needs, banks must settle in their services to match technological advancements. In

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addition, acclimating consumers to newer, more technological products takes time. The design and presentation of items become more significant in this scenario. In Nigeria, information communication technology (ICT) has altered banking, turning the formerly quiet field into a thriving business (Adeosun, Adeosun, and Adetunde, 2009).

Oghenerukeybe (2009) states that The change suggests that the commercial banks that dominate Nigeria's banking sector have kept their significant investments in ICT goods and facilities, viz. software, hardware, telephony, consultancy, guidance, and outsource. About seventy percent of the industry's total asset costs and forty-six percent of all executive Information technology expenses in Nigeria are attributed to commercial banks' IT investment (Central Bank of Nigeria, 2009). Accad (2009), as it transitions to using the net for business purposes through internet banking and ICT, the financial industry has been an interesting case study for service modernization. Product and price rivalry finally resulted from the effects of pricing transparency and consumer empowerment made possible by information technology. Due to IT, banks are becoming more customer-focused than merely profit-focused. The capability to hold procedures and services in other fields, such as government (car license registration), and improvement, is achievable through web-based banking operations (payment of fees). IT has brought banks and their consumers closer, allowing them to understand their needs better and meet them. Thanks to information technology, customers can now use their mobile phones to purchase recharge cards, confirm their current account balance, and pay bills whenever and wherever they choose. Customers can check their current account balance at any time with net banking. Time, location, and communication barriers have been removed by the appearance and adoption of IT-enabled communication systems by commercial organizations (Khan et al., 2009), resulting in a more networked and knowledge-driven economy.

Arnaboldi and Claeys (2008) have noted that internet banking strengthens banks' propensities for technical advancement. Additionally, it is indicated that technology-dependent bank services, particularly those for net banking, have decreased the operation risks faced by banks. A determined commitment is necessary for success in the capital-intensive process of acquiring and deploying information technology. They demonstrate this dedication by pointing out that a few banks have constructed their (VSAT) satellite systems to address the problems caused by Nigeria's inadequate communication framework (Agboola and Salawu 2008).

Ayankotun (2008), in their study, reported that commercial banks of Nigeria spend one hundred and fourteen million dollars annually on IT. Osabuohien (2008) showed that, while bank officials' gender has no bearing on how well they use ICT, other criteria, including age, educational background, computer proficiency, and the sort of ICT equipment they use, had a substantial impact on how heavily banks used ICT. ICT found the speed at which financial services are delivered and productivity and profitability to be favorably impacted by ICT. The fundamentals of banking, technology, and new trends are contributing significantly to the expansion of banks. One of the critical components of information technology nowadays is providing new services and introducing new banking products. All efforts would be for better utilization and trustworthiness of the banks' stakeholders (Mittal, 2008).

There are problems ahead for the banking industry related to the interaction between technology and banking. All people do banking transactions via ATMs and other electronic methods. Therefore, it is now crucial for banks to adopt new factors and employ those to further their goals (Verma, 2007). As per Alam et al. (2007), internet banking operations also have the same problem. The internet infrastructure in rising economies is relatively out-of-date, which stops banks from performing as intended. According to Malhotra and Singh (2007), the customers' expectations should be met to raise the role of electronic banking facilities in the bank's financial routine. They noted that in several developing nations, only significant banks are adopting and investing in online banking transactions are made. Banks with high deposit volumes, low branch densities, and lower fixed asset spending lean to use online banking applications. The primary factor is that they frequently want to raise their small market share.

According to Ovia (2007), banks in Nigeria have become increasingly dependent on the deployment of (IT) infrastructure to power their operations and produce better financial performance that meets and exceeds consumer expectations over the last several years. Financial institutions have been forced to switch from conventional "brick and mortar" banking to electronic platforms by customers' insatiable need for efficient services. During the procedure, they prompted an extra necessary renovation of their commerce systems and models by taking on electronic banking. Nigerian banks are making a determined effort to reduce the number of cash transactions by rapidly migrating to e-business, e-commerce, and e-banking platforms. According to statistics, the Nigerian banking sector has invested more than five hundred million dollars since 2001 in the

consumption of Information technology framework, together with software, hardware, and problem solutions, significantly more than the country's leading foreign exchange generator, the oil and gas sector (Ovia, 2007).

Malhotra, and Singh (2007), The current investigative research aims at identifying the variables influencing a bank's choice to implement online banking in India. It specifically seeks to investigate the connection between the bank's acceptance choice and unlike bank and market factors. The findings indicate a higher likelihood that bigger banks will adopt this new technology, the latest banks, private possession, elevated operating costs for permanent controls, privileged deposits, and banks with fewer branches. Internet banking technology is also seen as a way for banks with smaller marketplace shares to grow their market share by luring as much as clients to this brand-new distribution channel. Other institutions using Internet banking also increase the likelihood that a choice to adopt will be taken.

Tiwari and Buse (2007), the introduction of technology to the banking business started in the 1950s. With the advent of automated teller machines in the 1970s, they became a component of the banking sector (ATM). Mobile Phone Banking first appeared in 1980, and Internet Banking (I-banking) followed in the late 1990s. Since then, the banking industry has experienced an IT revolution that has made it easier to manage the exponential expansion in transaction volume and deliver better customer service. Mobile banking refers to using a mobile phone to check your account balance, make payments, and more. It is also referred to as M-Banking and SMS banking.

Lin (2007) explored that a company's information technology (IT) capabilities may boost its bottom line and provides it with a competitive edge. This study directly investigates IT capability, in contrast to prior studies, which typically assumed that IT investment results in IT capability, resulting in a competitive advantage. This research recommends that ICT competence and human capital investment directly affect how thriving banking organizations perform overall in terms of value creation. The report also contends that human capital investment and IT capabilities may negatively affect the firm's ability to create value. Instead of being viewed as a part of the company infrastructure that streamlines processes, an organization's IT capabilities should be viewed as a vital instrument for generating economic value. The findings of this study lend credibility to the firm's resource-based perspective.

As per the study of Laudon and Laudon (2006), information communication technology typically recommends that a computer-dependent system be made to maintain an organization's operations, management, and decision-making processes. Thus, information systems in organizations offer decision-makers information. Information systems are categorized as TPS, MIS, DSS, and SIS. Therefore, information technology (IT) data assists an organization's management functions. The use of information technology in service industries has dramatically increased in recent years, especially in the economic sector. With IT-related services like online banking, security investments, digital payments, and information interactions, banks can provide upper-class facilites to clients with not as much effort, improving their monetary routine. Fassnacht and Koese (2006) A solid information technology (IT) foundation has become a crucial prerequisite for any growing country's increased competitiveness and modernization of its economy and society. Due to their location at the confluence of two significant developments in the business world—the rise of services and the entry of ICT—electronic services powered by IT technologies have recently attracted much attention. India's adoption of IT is gaining steam, supported by a thriving service sector (which accounted for 64% of the country's GDP in 2015–16) and expanding communications.

Productivity in information communication technology (ICT) or information systems (IS) has always been a hitch in academics and business. ICT investment has surged twenty-five times what it was thirty years before, according to data from the National Income and Product Account and the Bureau of Labor Statistics. Labor productivity did not rise throughout this time. The growth rate of labor productivity fell from 2.68% in the 1960s to a low down of 1.03% near the 1990s. The "IT productivity paradox" refers to this phenomenon. Nobel Prize winner Solow famously said, "You can see the computer era everywhere, but not in the productivity numbers."

Additionally, non-important or detrimental ICT contributions to corporate assessment were noted in specific research. Based on his consulting work for 40 corporate instances, two ninety-two business cases, and once again for four eighty-six corporates, Strassman has shown no positive association between a company's profitability and IT spending. However, some research discovered some excellent benefits from IT. After seeing numerous studies demonstrating how IT adds value to businesses, Bakos asked, "How can computers be so productive?" However, Lee and

Shu could not discover any appreciable IT contributions using the same data set as the previous five investigations.

Additionally, they demonstrated how a difference in approach could substantially impact the findings of a study and found conflicting results for newly industrialized economies. We have not come across many scholarly studies that investigate a particular industry, even though there has been a lot of research done at the business or macroeconomic levels. This paper focuses on using data from the 1980s, bank businesses using latest data, whereas several earlier studies examined IT efficiency in the industrial industry. Additionally, we used data from a mutual data set, including time series and cross-sectional data. Some analytic approaches for board data, which can ignore these numerical issues, were chosen because conventional ordinary least square (OLS) analysis has several statistical matters and does not yield adequate findings. The productivity of capital has been the subject of various studies. Still, modest has been through to explain the efficiency of commercial information making and overriding possessions in conduct that are helpful to industry leaders in evaluating budgeting and arrangement.

Additionally, it was asserted by Kagan (2005) that internet banking procedures improve banks' level of activity. Because of this, it is clear that using online banking improves operational profitability and ROA performance. Kozak (2005) investigates how advancements in IT have affected the cost-effectiveness and profitability of the US banking industry between 1992 and 2003. He examines how changes in information technology have affected the cost-effectiveness and profitability of the banking sector between 1992 and 2003. The study shows a positive association between the applied information technologies. According to the research, profitability and cost reductions positively correlate with the amount of IT implementation. Bhat (2005) studied the effectiveness of public and private field banks concerning the perception of facility quality. In North India, public and private field banks were contrasted regarding service quality metrics. Regarding modern hardware and physical infrastructure, private banks were ahead of public sector banks; in reliability, general field banks were leading.

Shu and Strassman (2005) surveyed 12 US banks between 1989 and 1997. They realized that information technology could not increase banks' income despite being one of the most important dynamic variables linking all activities. On the other side, numerous pieces of research have supported the beneficial effects of information technology costs on corporate value. Ogunsola

(2005) found a significant gap in information technology research and development between wealthy and rising countries like Nigeria. Banks of Nigeria are investing heavily in IT as they look to gain a competitive edge in the fast-expanding global market. They anticipate more profitability as Information Technology spending rises. However, little to no information explains the effect of Information Technology investment on the economic routine of banks in Nigeria. The reading examines the influence of IT investment on the financial practice of banks of Nigeria using routine monetary metrics like Return on equity, return on assets, earning per share, and net profit scope with the price of IT and the figure of ATMs as the independent variables.

Kannabiran and Narayan (2005) India has been one of the world's top users of information technology over the past ten years, primarily due to its capability to offer software problem solutions to businesses all over the sphere. This prospective has given India's domestic banking division a considerable drive to take on cutting-edge technology, especially in the Internet banking and e-commerce sectors. The experiences a private-sector bank had in implementing online banking and e-business and trading in India are covered in this article. Along with considerable contributions to development, the tactical arrangement of commerce and ICT plans, the scheduling and execution of e-commerce projects, and noted benefits organization.

Kolodinsky et al. (2004) mentioned that the range of services provided by e-banking, such as ATM services, direct deposit, automatic bill payment (ABP), electronic transfer of funds (EFT), and computer banking (PC), has prejudiced American customers to use technology and e-banking. Casolaro and Gobbi (2004) researched the effects of increased information technology use on e-banking and commerce in banks of Italy. The study revealed a substantial correlation between prosperity and efficiency in banks of Italy and the increase in information technology use. Mattila, (2004), and cost-savings in operations, mobile banking offers banks a new chance to expand their client offerings and increase their competitiveness.

Buzzell (2004) stated that IT in banks is advantageous and lucrative in terms of the practical and essential benefits it provides. IT benefits banking organizations by lowering operational costs and enhancing the sophistication of their product offerings. A glance at bank financial accounts reveals a significant resource investment in purchasing and implementing information technology (IT). For a few years, certain banks' spending on IT accounted for approximately half of their overall fixed asset investments. This focus on IT implementation raises the possibility of a significant

relationship between Information Technology implementation and bank prosperity. However, proof from pragmatic literature shows a starkly divergent empirical conclusion amid these factors (EL-Bannany and Holden, 2004).

According to Sohail and Shanmugham (2003), information technology has significantly aided the banking system's development. With the help of technical updates, banks have resolved the problems by applying a new policy that emphasizes increasing customer needs by providing better products and facilities while also trying to decrease operating costs. According to Berger (2003), banking is likely the most prominent sector. The introduction of ICT-related goods in online banking, security money, digital payments, and information exchanges has helped banks provide consumers with a broader range of services while using less staff. It is clear from this growth pattern that IT may contribute similarly to earnings. General, empirical investigations found two benefits in the association between ICT and bank routine. First, ICT may lower operational expenses for banks (the cost advantage).

Ahmad (2003) argued that bank prosperity stands on a trivet, consisting of internal factors that border on management policies, regulatory policies (fiscal and credit policies), and macroeconomic indicators such as swap charges and price increase rates, among others. Ahmad summarized the submissions of different reporting types on bank prosperity determinants. He appeared to pay no attention to the fourth element, firm-specific factors, which have established a lot of consideration in the literature.

Corrocher (2002) Information Technology is in charge of the new service delivery and improvement channels, mainly because the forceful demand for intelligence and data has been brought significantly up in the changing spaces of organizations today. Bátiz-Lazo and Wood (2002) predicted that ICT applications would significantly impact banking and finance organizations, providing the vital position that information processing plays in the banking business. The research examines the impacts on banking companies of both front-office or external changes (innovation in products and services) and back-office or internal changes (operational function).

Subsequently, Fincham et al. (1994), Garbade and Silber (1978), Morris (1986), and Quintás (1991) evaluate IT-based technological developments and divide them into four distinct periods: early acceptance (1864–1945); particular application (1945–65); emergence (1965–80); and

diffusion (1980-95). The industry has given a new word to express this rising class of customers, "the transactional customer" (Rotella, 2001). DeYoung (2001a) looked at the effectiveness of American banks and thrifts that only operate online. The empirical study discovered that while newly chartered Internet-only banks initially perform much worse than existing banks, these performance differences gradually close as new banks get older and more prominent. According to the study, an efficient implementation of the Internet-only banking paradigm might be possible. According to DeYoung (2001b), due to small trade volumes and high non-interest operating costs, the regular Internet only made much less than the average branching bank after one year. It supports the claim that Internet-only banks have had "rapid expansion but poor (or no) earnings." Heyward, Ross, and Tambini (2001) and other researchers offered several frameworks to aid in choosing amongst different Information System evaluation approaches. IT infrastructure is one of the critical factors influencing IT installation and applications to enhance customer service, transaction processing, and organizational performance, including software, hardware, databases, and networks.

Furst et al. (2000) provided information on national banks in the US that propose online banking and the available goods and facilities. In the third part of 1999, just twenty percent of national banks showed online banking. Although, when taken as a whole, "Internet banks" were answerable for eighty-four percent of small deposit accounts and nearly ninety percent of the possessions of the entire national banking system. Compared to non-Internet banks, banks that recommend Internet banking depend less on interest-yielding operations and core deposits. Additionally, in terms of profitability, institutions offering Internet banking outscored banks without it. According to Sullivan (2000), online banks in the 10th Federal Reserve District had elevated costs and fee income, leading him to conclude that Internet banks' profitability metrics are comparable to those of non-Internet banks.

Searches of the literature yielded little evidence of studies on the connection between Nigerian bank financial performance and IT spending. This is large because it is challenging to identify variables that genuinely reflect the industry's actions, which is particularly true of modeling the strange nature of banks' manufacture processes. Information technology "contributes greatly to company level of output," according to Brynjolfsson and Hitt (2000). Dasgupta, Agarwal, Ioannidis, and Gopalakrishnan (1999) organizations now find it more challenging to decide

whether to implement new information technology due to advancements in the field and changes in worldwide situation. Additionally, in a global setting, information systems are impacted by various laws, cultures, IT frameworks, and the accessibility and function of trained employees. Information systems investigations have typically concentrated on the United States and United Kingdom businesses, not including how these models and frameworks may be absolute to rising nations. The adoption of procedure-based information communication technology in the manufacturing industry of India was examined in 46 organizations. Although there are numerous variations between developing and developed countries, such as the types of organizations and the technology available, we discovered that factors that affect the adoption of information communication technology are similar. Our findings demonstrated that organizational factors like a firm's culture and size, as well as external factors like the rivalry that firms must contend with, governmental regulations, and market push like exchange rates and computer prices, have a significant bearing on the decisions that firms make regarding the acceptance of information communication technology. Additionally, we discovered that IT adoption was negatively impacted by the function of management information systems professionals.

They claimed that compared to non-IT capital, which adds only 6%, IT money marginally increases output by 81 percent. It also showed that information system specialists are twice as prolific as non-specialists. Monetary institutions are one of the most prominent investors in IT, even though spending on information technology (IT) is seen as expensive and dangerous (Robson, 1997). It is also partly because there is a shortage of high-quality information on banks' IT spending. Mitra and Chaya (1996) state that lower average manufacturing costs while raising average operating costs in businesses. Hit, Brynjolfosson (1996) show how IT has improved output and consumer excess. They did not discover any appreciable association between IT expenses and financial results.

Likewise, Barua and Kriebel Mukhopadhyay (1995) found little evidence of the remuneration extending to company routine as calculated by Return on possessions. Still, they found that IT investment affects in-between metrics (such as inventory income) (ROA). Lichtenberg (1995) discovered that announcements of new IT projects for a company's sector were linked to favorable abnormal stock returns. Most of these study pains have been focused on the manufacturing industry due to the shortage or absence of data and, possibly more prominently, the challenge of clearly

defining the output of an overhaul industry. These researches examined a connection between business routine and IT expenses. According to the argument, the impact of significant IT spending in one period on a financial practice would not be seen until afterward if it were intended to improve future operating capacities. According to research done in Nigeria by Ogunleye (1995), the reserve ratio, allowable credit expansion, stability securities and exchange rate are all factors that affect profitability. Asset and liability portfolio mix and overhead are costs. According to further empirical studies by Loveman (1994), there isn't enough evidence to definitively disprove the claim that IT investment has little bearing on productivity and profitability. However, academics have discovered many offerings to efficiency and prosperity due to IT adoption; working with firm-level data customers in today's financial services (FS) industry wants immediate delivery. In other words, people want to be able to make real-time transactions for any goods from any location, using any device, at their convenience. They need uniform service levels across all delivery channels at the same time.

Clarke (1994), the use of IT has changed over time, from its initial function as a means of automating trade processes in the 1960s to the understanding of IT's contribution to better organizational management and control in the 1970s to the concepts of using IT for strategic advantage in the 1980s. As regards banks, Markus and Soh (1993) revealed that whereas central banks saw negative returns on their concurrent IT expenses, small banks didn't demonstrate a considerable connection between IT expenses and prosperity. This suggests that not all banks benefit financially clearly from their IT spending. The primary impetus for this research, which aimed to examine the effect of investment expenses on IT on the financial routine of banks in Nigeria, was the unexpected confirmation of the efficiency irony in the United States banking system. Ahituv and Neumann (1993) stated that an information system combines different elements (people, technology, software, data, and procedures) to produce information that supports an organization's operational and managerial responsibilities. There is a lot of literature on the broad topic of information technology (IT). While transformation refers to Information Technology applications that fundamentally alter the marketplace and industry environment and are frequently referred to as strategic, the information elaborates on management support, decision support, and data warehousing applications. Studies already conducted say that IT has three unique properties that can significantly alter how labor is prearranged (Adler, 1992). They include internetworking, automation, and informational abilities. Automation is done by using an IT

system to complete routine operations in place of physical labor. The phrase "info mating ability" refers to IT's capacity to provide in-depth knowledge of the work process. Whereas transform means ICT applications that fundamentally alter the marketplace and trade environment and are frequently referred to as strategic, the information describes management facilities, decision bear, and data warehouse applications.

Studies already conducted typically remark that IT has three unique properties that can significantly alter how labor is organized (Adler, 1992). Superior information communication technology expenses are linked to reduced expansion in service costs for the insurance business

 (Katz and Harris, 1991). According to Clemons and Row (1991) arguments that the effect of IT facilities on business routine depends on a range of factors which counts the firm's strategic profile, its capability to incorporate new IT, the events of rivals, and the motion of the firm's business atmosphere In a review of studies on the effect of IT on business routine, Exogenous variables can be further divided as environment-related, Firm-specific elements. Investments in information technology reduce overall expenses in the banking sector (Alpar and Kim 1990). IT spending has favorably impacted the banking industry's performance or productivity. For instance, little research on how IT investments affect economies with mature economies demonstrates poor or nonexistent correlations between IT expenses and manufacturing (Morrison and Berndt, 1990). Then, a full explanation of the data and methods used in the study is taken into account. The subsequent statistical test results then provide the foundation for the concluding remarks. There is conflicting evidence in the minor literature on the effect of IT on bank profitability about the relationship between IT spending and company performance (Morrison and Berndt, 1990). Whether investing in IT increases productivity and operational effectiveness is up for debate. The infamous Solow computer productivity paradox was the first to cast doubt on the effect of IT on productivity and profitability.

Government statistics led Morison and Brendt (1990) to conclude that IT had received excessive expenditure because technology only offered marginal gains. A primary assumption in the current research was that revenue and income growth could get through increased IT expenses. The information ability "generates[s] information about the underlying productive and administrative processes through which an organization accomplishes its work" (Zuboff 1988), differentiating IT from the automation technology that signifies the early phase of the industrial uprising. Activities

that had previously been either entirely or somewhat opaque now have an extensive level of simplicity. This is how IT transcends the conventional logic of automation. Automation, information technology events, activities, and objects are converted into and made visible by knowledge. The past ten years have seen a significant shift in customer behavior and service expectations due to the emergence of direct banking and Internet-based monetary facilities. We can see the computer age everywhere, except in the production figures, said Nobel laureate Solow (1987) concluded that increased IT spending had a detrimental impact on productivity. "Projected marginal benefits of investing in IT are smaller than the estimated marginal expenses," they noted. The terms automation, information, and transformation are used by Zuboff (1985) to group various IT applications into separate categories. "automate" refers to transaction processing and other IT applications that assist and streamline regular day-to-day company operations. They are networking, automation, and informational capabilities. Automation uses an IT system to complete routine procedures in place of physical labor. The phrase "info mating ability" refers to IT's capacity to provide in-depth knowledge of the work process. Akoka (1981) said structured operational control problems should be evaluated using cost-benefit analysis, while unstructured strategic planning problems should be considered using edictal reports and managerial assessment of system value. According to Hallgarten, Gorry, and Scott-Morton's (1972) framework for IT is a contingency model for choosing among evaluation methodologies of IT investments.

Farouk and DanDago, (1970) describes how investments in information technology (IT) affect the financial health of banks in Nigeria. The research spans a five-year post-banking consolidation period. All 24 banks made up the study's population and ten banks were chosen randomly from the population. The study uses secondary data collected from Central Bank of Nigeria (CBN) reports, annual accounts and reports of the banks, and records kept by the Stock Exchange of Nigeria. The data were inspected using a panel data regression model, where the investment in IT (hardware, software, and Automated Teller Machines, or ATMs), total earnings (TR), and total cost (TC) of the ten sampled banks were used as independent variables, and the dependent variable was financial performance, which Return on assets (ROA) represented, Return on equity (ROE), net profit margin (NPM), and earnings per share as well as Return on assets (ROE), Return on equity (ROE (EPS). The panel regression analysis showed a significant association between the independent and dependent variables; nevertheless, the test showed that the ROA, ROE, and EPS

effects of IT investment on the financial performance of Nigerian banks are also significant. All four financial performance indicators are impacted positively by TR while negatively by TC.

However, IT investment has an unexpectedly negative impact on all four financial performance measures. In other words, substantial IT investment does not boost bank profitability, resulting in an IT productivity paradox in the Nigerian banking sector, indicating a rise in IT spending results in a drop in the financial performance of Nigerian banks. Little to no knowledge clearly defines the relationship between IT expenditures and financial performance, as evidenced by the debate on the relationship between IT spending and bank performance in Nigeria. Singh and Malhotra (1970) state that a paradigm shift in banking operations has been brought about by the enormous technological advancements and the aggressive incorporation of information technology. The global banking sector change brought about by internet banking has become the focus of numerous international researches. However, India has never had good literature on the subject. It looks at the profitability, cost-efficiency, and other aspects of commercial banks that offer Internet banking compared to other commercial banks.

2.2 GAP IDENTIFICATION

Research gap is essentially a concern or issue that hasn't been addressed in a discipline but does so because there isn't enough research in that area. A research gap can also arise when there is a sizable body of prior study, but the results point in various ways, making it challenging to draw conclusive conclusions.

In the current research there are 143 quality research papers studied from reputed journals out of which 55 papers are in line with the current study.

Following key words are used to do literature review – **POS, ATM, ROA, Deposits in Banks, Profitability, NIM, ICT adoptions, Debit card, Credit Card etc.**

Table-11 Research Gaps in Previous Studies

S. No	Title	Year	Author	Journal/Vol	Key Findings	Gap Analysis
1	Nexus between information technology investment and bank performance: the case of Jordan.	2023	Asma'a Al-Amarneh Jordan, H. Y., Atta, A. B., & Khalaf, L.	"Banks and Bank Systems", 15 February 2023	In comparison to larger banks, smaller banks have higher IT investment as a percentage of assets. While adjusting for bank size and financial leverage, three metrics are used to assess bank profitability: return on equity (ROE), return on assets (ROA), and net interest margin (NIM).	Study of Public sector Banks are not taken into Consideration. Drivers for ICT adoptions are not defined .
2	Technology-based banking and bank deposit: The Nigerian commercial banks' experience.	2023	Bernard Azolibe, C., Okonkwo, J. J., & Obi-Nwosu, V. O.	African Journal of Science, Technology, Innovation and Development,	ARDL-ECM analysis, there is a significant positive association between total bank deposits in Nigeria and the number of ATMs and the dollar amount of POS transactions, both in the short and long terms. The results for mobile and internet banking were found to be unfavorable and negligible, indicating that these services are still not widely used in Nigeria	Public sector banks are not taken into consideration. Only results in Mobile and internet Banking are taken into consideration
3	Information Technology Governance and Bank Performance: A Situational Approach.	2023	Khamees, B. A.	International Journal of Financial Studies, 11(1), 44	Return on Investment (ROI), Return on Equity (ROE), and Tobin's Q are indicators of financial performance. Over the course of five years, from 2015 to 2019, averages of these variables were calculated. In fact, there is evidence to support the claim that deploying ITG will help banks perform better	Comparative study between All Public sector Banks is not Considered
4	The Impact of ICT on the Profitability of Indian Banks: The Moderating Role of NPA	2023	Thakur, S., Rastogi, S., Parashar, N., Tejasmaye, P., & Kappal, J. M	Journal of Risk and Financial Management, 16(4), 211	The study sheds light on how ICT enhances bank profitability both during and after COVID-19. The results are estimated using panel data analysis. According to this study, there is a linear relationship between ICT and banks' profitability (NIM) in India. ICT and profitability, however, appear to have a favorable U-shaped link, according to the quadratic association	Comparative study between All Public sector Banks is not Considered

5	Electronic banking systems and the performance of deposit money banks in Nigeria	2023	GBANADOR, M. A	Nigerian Journal of Management Sciences Vol, 24(1a)	The study discovered that the performance of DMBs in Nigeria was not significantly impacted by e-banking systems in the short term. The results of the long-term investigation, however, showed that mobile banking has a favorable and significant impact on the performance of DMBs in Nigeria, whereas ATM and POS have a good but minor impact	This study is restricted to E Banking Only
6	Impact of digital payment adoption on Indian banking sector efficiency	2022	Saroy, R., Jain, P., Awasthy, S., & Dhal, S. C	Journal of Banking and Financial Technology, 1-13.	When banks go digital, there may be an increase in efficiency due to cheaper availability of these inputs rather than a direct reduction in the inputs used in intermediation	Comparative study between All Public sector Banks is not Considered
7	Digital bank transactions and performance of the Indian banking sector	2023	Shaikh, I., & Anwar, M.	Applied Economics, 55(8), 839-852	On the surface, it appears that the proportion of public sector banks in digital transactions with their counterparts in the private sector banks has decreased. Real-Time Gross Settlement (RTGS) and National Electronic Fund Transactions (NEFT) value increases by 1% are shown to improve business per employee by 0.03% and 0.08%, respectively. The CASA to Deposit ratio (0.016% and 0.0078%) is in fact further explained by a change in RTGS and NEFT transactions.	Only RTGS,NEFT and CASA to Deposits taken into consideration to measure Bank performance and ICT adoption
8	Impact of online banking on the profitability of Nepalese commercial banks	2023	Pandey, S	PERSPECTIVES IN NEPALESE MANAGEMENT, 301	The chosen independent variables include ATM banking, point of sales banking, QR code, mobile banking, internet banking, and credit card. The utilization of primary data is employed to evaluate customer perspectives on online banking services.	This study is not considering PSU Banking.
9	Technology-based banking and bank deposit: The Nigerian commercial banks' experience	2023	Bernard Azolibe, C., Okonkwo, J. J., & Obi-Nwosu, V. O.	*African Journal of Science, Technology, Innovation and Development*, *15*(1), 31-44	According to the findings of the ARDL-ECM analysis, there is a significant positive association between total bank deposits in Nigeria and the number of ATMs and the dollar amount of POS transactions, both in the short and long terms. The results for mobile and internet banking were found to be unfavorable and negligible	Only ATM , Bank Deposits and POS is taken into consideration

10	In search of a rational foundation for the massive IT boom in the Australian banking industry: Can the IT boom really drive relationship banking	2022	Gangopadhyay, P., Jain, S., & Bakry, W	International Review of Financial Analysis, Volume 82July 2022	They examine the impact of information technology on the cost and profit effectiveness of Australian banks from 2000 to 2019 using the dynamic panel data approach, panel ARDL and cross-sectional-ARDL (CS-ARDL) models. We clearly demonstrate that the adoption and spread of IT investment has increased bank profit margins, defying the conventional wisdom that IT has not been able to effectively gather soft data in the banking sector.	This study is not considering PSU banking in the country
11	Information technology governance and bank performance: evidence from Palestine	2021	Awwad, and Khoury, R	Journal of Decision Systems	While the presence of Information technology expertise on the board of directors and in executive management serves as a proxy for IT governance, two accounting procedures—Return on Assets (ROA) and Return on Equity—provide information on performance (ROE). Findings underline the significance of IT governance and demonstrate the necessity of developing and upgrading Palestine's corporate governance standards	This Study is more focused on ICT and Governance .
12	The impact of financial technology on China's banking industry: An application of the metafrontier cost Malmquist productivity index.	2021	Kwan et al	he North American Journal of Economics and Finance, 57, 101414.	Deposits poured into banks with superior IT skills, and businesses were more likely to move to these banks. Additionally, well-established internet sales channels make it easier to extract rents through product cross-selling, which increases profits.	Comparative study between All Public sector Banks is not Considered
13	Impact of information technology on the banking sector in	2021	Malik Mustafa.	International Journal for Modern in Science and Technology, 201-204.	The system can vaguely access a user's bank account and carry out specific operations and transactions, including payments, transfers, account inquiries, and other services that will be further shown. Some customers are not	This Study is restricted to ICT adoption in terms of Mobile Banking

				yet comfortable using m-banking services.	
14	TECHNO LOGY ADOPTI ON IN BANKIN G SECTOR: THE INDIAN CONTEX T.	2021	Arora, R.	Academy of Strategic Managemen t Journal, 20, 1-16.	The banking industry recently achieved quick progress by using IT as a platform and attempting to reach higher altitudes. A focus on essential concerns, including the market, clients, competition, technology, and society, has driven banks to implement the most sustainable best practices in the world due to customer conscience.	Comparative study between All Public sector Banks is not Considered
15	Can Fintech improve the efficiency of commerci al banks?— An analysis based on big data.	2021	Wang et al.	Research in international business and finance, 55, 101338.	Consumer understanding of various banking technologies impacts banks' earnings, including internet banking, mobile banking, ATMs, debit cards, RTGS, and credit cards. In addition, Fintech lowers the cost of financial intermediation	This study is not considering PSU banking in the country
16	IT adoption and bank performa nce during the Covid-19 pandemic .	2021	Dadoukis, Fiaschetti, and Fusi's	Economics Letters, 204, 109904.	We express that in terms of Tobin's q, lending, market returns, and elevated information technology users outperform. As per our statistics, added loans are given under the United States Paycheck Protection Program	All ICT adoption tools are taken as single unit.
17	Statistical and bibliomet ric analysis of financial innovatio n.	2020	Chen, T. H., & Peng, J. L.	Library Hi Tech, 38(2), 308-319.	Demonstrates how Fintech makes banking credit facilities easier in Chinese banks,	Overall impact of ICT adoption studied. Study of PSU banks in not considered
18	Financial sector policy response to COVID-19 in	2021	Feyen et al.	Journal of Banking & Finance, 133 , 106184.	Using various channels, such as all-day hours, remote financial facilities, regular branches, telebanking, Internet, ATM, and personal computers, can help banks re-design their operations to achieve more profitability	Public sector banks are not taken into consideration.

	emerging markets and developing economies.				
19	Measuring gap in expected and perceived quality of ICT enabled customer services: A systematic study of top ten retailers of India.	2020	Nigam and Sameer Sharma	International Journal of Applied Systemic Studies, 9(2), 159-184.	The research finds banks engage in various activities in addition to updating technology. For different processes, including issuing cheque-books, mailing account statements, debit/credit card statements, setting up online accounts, designing new products, and so on, centralized processing is done at the corporate level	This Study is considering all banks as a one Unit.
20	Risk-adjusted efficiency and bank size in a developing economy: an analysis of Vietnamese banks.	2020	Le and Ngo	Journal of Economic Studies.	Contend that the size of the bank has a sizable moderating effect on the profitability of the bank	ICT adoption in banking is not considered
21	The Effect of Bank Size on Financial Performance: A Case Study on Kuwaiti Banks	2020	AlAli and AlKulaib	Journal of Insurance and Financial Management	Information and communication technology (ICT) includes software, hardware, networks, media collection, storage, processing, and presentation. The usage of contemporary financial apps has boosted competition in the financial sector	Relationship of Study is restricted to ICT adoption and size of Bank

22	E-Banking in India: Exploring the evidences from selected regional rural banks.	2020	Rizvi, H. S., Khan, B., & Khan, S.	Indian Journal of Economics and Development, 16(3), 397-403.	The study also sought to pinpoint any technologically related limitations in rural financing. The information was gathered from the RRBs' annual reports	This study is exclusively focused on rural Banking
23	How much do banks spend on technology? Observations from the Fintech shark tank.	2019	Shevrin	Fintech Shark tank	It is possible to discover various conclusions regarding the relationship between financial technology and profitability since big and petite banks differ in their operations and investments in economic knowledge	Public sector banks are not taken into consideration
24	Bank size, returns to scale, and cost efficiency,	2019	Sapci and Miles	Journal of Economics and Business, 105(C), 105842.	Assert that larger banks experience more excellent scale effects than smaller ones and demonstrate that bank size significantly impacts cost-effectiveness and returns on investment in the US banking sector	Study of Scale and cost effectiveness is discussed.
25	The impact of ICT on financial development: Empirical evidence from the Gulf Cooperation Council countries.	2019	Alshubiri et al.	International Journal of engineering business management, 11, 1847979019870670.	ICT revolution has led many nations to contemplate technological advancement. It has made electronic finance a crucial component of all economic and financial sectors with a noticeable impact on productivity by attracting international investment	Comparative study between All Public sector Banks is not Considered
26	The effects of technology on bank performance in advanced and emerging economie	2019	Tunay, N., Yüksel, S., & Tunay, K. B.	IGI Global	Electronic banking has become a standard business practice practically adopted by banks, especially in the previous few years. Banks invest in this region to attract clients to endure such an extreme environment	Only E banking and Bank performance is taken into consideration

	s: an empirical analysis. In *Handbook of research on managerial thinking in global business economics* (pp. 263-280).				
27	Impact of information and communication technology and financial development on economic growth of OPEC developing economies.	2019	Sepehrdoust and Ghorbanseresht	Kasetsart Journal of Social Sciences, 40 (3), 546-551.	It was observed that electronic banking technologies are used to increase profitability, and banks are investing in new technologies to boost their productivity, the value of their services, and financial performance	ICT adoption tools like ATM,POS, Debit card and Credit cards are not taken into consideration
28	Information Technology in Indian Banking Sector: Some Recent Developments	2019	Satinder Singh and Ajaydeep Singh Brar	International Conference on Recent innovations in Sciences, Management, Education and Technology (Vol. 4, No. 7, pp. 529-535).	The various potentials for the banking industry have also been discussed. Since IT plays a significant role in banking, the paper also looks at IT in that sector	This study has taken banking in India as a One Unit
29	Factors influencing digital bank performance.	2019	Koroleva, E. V., & Kudryavtseva, T.	In Digital Science Springer International Publishing.	Despite the growing importance of digitalization, surprisingly little is known about the factors that affect the performance of digital banks	Factors affecting ICT adoption in Banking are not known

30	Examining the efficiency of IT applications and bank performance	2019	Kwateng, K. O., Agyei, J., & Amanor, K	Industrial Management & Data Systems	This study uses data envelopment analysis to look for causal relationships between the effectiveness of information technology (IT) applications and bank performance. The study uses the DEA method to assess the cost and IT effectiveness at the bank level	Comparative study between All Public sector Banks is not Considered
31	Evaluation of information technology impact on bank's performance: The Ghanaian experience.	2019	Appiahene, P., Missah, Y. M., & Najim, U	International Journal of Engineering Business Management, 11, 1847979019 835337.	The lack of reliable quantitative indicators has often been blamed for the findings of earlier studies on IT and business performance. In comparison to parametric approaches, non-parametric models like data envelopment analysis (DEA) have been proposed as a suitable qualitative indicator of IT influence on organisational performance	Proxy to ICT adoptions are not tested extensively
32	Characteristic of Information and Communication Technology (ICT) Innovation and Its Application (A Descriptive Study in Lhokseumawe City)	2018	Fazil	Journal Komunikasi: Malaysian Journal of Communication, 34(3), 379-391.	ICT enhances the banks' operational flexibility and encourages financial risk disclosure to guarantee safe operations	Comparative study between All Public sector Banks is not Considered
33	Digital Transformation in commercial banks? —An analysis based on big data.	2019	Yang and Zhang	Research in International business and finance, 138, 1022.	Highlighted that providing technological-based products and services to customers is a significant advantage to banks.	Study is focused on ICT adoption in Banking by Customer.
34	Digital technology in the realm of banking: A review of literature.	2018	Sardana, V., and Singhania, S.	International Journal of Research in Finance and Management, 1(2), 28-32.	The phenomenal results in the digital world have entirely changed the bank's work. The introduction of the digital business age has been upending the commercial landscape and bringing about the novel and distinctive business practices	Comparative study between All Public sector Banks is not Considered

35	A Study on Role of Technology in Banking Sector	2018	Aswin Raj. T | Mr. Bala Nageshwara Rao	International Journal of Trend in Scientific Research and Development	Findings show that the majority of bank customers utilize ATMs. Therefore, banks must be made aware of e-banking services	Study is focused on ICT adoption in Banking by Customer.
36	The effects of trade wars between US and china on the financial performances of the banking companies	2017	Ersin and Duran	Multidimensional Approaches for Business Success, 323-339.	Technology-based electronic applications like point of sale networks, mobile banking, internet banking, telephone banking, and (ATMs) offer considerable advantages when offering existing products to customers	This study is restricted to specific situation
37	Measuring the Waste-Conscious and Saving Habits of the Youth in Turkey:The Sample of Istanbul Medipol University	2017	Ersin and Eti	International Journal of Islamic Economics and FinanceStudies, 3(3), 41–49	By engaging and encouraging customers to use electronic banking services, their visits to the branches can be minimized or made more feasible. The results of applied research on banks in different countries projected that banks could function better by using electronic banking services	This Study is restricted on Customer adoption only.
38	Comparative study between private sector and public sector banks in the adoption of technology in banking services-	2017	Chandan Babu and Rajini	ISOR Journal of Business Management, 64â, 69, 17037-2017.	Comparisons of banks in various regions were made to investigate user interactions with Internet banking, ATMs, mobile banking, telephone banking, and other facilities, along with difficulties in using the bank's technology. The function of a nation's central bank in its economic development is crucial	Comparative study between Public and Private sector is done. But not within all PSB.

	Twin Cities.					
39	Impact of Information and Communication Technology on Service Quality of Banking Sector: A Comparative Study of Private and Public Sector Banks in Gwalior and Chambal Region.	2017	Vashisht .A	Social Sciences, 7(01).	The planned study aims to recognize the patterns of bank adoption of electronic media, the drivers and barriers to bank adoption, the IT-affected dimensions of the quality of e-banking services, and consumer adoption of these services	Comparative study between All Public sector Banks is not Considered.
40	The bank of the future, the future of banking- An empirical analysis of European banks.	2017	Rega	SSRN Electronic Journal	Explores how the number of physical branches and digital assets impacts bank productivity in a sample of 38 European banks from 2013 to 2015	The Impact of ICT adoption on Branch Management is taken into Consideration.
41	Identifying the determinants of interest rate risk of the banks: A case of Turkish banking sector.	2016	Yüksel, S., & Zengin,	International Journal of Research in Business and Social Science, 5(6), 12-28.	Banks can improve profitability, and the risks can be significantly decreased compared to conventional banking products	ICT adoption and interest rate risk is not being discussed.

42	Nexus between financial inclusion and economic growth: Evidence from the emerging Indian economy.	2016	Sharma , Dhiraj	Journal of financial economic policy, 8(1), 13-36.	The sooner technology is incorporated into their business plan as a whole, though, the sooner they will be able to regain their lost market share.	Penetration of ICT adoption is discussed. Banks performance is not taken into consideration
43	Impacts of e-banking on performance of banks in a developing economy: empirical evidence from Bangladesh.	2016	Siddik, Sun, Kabiraj, and Shanmugan	Journal of Business Economics and Management, 17(6), 1066-1080.	Because e-banking is becoming more popular in Bangladesh; the outcome of e-banking on bank routine has not yet been determined; their study will fill this gap	Proxy to ICT adoption in Banking is not considered
44	A Comparative study of e-banking in public and private sector banks with special reference to (SBI and HDFC).	2015	Ashok Kumar Chandra	International Journal of Management and Commerce Innovations.	E-banking is the future of banking; internet banking is gaining popularity with customers and strengthens the bonds between bankers and customers.	Comparative study between All Public sector Banks is not Considered

45	Interaction between Internet banking and bank performance: The case of Europe.	2015	Tunay et al.	Procedia-Social and Behavioral Sciences, 195, 363-368.	ATMs are widely distributed across the globe; users can access their bank accounts wherever they choose, increasing the benefits of utilizing an ATM. The importance of a bank's network to a client will be influenced partly by the bank's final system size, which would mean that the significance of an ATM network increases with the number of available ATMs increases in different locations	More focused is used for ATM network. Other ICT proxy are not discussed.
46	Impact of ICT on effective financial management.	2015	Kirmani et al.	International Journal of Information Science and System, 4(1), 1-14.	ICT refers explicitly to various IT techniques for handling and managing electronic data. The emergence of ICT businesses is now able to interact and carry out their operations more effectively through digital networks	Only ICT adoption is discussed in the study. Bank performance is being ignored
47	The effect of information technology on the bank profitability imperial study of jordanian banks.	2015	Nawafleh	International Journal of Business and Management, 10(2), 170.	The use of electronic-banking tools to promote different financial products has expanded significantly	Relation between Bank Profitability and ICT adoption is discussed. Comparative study is missing
48	The impact of internet technology on the Romanian banks performance. In Proceedings of international academic conferences (No. 0702397).	2014	Gutu	International Institute of Social and Economic Sciences.	This revealed that customers in these nations continue to desire traditional bank services offered in branches. As a result, profitability suffers, and the anticipated cost reduction of e-banking services cannot be realized	This study is restricted to internet Banking only

49	Impact of technological innovation on delivery of banking services in Nigeria.	2014	Wilson et al.	In 14th international conference on economics, education and humanities, Indonesia (pp. 162-168).	The statistics come from a nation of sub-Saharan Africa where bank savings in IT is not until now at their peak. The findings indicate that IT investment is essential for banking organizations to maintain their ability to function effectively in the current competitive banking business	Impact of ICT adoption is not studied
50	Performance of Banking Sectors Due to Adoption of Information Technology (IT).	2014	Behera, A. K., Nayak, N. C., & Das, H. C.	RIMCIS: Revista Internacional y Multidisciplinar en Ciencias Sociales, 3(1), 91-110.	Using a survey method, opinions from branch managers, employees, and clients were gathered. In accordance with the bank's grading scale, each of the 18 branches was given an equal grade. Three distinct kinds of surveys were created for branch managers, branch employees, and branch customer	Comparative study between All Public sector Banks is not Considered. Proxy to ICT has not be discussed in detail.
51	A comparative study of mobile banking services in public and private sector banks.	2013	Motwani Matharu and Haryani	International Journal of Marketing & Business Communication, 2(3), 41.	The banking industry has implemented mobile banking to provide financial services at the convenience and comfort of its consumers to meet the constantly rising expectations and demands of the consumer market	This study is restricted to mobile banking only.
52	FDI and ICT effects on productivity growth.	2013	Hosein andYazdan,	Procedia-Social and Behavioral Sciences, 93, 1710-1715.	E-banking services serve their customers in a better way as well as increase the bank's monetary routine. Still, despite having high infrastructure costs, emerging nations do not have enough users for online banking	Study is restricted to E banking only.
53	Emerging role of information technology in banking sector's development of India.	2013	Mittal, and Gupta,	ACADEMICIA: An International Multidisciplinary Research Journal, 3(9), 11-17.	The banking business has been growing very fast by employing IT as a stage and trying to catch new targets. In this study, an effort has been made to investigate numerous cutting-edge tools recently released by banks	Comparative study is missing for Public sector Banks

| 54 | Effect of investments in information technology on bank performance: empirical evidence from Indian public sector banks. | 2013 | Arora, H., & Arora, P. | International Journal of Business Information Systems, 13(4), 400-417. | the analysis was unable to uncover any proof of a significant connection between IT spending and ROA. Thus, this study finds evidence that significant IT spending by Indian PSBs has not been a waste and has really increased revenues | Comparative study was not done. |
| 55 | Emerging role of information technology in banking sector's development of India. | 2013 | Mittal, and Gupta, | ACADEMICIA: An International Multidisciplinary Research Journal, 3(9), 11-17. | Investigated the variables affecting customer satisfaction in Indian banks and how they affected it. 400 customers of 13 retail banks in India were given a survey | This Study is focused on ICT adoption by consumers only. |

Source: Author's own after Gaps Analysis and Literature review

2.3 GAP ANALYSIS

The major gaps identified on analysis of existing literature are as follows:

1.No specific study was done previously to do a comparative analysis of all public sector banks in India.

2. The whole literature deals either with the aggregate effect of online banking, its adoption, or only those customers who have it.

3. Most of the reviewed studies focused on customer perception or behavioural studies of the use of technology while executing banking transactions.

4. Most of the research ignored the cost-benefit analysis of technological adoption by public sector banks.

5. There is a lack of study to do the analysis of the impact of information technology adoption on interest and not interest incomes.

6. There is a lack of studies that explain the variation in the deposits and profits of PSU banks in India.

This study focused on a "Comparative Study of Public Sector Banks in India with Respect to Deposits, Profits, and Technology Adoption. This study was done keeping in mind the 12 public sector banks operating in India. In-depth analysis of different variables is done so as to ensure efficient decision-making by investors and suggest key areas for various public sector banks to work in and compete with private bank.

CHAPTER SUMMARY

With the review of literature, various papers on banks' performance and issues and challenges with ICT adoption were studied. With the detailed analysis, it was found that no specific study in India has been undertaken that has included all public sector banks operating in India. When it comes to technology adoption and its impact on the earnings of the banks. The research gaps have been identified. Most of the study focuses on the impact of ICT adoption by banks and customer usage effectively. However, a detailed investigation is missing covering the impact of ICT adoption on the earnings of public sector banks in India. In addition to that, a comparative analysis of all PSU banks with respect to deposits and profits was not done previously. The review of literature helps in identifying various gaps to be bridged by this study.

CHAPTER-3

Research Methodology

3.1 RESEARCH METHODOLOGY

A step-by-step explanation of the research approach is provided, which is crucial for any form of objective and crucial study. The quality of the research methodology used and the application of ethics also reflect the credibility of the research findings subsequent to the study. This chapter provides readers with a thorough and effective research approach that will help them comprehend the complete undertaking of the research. The current chapter also presents the definition of variables, data selection, and methodology to analyse the relationship between information technology adoption and bank earnings, i.e., financial performance. Several variables are included in the empirical analysis, and panel data has been used as the primary econometric method. We first start with the description of the data. provides information on the data collected and used, the study period, the choice of databases, and other sources of information. It also explains the panel data methodology.

Research Design

Any project needs a basic plan of action or a set of clearly defined steps to complete the objectives quickly and effectively without deviating from the original goal. In other words, we may say that the process is meticulously translated into a blueprint known as the research design from where we are and where we want to go. This study made extensive use of secondary data after data cleaning and reconciliation.

Data and sample selection

The study is based on secondary data. The empirical analysis in this study is based on bank-level data collected over the period of 2011 to 2021(including all revisions until September 30, 2021). The filtered sample size provided us with the data of 12 public-sector Indian banks for which complete information with regard to selected variables was available.

The total time frame is 10 years. The data relating to the selected variables have been taken from the Prowess database of the Centre for Monitoring the Indian Economy (CMIE) and the Database of the Indian Economy by the RBI. After filling out the initial RTI

3.2 VARIABLES AND THEIR OPERATIONALIZATION

The critical measure captured in the current study relates to bank performance in terms of interest earnings, non-interest earnings, net interest income, operating profit, net profit (net PAT), total earnings, fixed assets, total assets, and liquidity in terms of deposits. The primary independent and dependent factors include:

Dependent Variable: A dependent variable is one whose values depend on the independent variable. The dependent variable is calculated either through experimentation or estimated through a mathematical equation. The dependent variable is also called "the outcome variable." Following are the dependent variables: Total Number of ATMs (Number of ATMs on-site and Number of ATMs off-site); Number of POS terminals online; Number of outstanding cards: debit cards; credit cards; Number of Transactions: Credit Card: Actual at ATM; Number of Transactions: Debit Card: Actual at ATM; Number of Transactions: Credit Card: Actual at POS; Number of Transactions: Debit Card: Actual at POS

Independent Variables: The independent variable is the causal variable. The value of an independent variable is independent of the other variables under study. Changes in the values of the dependent variable depend on changes in the independent variable. The following are the independent variables: Interest Earnings; Non-Interest Earnings; Net Interest Income; Operating Profit; Net Profit (Net PAT); Total Earnings; Fixed Assets; Total Assets

Control Variables: A control variable is the variable whose effect is kept constant or limited in the research study. The impact of control is not of any interest to the variables under study' but is controlled as it can influence the expected outcomes. Following are the control variables: Deposits, No. of Employees, Log of Age, Size of Bank, Measured by Total Assets.

Dummy Variables

Regression analysis frequently employs dummy variables to represent categorical variables with more than two categories, such as occupation or degree of education. To represent each level of the variable in this situation, numerous dummy variables would be constructed, and only one dummy variable would be assigned a value of 1 for each observation. Because categorical variables are non-numeric in nature, it would be challenging to incorporate them in our analysis without the use of dummy variables. They can also assist us in adjusting for confounding variables and enhancing the reliability of our findings.

In order to understand the differentiation in context of the impact of information technology adoptions on bank earnings, the dummy variable method has been used for different time periods and banks. The method is usually applied to judge the impact of nominal or categorical variables (Leigh, 1995; Chen et al., 2017). In the current study, the different banks, years, and medians are considered different categories. Thus, these dummies are measured to identify the impact of this adoption of information technology; specifically, three different dummies have been considered. These dummies are explained next.

Dummy 1: It takes the value "1" if a bank is different and "0" otherwise.

Dummy 2: It takes the value "1" if a time period, i.e., a year, differs and "0" otherwise.

Dummy 3: It takes the value "1" if a median is different and "0" otherwise.

3.3 DETAILS OF PUBLIC SECTOR BANKS UNDER CONSIDERATION

1. Bank of Baroda (BOB) is a Vadodara-based nationalised banking and financial services firm in India. It is the second-largest PSB in India regarding market cap and business after SBI, with 132 million customers, a real business of US$218 billion, and a global presence of 100 overseas offices. 2019 data shows it is ranked 1145 on the Forbes Global 2000 list. On July 20, 1908, Sayajirao Gaekwad III, the Maharaja of Baroda, established the Bank in Gujarat's princely state of Baroda. On July 19, 1969, the Indian government declared the Bank and 13 other significant commercial banks in India to be profit-making public sector entities (PSUs).

2.The Bank of India (BOI) is a nationalised bank in India. It is owned by the Ministry of Finance, Government of India, and has its main office in Mumbai's Bandra Kurla Complex. It was established in 1906, and government ownership began with nationalisation in 1969. BOI is a founding member of SWIFT (Society for Worldwide Interbank Financial Telecommunications), which makes it easier to provide communication and processing services for money. As of March 31, 2021, the Bank of India's overall business was worth $103 billion (130 billion US dollars). It has 5,108 branches and 5,551 ATMs worldwide (including 24 overseas extensions).

3.The Bank of Maharashtra with its headquarters in Pune, is a public sector bank in India. By March 2022, the bank had 2022 branches around the nation and 29 million customers. In the state of Maharashtra, it boasts the broadest network of branches of any nationalised bank. At the close of business on December 31, 2021, the bank's total revenue exceeded 3,15,620 crore. The Bank of Maharashtra was prepared to deliver a 50% profit this Diwali despite the Reserve Bank of India raising the repo rate by 0.5%. V.G. Kale and D.K. Sathe formed the bank in Pune. The bank was officially established on September 16, 1935, with a US$1 million authorised capital, and went into business on February 8, 1936. It gave birth to numerous industrial houses and supported small businesses financially. In 1969, the bank was nationalised. On December 2nd, 2018, A. S. Rajeev took over as managing director and CEO of the bank. On March 10th, 2021, A.B. Vijayakumar began serving as Executive Director. On December 31, 2021, Asheesh Pandey began serving as the Executive Director. Allen C. Pereira, a former chairman of the Bank of Maharashtra, was in charge of scaling up and opening a number of branches in India's North Eastern Zones, where the bank had no presence.

4.Canara Bank (CB) is India's fourth-largest nationalised bank. The Indian government's Ministry of Finance is the owner of it. Its main office is in Bangalore. Ammembal Subba Rao Pai founded the bank in Mangalore in 1906. It also has locations in London, Hong Kong, Dubai, and New York. As of June 2022, Canara Bank services over 10.4 crore customers through a network of 9,732 branches and 12,201 ATMs and recyclers spread across all Indian states and Union Territories.

5.The Central Bank of India (CBI) is an Indian nationalised bank. It is under the ownership of the Ministry of Finance, Government of India, and is one of the oldest and largest nationalised

commercial banks in India. It is based in Mumbai, the financial capital of India and the capital city of the state of Maharashtra. The first Indian commercial bank that was entirely owned and run by Indians was the Central Bank of India, which was founded in 1911. The bank's founding father, Sir Sorabji Pochkhanawala, had a dream that was finally realised with the foundation of the bank. The first chairman of a truly "Swadeshi Bank" was Sir Pherozesha Mehta. A country has only one central bank, and in India, we call it the Reserve Bank of India (RBI). The RBI issues rules and regulations for each bank to monitor the activities of all banks in the country.

6.Indian Bank: Indian Bank is a public sector bank with its main offices in Chennai. It was founded in 1907. With 5,721 locations, 5,428 ATMs, and 39,734 workers, it provides service to over 100 million consumers. As of the end of March 2022, the bank's total business had reached 1,010,000 crore (US$130 billion). Information systems and security procedures at the bank have been certified as meeting ISO 27001:2013 requirements. It has overseas locations in Singapore and Colombo, as well as foreign currency banking units in Jaffna and Colombo. It has 227 foreign correspondent banks spread throughout 75 nations. The bank has been owned by the Indian government since 1978. According to the announcement made by Nirmala Sitharaman, the Indian Finance Minister, on August 30, 2019, Allahabad Bank and Indian Bank will merge on April 1, 2020, making Indian Bank the seventh-largest bank in the nation.

7. Indian Overseas Bank: Located in Chennai, Indian Overseas Bank (IOB) is a public sector bank in India. It has a representative office, roughly 3,214 domestic branches, and about 4 foreign branches. With the dual goals of specializing in foreign exchange commerce and overseas banking, it was founded in February 1937 by M. Ct. M. Chidambaram Chettyar and has since set numerous milestones in the Indian banking industry. IOB was one of the 14 significant banks that the Indian government took control of during nationalisation. The Ministry of Electronics and Information Technology presented IOB with the Degidhan Award 2020–21 on December 5, 2021, for having the second-highest percentage of digital payment transactions among public sector banks. IOB's overall business as of March 31, 2022, was 417,960 crores (US$52 billion). The Indian International Bank was founded in 1937 by M. Ct. M. Chidambaram Chettyar to promote foreign exchange and overseas banking activities. Three branches of IOB opened simultaneously: one each in Karaikudi, Madras, and Rangoon (Yangon). It opened branches as soon as possible in Penang, Kuala Lumpur (1937 or 1938), and Singapore (1937 or 1941). The Nattukottai Chettiars were a

merchant class that, at the time, had branches in Ceylon (Sri Lanka), Burma (Myanmar), Malaya, Singapore, Java, Sumatra, and Saigon. They originated in Chettinad, in the Tamil Nadu state. As a result, IOB began as a foreign currency and international banking specialist. IOB lost its branches in Singapore, Penang, and Rangoon as a result of the war, while the branch in Singapore resumed operations in 1942 under Japanese management. IOB had an initial public offering (IPO) in 2000, reducing the government's ownership stake in the bank to 75%. IOB purchased the Mumbai-based Adarsha Janata Sahakari Bank in 2001, granting it a Mumbai branch. Then, in 2009, IOB acquired Shree Suvarna Sahakari Bank, which has its headquarters in Pune and was formed in 1969. Since 2006, Shree Suvarna Sahakari Bank has been under administration. In addition to two in Mumbai and one in Shirpur, it had nine branches in Pune. A little over 100 people were thought to be employed in all. On August 29, 2003, IOB inaugurated an extension counter at the New Kathiresan Temple complex in Bambalapitiya, Sri Lanka. IOB established a representative office in Guangzhou, China, in 2005. IOB created a new representative office the next year, this one in Kuala Lumpur. In Dubai, United Arab Emirates, IOB launched a representative office in 2009. International expansion recommenced in the new millennium. IOB acquired Bharat Overseas Bank in 2007. Then, in 2009, IOB purchased the 1969-founded Shree Suvarna Sahakari Bank of Pune, which has nine branches in Pune, two in Mumbai, and one in Shripur.

8.Punjab & Sind Bank: Indian public sector bank Punjab & Sind Bank has its main office in New Delhi. The bank had 1526 branches as of March 31, 2020, with 635 of those located in Punjab. There were also 25 zonal offices spread out across India. To serve colonial India's then-Sind and Punjab regions, Bhai Vir Singh, Sir Sunder Singh Majitha, and Sardar Tarlochan Singh founded the bank on June 24 in Amritsar. In the second round of nationalisation, which began on April 15, 1980, the Indian government nationalised six banks, including Punjab & Sind Bank. The government nationalised the top 14 banks in 1969, starting the first wave. The Punjab and Sind Bank opened a branch in London in the 1960s. Following Punjab & Sind Bank's involvement in the Sethia scandal in 1987, the Reserve Bank of India ordered the Bank of Baroda to purchase the London branch of the bank. Since 2004, the bank has grown by more than 40% annually, and its IPO received more than 50 times the amount of interest expected. On July 16, 2019, Punjab & Sind Bank announced that it had discovered a scam by Bhushan Power & Steel worth 238 crore (US$30 million).

9.Punjab National Bank (PNB) It is a public sector bank with its headquarters in Delhi and is owned by the Indian government's Ministry of Finance. The bank was established in May 1894 and is India's second-largest government-owned bank in terms of network size and business volume. The bank has over 180 million customers, 12,248 branches, and 13,000+ ATMs. PNB has seven branches of its UK banking affiliate, PNB International Bank, and locations in Kabul, Dubai, Kowloon, Hong Kong, and Kowloon. Almaty (Kazakhstan), Dubai (United Arab Emirates), Shanghai (China), Oslo (Norway), and Sydney are its representative offices in Australia. It holds five locations and 51% of the Druk PNB Bank in Bhutan. PNB has a 20% stake in Everest Bank in Nepal, which has 50 locations. PNB also holds a 41.64% stake in Kazakhstan's four-branch JSC (SB) PNB Bank.

10.State Bank of India (SBI) The Bank is the oldest commercial bank in the Indian subcontinent and descends from the Bank of Calcutta, established in 1806 through the Imperial Bank of India. The Bank of Madras combined with the Bank of Calcutta and the Bank of Bombay, the other two presidential banks in British India, to form the Imperial Bank of India, which later changed its name to the State Bank of India in 1955. Over time, the bank has been chiefly founded through the merger and acquisition of over twenty banks. In 1955, the Indian government acquired control of the Imperial Bank of India, renaming it the State Bank of India, with the Reserve Bank of India owning a 60% interest. It is a statutory public sector bank and international corporation headquartered in Mumbai, Maharashtra. The only Indian bank on the Fortune Global 500 list of the biggest companies in the world in 2020 SBI is the 43rd largest bank in the world and is rated 221st. It is a public-sector giant bank in India, accounting for 25% of the entire loan and deposit market and 23% of the need for assets. With approximately 250,000 workers, it ranks as India's fifth-largest employer. State Bank of India crossed the $5 trillion market capitalization mark on the Indian stock exchanges on September 14, 2022, becoming the seventh Indian firm overall and third lender (after HDFC Bank and ICICI Bank).

11.UCO Bank (UCO), previously known as United Commercial Bank, was founded in Kolkata in 1943 and is one of India's nationalised banks. The Indian government's Ministry of Finance is its owner. Its entire revenue in FY 2020–21 was 3.24 lakh crore. It is listed at number 80 on the Fortune India 500 list, according to 2020 statistics. In the 2018 Forbes Global 2000 list, UCO Bank came in at number 1948. The bank had 49 zonal offices and more than 4,000 service units as of

March 2017. Additionally, it has locations in Singapore and Hong Kong. In Kolkata, on BTM Sarani, is where UCO Bank is headquartered.

12.Union Bank of India (UBI) is an Indian government-owned bank with over 120 million members and US$106 billion in annual revenue, known as Union Bank or UBI. The combined organisation became one of the largest PSU banks in the branch network with the combination of Corporation Bank and Andhra Bank, which went into effect on April 1, 2020. There are currently about 9500 branches. Four are in Sydney, Dubai, Antwerp, and Hong Kong. Additionally, UBI has representative offices in Abu Dhabi, Beijing, and Shanghai. Union Bank of India, UBI's wholly owned subsidiary, conducts business in the United Kingdom (UK). The bank employs more than 77,000 people and serves more than 120 million customers through a network of more than 9300 domestic branches, 11800 ATMs, and 8216 business correspondent points.

3.4 DATA COLLECTION

Source of data

For any study, it is important to arrange credible data. In the current study, an initial RTI was filled out with the Ministry of Finance to procure reliable data related to public sector banks. The reply suggested the various databases from which data can be procured. These sources are DBIE, Prowess Database, CMIE, etc.

Type of Data

In the current study, secondary data is used for the analysis.

Pre-processing of data

The data fetched from various secondary sources cannot be used directly for the purpose of analysis. All the figures were available on a monthly basis. Data compiled on an annual basis along with the proper formatting so that it will be ready for statistical analysis. The data for variables not required is removed. All data is arranged in vertical order. In addition to that, all revisions by the RBI (till September 2021) were incorporated.

Type of Analysis

The current study uses the panel data analysis technique.

Level of Study

This is a bank-level study, and all public sector banks are included (data for all branches is collected and complied annually).

Time Frame

For the current study, data is taken from 2011- 2021 (till September 30, 2021 (all revisions). This timeline is considered because after this time period, merging of Public sector Banks has been implemented by RBI and banks have entered into consolidation phase with respect to all software, accounts, customer Ids, UPI, Cards etc. Hence post-merger data is not available for the study. So the data for current twelve Public sector banks (till 30th September 2021) is consideration for the study. Further, the time period also includes COVID-19 pandemic but comparative analysis of Pre COVID and Post COVID periods is out of the scope of this current study because data taken is averaged data for ten years.

Type of Study

It is the study of the universe. All public sector banks are taken into consideration. Hence, we can say it is the study of population.

Software used

This study involved extensive use of EViews12 and MS Excel 2019

3.5 ABOUT PANEL DATA ANALYSIS

This research uses panel data analysis as the main econometric method, and **Eviews statistical software** has been used in order to expedite the analysis of this study. The term "panel or longitudinal data" in this study refers to the pool of observations on a cross-section of banks, specifically over a 10-year time period. This data can be obtained by investigating a number of specific banks and following them over time. Therefore, a panel consists of two dimensions: one for cross-sectional units and the other for time series. These data sets provide rich sources of information about time series data. A substantial increase in the availability of panel data has been observed in recent years, along with a significant increase in the use of relevant techniques for its analysis.

Baltagi (2008) has briefly summarized the benefits of panel data models as follows:

1. Individual heterogeneity can be controlled using panel data.
2. Panel data provide more accurate information, greater variability, greater degrees of freedom, and greater effectiveness.
3. To assist in better understanding the dynamics of adjustment, panel data are used.
4. To compare pure cross-sectional or pure time-series data, panel data is advanced enough to identify and compute its effects;
5. For exclusive comparison of cross-sectional or time-series data, panel data models enable us to create and evaluate more intricate behavioral models;
6. Panel data are typically collected on micro units, eliminating biases brought on by aggregation over organisations or individuals.

Modelling in panel data require certain complex stochastic specification. It is essential that we choose appropriate estimators to obtain consistent parameter estimates in the panel data-model. The general approach for estimating the panel models has been developed inseveral stages in the literature.

There are three main models that can be used to estimate the regression equation in panel data - pooled model, random effects (RE) model and fixed effects (FE) model. In order to decide which model to choose, there is a need to consider the properties of the data as well as the results of tests.

Pooled regression model is one sort of model that implies both intercepts and slopes in the model, and has constant coefficients. Researchers can pool all the data for this model and run an OLS regression model without making any assumptions about individual differences. The FE model allows the intercept to vary for each firm while assuming that the slope coefficient are constant across firms. This way, it takes into account the uniqueness of each firm or cross section unit included in the sample. Only when it is critical to examine the impact of factors that change over time is the FE model used. An entity's predictor and outcome variables are examined using a FE model (country, person, company, etc.).

Each thing has unique qualities that might or might not have an impact on the predictor variables (e.g. being a male or female could influence the opinion towards a certain issue; or the political system of a particular country could have some effect on trade or GDP; or the business practices of a company may influence its stock price, etc.).

When employing the FE model, it is presumptively necessary to account for the possibility that an aspect of the individual may influence or bias the predictor or outcome variables. This justifies the presumption that the error term for the entity and the predictor factors are correlated. To determine the overall impact of the predictors on the outcome variable, the FE model eliminates the impact of those time-invariant traits.

However, in the RE model, the individual effects are distributed at random across the cross-sectional units, and the regression model is provided with an intercept term that acts as an overall constant term in order to capture the individual effects. In the RE model, the error term for the entity is assumed not to be correlated with the predictors, allowing time-invariant variables to function as explanatory variables.

In a RE model, the predictor variables may or may not be impacted by the specifications for specific attributes. This raises the issue of omitted variable bias in the model because some variables could not be available. Beyond the sample utilised in the model, the RE model enables for generalising the inferences. The reasoning for the RE model is because, unlike the FE model, it assumes that variation between entities is random and unrelated to any predictors or independent variables **(Greene, 2003)**.

If the sample size is focused on a certain group of N enterprises, then the FE model is a suitable specification (e.g. when the sample comprises all the stocks traded on a particular exchange). If the sample size is chosen at random from a large population, the RE model is a suitable specification **(Baltagi, 2008)**.

By using a double subscript on its variables, the panel data analysis notation distinguishes this approach from time-series or cross-sectional analysis. The first sub-script indicates the cross-sectional unit, such as a company, a sector, a country, etc., while the second sub-script indicates the period. The form of regression serves as the fundamental structure for a panel data regression as given in equation.

$$\mathbf{Y_{it} = X_{it}\beta + \varepsilon_{it}}$$

$$[\mathbf{i = 1 \ldots \ldots N, \text{ and } t = 1 \ldots \ldots T}]$$

Eq. 1

Where Y_{it} is the observation on the dependent variable for cross-section unit i Time t

X is the vector of the explanatory variables for unit i at time t.

β is random variable that has value for each drawn from probability distribution

The pooled model, which is based on the simplest set of presumptions that behaviour is constant across all individuals throughout time and that all data are homogenous, is the most basic estimating technique. However, the majority of panel data applications use a one-way error component model that only takes into account individual effects when the disturbance is present.

$$\mathbf{\varepsilon_{it} = \mu_i + \vartheta_{it}}$$

Eq. 2

Where, μ_i denotes the unobservable individual specific effect

ϑ_{it}, denotes the remainder disturbance.

The two components are assumed to be independent of each other, and the first component varies across individuals but is constant across time.

For example, to estimate the relationship between the profitability and the CSR expenditure, the used static panel model is given as:

$$\text{PROF}_{it} = \alpha + \beta_1 * \text{SOCIAL1}_{it} + \beta_2 * \text{SOCIAL1}^2_{it} + \beta_3 * \text{MKTG}_{it} + \beta_4 * \text{ECI}_{it} + \beta_5 * \text{LEVER}_{it} + \beta_6 * \text{INVEST}_{it} + \beta_7 * \text{TANG}_{it} + \varepsilon_{it}$$

Eq. 3

Here i represents the companies; t represents the time; β_0 stands for model constant; β_i states the co-efficient of independent variables and ε_{it} represents the error term, which is assumed to have a normal distribution.

There is a probability that the error term won't adhere to the conventional hypotheses of homogeneity and absence of autocorrelation. As a result, the present thesis has used robust standard errors. Robust standard errors come in many shapes and sizes. The White-based diagonal robust standard errors have been used in the current investigation. The main benefit of using these robust standard errors is that, even in the presence of heteroscedasticity and autocorrelation, they provide accurate results for both cross-section and period estimations. (Hansen, 2007; Stock and Watson, 2008).

Fixed Effect Model – Panel data

The one-way fixed effects model also takes into account unobservable effects that are time- or person-specific. These outcomes include ignored factors. assumes that the observed traits are associated with individual-specific effects, xit. Pooled OLS estimates for data generated by this process will be inconsistent.

As an example, let's consider the one-way fixed effects model with individual-specific effects where the unobservable component, δz_i acts like an individual-specific intercept:

$$y_{it} = \beta x_{it} + \alpha_i + \epsilon_{it}$$

Eq-4

Where Y_{it} is the observation on the dependent variable for cross-section unit i Time t

β is random variable that has value for each drawn from probability distribution.

The intercept term, α_i, varies across individuals but is constant across time.

This term is composed of the constant intercept term, μ_i, and the individual-specific error terms, Υ_i.

 The key feature of the fixed effects model is that Υ_i has a true, but unobservable, effect that must be estimated. More importantly, if we estimate β using pooled OLS and fail to appropriately account for Υ_i, the estimates will be inconsistent and biased.

The fixed effects model requires the estimation of the model parameter β and individual α_i for each of the N groups in the panel. This is generally achieved using one of three estimation techniques:

1.Within-group estimation.

2. First differences estimation.

3. Least squares dummy variable (LSDV) estimation.

The first two of these techniques focuses on eliminating the individual effects before estimation. The LSDV method directly incorporates these effects using dummy variables.

The two-way fixed effects model: Assumes that both and are unobservable, estimated fixed effects. For information produced by this model:

Pooled OLS estimates, which ignore and , will be biased and inconsistent.

One-way fixed effects estimates, which ignore, will be biased.

Like the one-way fixed effects model, this model could be estimated by including dummy variables. However, in the two-way fixed effects model dummy variables must be included for both the time periods and the groups.

Ordinary least squares estimation is typically too computationally challenging due to the two-way fixed effects model's inclusion of a large number of dummy variables. Instead, a within-group estimator is used to estimate the two-way fixed effects model, which eliminates variation from both the groups and the time periods.

3.6 OBJECTIVE OF THE STUDY

The following objectives have been defined for the study.

Objective -1

To study the variation in Deposits among different Public Sector banks in India. This objective is further divided into following five sub objectives

   a) To study the variation in Average Deposits.

   b) To study the variation in Deposits / Total Assets

   c) To study the variation in Deposits /Total Assets Growth

   d) To study the variation in Deposits/ Branch

   e) To study the variation in Deposits / Branch, Growth

Objective -2

To study the variation in Profits among different Public sector banks in India –This objective is further divided into following eleven sub objectives

   a) To study the variation in Operating Profit per branch

   b) To study the variation in Growth of Operating profits per branch

   c) To study the variation in Growth of Operating profits

   d) To study the variation in Operating profits to total earnings

   e) To study the variation in Growth of operating profit to total earning

   f) To study the variation in Net profit per branch

   g) To study the variation in Growth of Net profit per branch

   h) To study the variation in Net Profits to total assets

i) To study the variation in Growth of Net Profits to total assets

j) To study the variation in Net Profits to total Earning

k) To study the variation in Growth of Net Profits to Total Earning

Objective -3

a) To study the impact/effect of Information Technology adoption on Interest earning.

b) To study the impact/effect of Information Technology adoption on Non Interest earning

3.7 RESEARCH HYPOTHESES

Research hypotheses – Deposits

Following hypotheses have been framed for the above objectives

1.H0 (D): There is no significant **variation in Deposits** among different Public sector banks in   India.

H1 (D): There is significant **variation in Deposits** among different Public sector banks in India.

2.H0 (D): There is no significant **variation in Deposits / Total Assets** among different Public sector banks in   India.

H1 (D): There is significant **variation in Deposits / Total Assets among** different Public sector   banks in India.

3.H0 (D): There is no significant variation in **Deposits /Total Assets Growth** among different   Public sector banks in India.

H1 (D): There is significant variation in **Deposits /Total Assets Growth** among different Public sector banks in India.

4.H0 (D): There is no significant variation in **Deposits/ Branch** among different Public sector banks in India.

H1 (D): There is significant variation in **Deposits/ Branch** among different Public sector banks in India.

5. H0 (D): There is no significant variation in **Deposits / Branch, Growth** among different Public sector banks in India.

H1 (D): There is significant variation in **Deposits / Branch, Growth** among different Public sector banks in India.

Research hypotheses – Profits

1.H0(P): There is no significant variation in **Operating Profit per branch** among different Public sector banks in India.

H1(P): There is significant variation in **Operating Profit per branch** among different Public sector banks in   India.

2.H0(P): There is no significant variation in **Growth of Operating profits per branch** among different Public sector banks in India.

H1(P): There is significant variation in **Growth of Operating profits per branch** among different Public sector banks in India.

3.H0(P): There is no significant variation in **Growth of Operating profits** among different Public sector banks in India.

H1(P): There is significant variation in **Growth of Operating profits** among different Public sector banks in India.

4.H0(P): There is no significant variation in **Operating profits to total earnings** among different Public sector banks in India.

 H1(P): There is significant variation in **Operating profits to total earnings** among different Public sector banks in India.

5 .H0(P): There is no significant variation in **Growth of operating profit to total earning** among different Public sector banks in India.

H1(P): There is significant variation in **Growth of operating profit to total earning** among different Public sector banks in India.

6.H0(P): There is no significant variation in **Net profit per branch** among different Public sector banks in India.

H1(P): There is significant variation in **Net profit per branch** among different Public sector banks in India.

7.H0(P): There is no significant variation in **Growth of Net profit per branch** among different Public sector banks in India.

H1(P) There is significant variation in **Growth of Net profit per branch** among different Public sector banks in India.

8.H0(P): There is no significant variation in **Net Profits to total assets** among different Public sector banks in India.

 H1(P): There is significant variation in **Net Profits to total assets** among different Public sector banks in India.

9.H0(P): There is no significant variation in **Growth of Net Profits to total assets** among different Public sector banks in India.

 H1(P): There is significant variation in **Growth of Net Profits to total assets** among different Public sector banks in India.

10.H0(P): There is no significant variation in **Net Profits to total Earning** among different Public sector banks in India.

H1(P): There is significant variation **Net Profits to total Earning** among different Public sector banks in India.

11.H0(P): There is no significant variation in **Growth of Net Profits to Total Earning** among different Public sector banks in India.

H1(P)There is significant variation in **Growth of Net Profits to Total Earning** among different Public sector banks in India.

Research hypotheses   – Interest Earnings

1. H0 (IE): **Information technology adoption has no significant effect on** Bank Earnings Interest Earning**.**

H 1(IE): **Information technology adoption has significant effect** on Bank Earnings Interest Earning.

Research hypothesis -Non Interest Earning

1.H0 (NIE): **Information technology adoption has no significant effect on** Non Interest Earning**.**

H 1(NIE): **Information technology adoption has significant effect on** Non Interest Earning

For the first and second objectives, a pooled ordinary least square is used.

1. Intercept behaves in the same manner for all public sector banks as the majority of stake is in the hands of the Government of India.
2. In this analysis, the same country, India, is used.
3. All banks need to follow the strict guidelines of the RBI.

For the third objective, a fixed-effect model is used.

Suggested statistically by the Hausman Test. The F test is used to test the validity of a model. All models are significant and qualify the use of the fixed effect model as the P value of F statistics is less than .10 in all cases.

CHAPTER SUMMARY

This chapter explains the systematic process of collecting and analysing the data. This includes the collection of data by filing an RTI and using other credible and established databases. This chapter also suggests the type of data used for the study. It also explains the essential characteristics of panel data analysis. In this chapter, all objectives and hypotheses are well defined for the purpose of further testing and interpretation. It also explains the various tests used to test hypotheses with proper justification and validation.

CHAPTER4

Results and Discussions

4.1 INTRODUCTION

The current chapter reports the empirical results concerning the Comparative study of Performance and Technology Adoption by Public sector banks in India. Analyzing the role of Information technology adoption is very important because these adoptions are generally discretionary in nature and they signify the commitment of the bank towards innovative use of ITC (Chen et al., 2017). The chapter is organized as follows. List of Public sector banks with codes used in the study, Basic Descriptive Statistics, Test of Stationarity   Reports the results pertaining to variation in Deposits among different Public sector banks in India. Reports the results pertaining to the variation in Profits among different Public sector banks in India. Reports the results pertaining to impact of income generated by information technology adoption on Bank earnings.

Table 12 List of Public sector banks along with codes used in study

S.No.	Name of Bank	Code
1	BANK OF BARODA	B01
2	BANK OF INDIA	B02
3	BANK OF MAHARASHTRA	B03
4	CANARA BANK	B04
5	CENTRAL BANK OF INDIA	B05
6	INDIAN BANK	B06
7	INDIAN OVERSEAS BANK	B07
8	PUNJAB AND SIND BANK	B08
9	PUNJAB NATIONAL BANK	B09
10	STATE BANK OF INDIA	B10
11	UCO BANK	B11
12	UNION BANK OF INDIA	B12

Source: Author's own

Refer: Appendix A

4.2 PRE-PROCESSING OF DATA

Pre-processing of data involves transforming raw data into a format suitable for analysis and drawing conclusions. Techniques used in data pre-processing include data cleaning, integration, transformation, feature selection and extraction, data encoding, handling imbalanced data, and data discretization. The selection of specific techniques depends on the nature of the data, the analysis goals, and the requirements of the particular problem at hand. In the current study, data is extracted from DBIE, Prowess Database, CMIE, *etc.* All data was filled out and arranged on a yearly basis. After the yearly conversion, the data is arranged vertically and horizontally for use in panel analysis. Variables not used in the study are removed.

Before proceeding with the actual analysis, a descriptive analysis along with a check of stationarity is performed.

Descriptive analysis:

Secondary data collected in a research project can be analysed quantitatively using statistical tools in two different ways. Descriptive analysis refers to statistically describing, aggregating, and presenting the constructs of interest or associations between these constructs. Inferential analysis refers to the statistical testing of hypotheses (theory testing). The table 13 represents the descriptive analysis of the data.

Table-13- Descriptive analysis of Data

Details	Mean	Median	Maximum	Minimum
ATM_OFF_BR	0.45	0.34	1.66	0.02
ATM_ON_BR	0.74	0.74	1.23	0.10
ATM_T_CC_BR	1.41	0.67	8.46	0.00
ATM_T_DC_BR	4151.29	3280.88	18913.25	67.86
D_BR	81.97	76.38	165.58	22.07
D_BR_G	0.03	0.04	0.18	-0.79
D_G	0.09	0.08	1.07	-0.54
D_TA	0.84	0.85	0.91	0.19
D_TA_G	0.00	0.00	0.06	-0.77
EMP_BR	9.06	9.00	15.34	4.27

FA_BR	0.95	0.91	2.07	0.34
FA_BR_G	0.10	-0.02	2.43	-0.29
I_BR	6.99	6.94	11.93	4.56
I_BR_G	0.00	0.00	0.22	-0.15
I_G	0.07	0.05	0.85	-0.16
I_TE	0.89	0.90	0.95	0.75
I_TE_G	-0.01	0.00	0.05	-0.10
LNAGE	4.56	4.66	4.84	4.04
N_ATM_BR	1.19	1.11	2.82	0.11
N_CC_BR	40.37	21.54	531.71	0.00
N_DC_BR	4719.62	4183.58	14338.45	73.45
N_POS_BR	4.33	1.55	33.61	0.00
NI_BR	0.89	0.85	2.04	0.29
NI_BR_G	0.10	0.04	0.90	-0.47
NI_G	0.17	0.11	1.15	-0.47
NI_TE	0.11	0.10	0.25	0.05
NI_TE_G	0.09	0.04	0.83	-0.35
NII_BR	2.15	2.07	4.98	1.02
NII_BR_G	0.03	0.02	0.38	-0.22
NII_G	0.10	0.07	1.16	-0.21
NII_TE	0.27	0.27	0.36	0.19
NII_TE_G	0.02	0.00	0.32	-0.16
OPP_BR	1.53	1.55	3.22	0.44
OPP_BR_G	0.05	0.00	1.07	-0.54
OPP_G	0.12	0.07	1.14	-0.54
OPP_TE	0.19	0.19	0.30	0.08
OPP_TE_G	0.04	0.00	0.98	-0.44
PAT_BR	-0.05	0.19	1.29	-2.62
PAT_BR_G	-0.55	-0.29	15.72	-14.62
PAT_G	-0.50	-0.24	15.80	-14.63
PAT_TA	0.00	0.00	0.01	-0.03
PAT_TA_G	-0.57	-0.29	14.65	-14.77
PAT_TE	-0.01	0.02	0.15	-0.41
PAT_TE_G	-0.56	-0.31	14.53	-15.14
POS_T_CC_BR	89.52	27.14	1679.05	0.00
POS_T_DC_BR	1026.88	627.90	5332.30	0.00
TA_BR	97.58	92.06	203.95	57.31
TA_BR_G	0.03	0.03	0.18	-0.13
TE_BR	7.88	7.71	13.88	4.94
TE_BR_G	0.01	0.02	0.23	-0.18

TE_G	0.08	0.06	0.89	-0.18
TE_TA	0.08	0.08	0.10	0.07
TE_TA_G	-0.02	-0.02	0.15	-0.19

Source: An Analysis of Data in EView12

Refer: Appendix A

Table -14 - Values of Standard Deviation, Skewness and Kurtosis

Variables	Std.Dev	Skewness	Kurtosis
ATM_OFF_BR	0.341262	1.383612	4.996839
ATM_ON_BR	0.252115	-0.265131	2.791156
ATM_T_CC_BR	1.881359	1.886482	6.056358
ATM_T_DC_BR	3515.946	2.022124	7.220448
D_BR	21.78789	0.794352	4.252917
D_BR_G	0.102207	-4.824707	39.59857
D_G	0.156754	2.322276	19.19901
D_TA	0.066870	-7.822629	76.72112
D_TA_G	0.077859	-8.713434	85.79335

Source: An Analysis of Data in EViews 12

Variables	Std.Dev	Skewness	Kurtosis
EMP_BR	1.835703	0.431019	3.696724
FA_BR	0.359948	0.834794	3.454966
FA_BR_G	0.353751	3.940431	22.05244
I_BR	1.421093	0.624128	3.982254
I_BR_G	0.070640	-0.053488	3.040473
I_G	0.153080	2.794454	13.78414
I_TE	0.034881	-0.781248	4.108127
I_TE_G	0.025483	-0.744901	4.192006
LNAGE	0.205014	-0.869682	2.616073
N_ATM_BR	0.524679	0.839865	4.056283
N_CC_BR	78.81187	4.441741	24.39093
N_DC_BR	2955.442	1.056314	3.927810
N_POS_BR	6.978966	2.524725	9.471567
NI_BR	0.379152	0.744714	3.428668
NI_BR_G	0.233251	1.035939	4.387850
NI_G	0.272003	1.108699	4.664750
NI_TE	0.034881	0.781248	4.108127
NI_TE_G	0.213450	0.927758	3.823258
NII_BR	0.655661	1.224435	5.753179
NII_BR_G	0.104897	0.396131	3.600816
NII_G	0.201775	3.076866	15.06909
NII_TE	0.039179	0.060439	2.315215
NII_TE_G	0.096415	0.789227	3.472601
OPP_BR	0.570311	0.212258	2.756104
OPP_BR_G	0.242179	1.079857	5.620445
OPP_G	0.284044	1.241939	5.655508
OPP_TE	0.047298	-0.209106	2.352233
OPP_TE_G	0.218398	1.203561	5.663402
PAT_BR	0.763167	-1.105508	4.057756

PAT_BR_G	2.956324	-0.156781	16.40688
PAT_G	3.023275	-0.143829	15.35161
PAT_TA	0.008598	-1.374078	-1.374078
PAT_TA_G	2.857288	-0.373143	16.09990
PAT_TE	0.108520	-1.496614	5.240564
PAT_TE_G	2.930361	-0.577428	15.38414
POS_T_CC_BR	245.0045	4.815641	26.99106
POS_T_DC_BR	1057.537	1.660245	6.408811
TA_BR	26.36771	1.069009	4.514146
TA_BR_G	0.063401	-0.225416	2.738111
TE_BR	1.691215	0.775800	4.350881
TE_BR_G	0.068086	-0.074371	3.423163
TE_G	0.152347	2.978864	14.90321
TE_TA	0.008052	-0.100511	1.795811
TE_TA_G	0.053210	-0.040957	4.161889

Source: An Analysis of Data in EViews 12

Refer: Appendix A

 4.3 ANALYSIS OF LOG DIFFERENCED AND GRAPHICAL PRESENTATION OF SKEWNESS

One of the most often used transformations in biological and psychological research is the log transformation, which is frequently employed to deal with skewed data. The log transformation is a common statistical software tool that is included in SAS, Splus, SPSS, and E views. The variables are shown graphically as logarithmic differential on the graphs with the help of Eviews. Presentation is as follows.

Log Differenced ATM_OFF
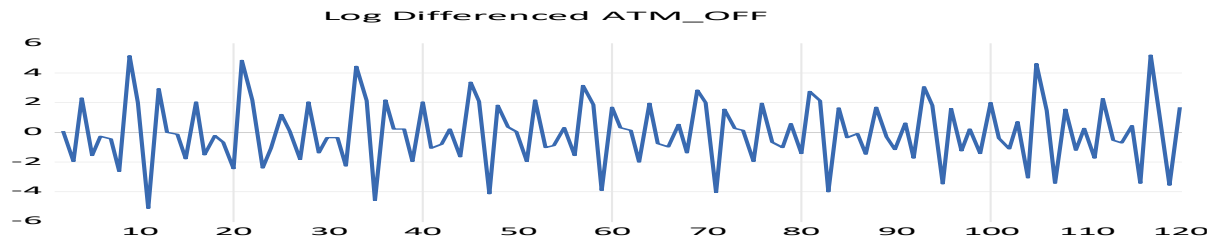
Source: An Analysis of data in EViews 12

Figure 7 Log Differenced ATM_OFF

Log Differenced N_DC_BR
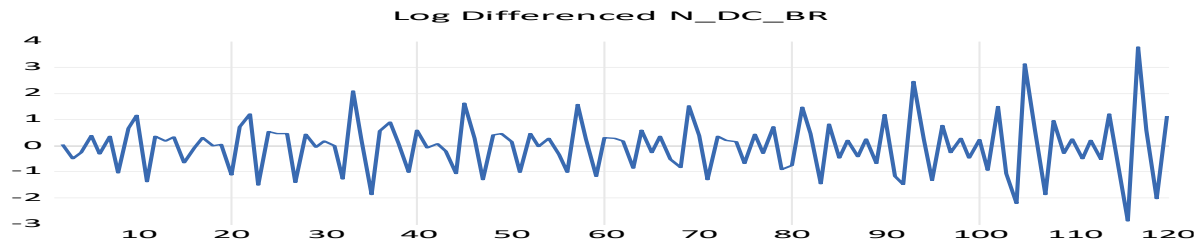
Source: An Analysis of data in EViews 12

Figure 8 Log Differenced N_DC_BR
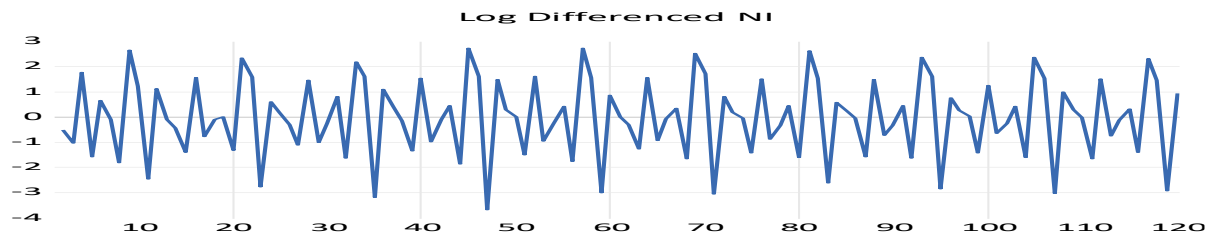
Log Differenced NI

Source: An Analysis of data in EViews 12

Figure 9 Log Differenced NI

Log Differenced NI_BR
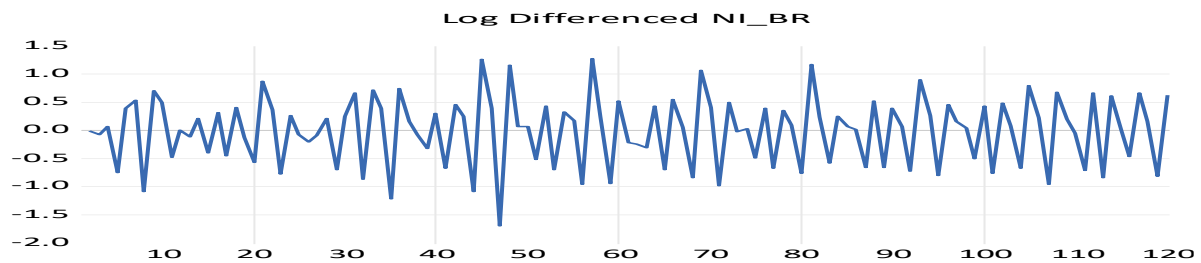
Source: An Analysis of data in EViews 12

Figure 10 Log Differenced NI_BR

Log Differenced NI_TE
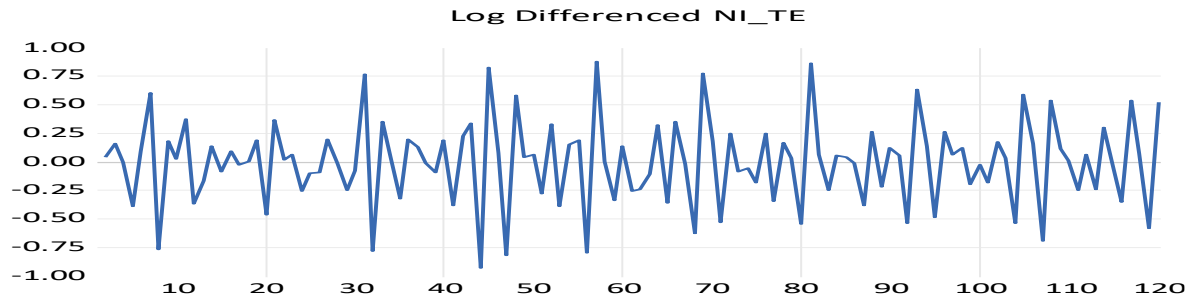
Source: An Analysis of data in EViews 12

Figure 11 Log Differenced NI_TE

Log Differenced OPP
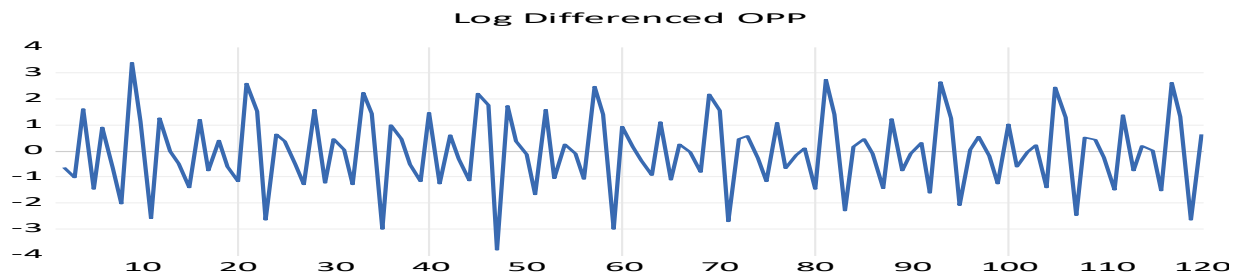
Source: An Analysis of data in EViews 12

Figure 12 Log Differenced OPP

Log Differenced OPP_BR
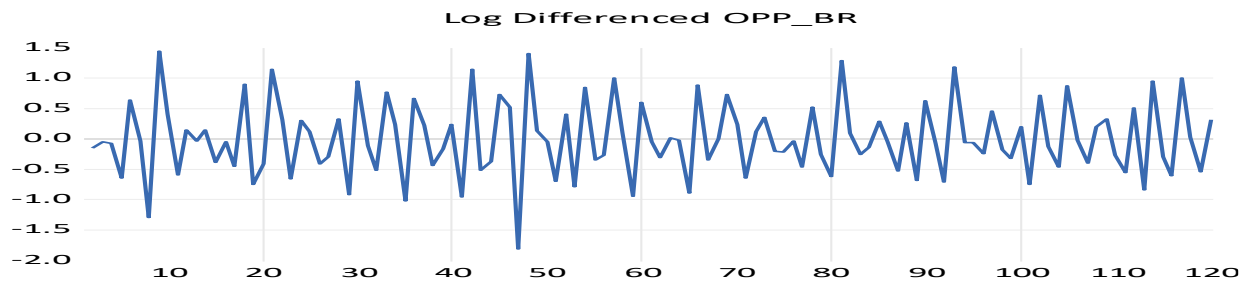
Source: An Analysis of data in EViews 12

Figure 13 Log Differenced OPP_BR

Log Differenced ATM_OFF_BR
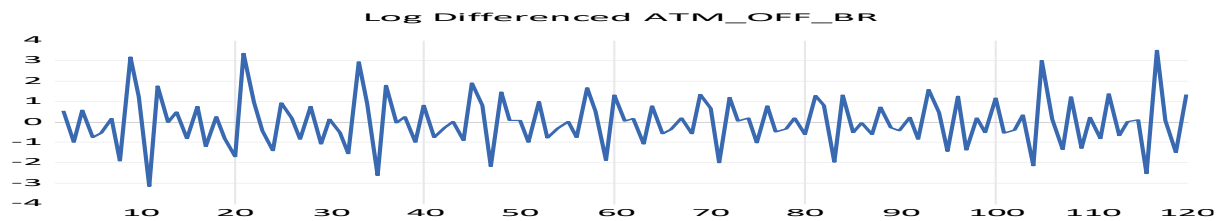
Source: An Analysis of data in EViews 12

Figure 14 Log Differenced ATM_OFF_BR

135
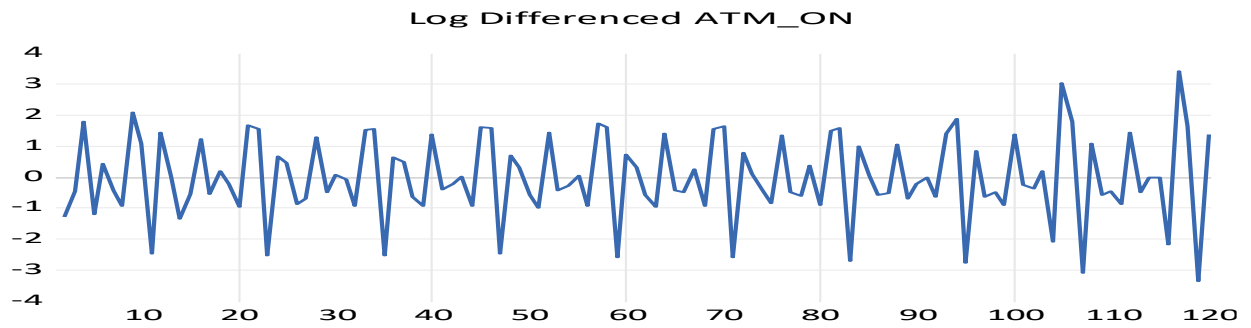
Source: An Analysis of data in EViews 12

Figure 15 Log Differenced ATM_ON
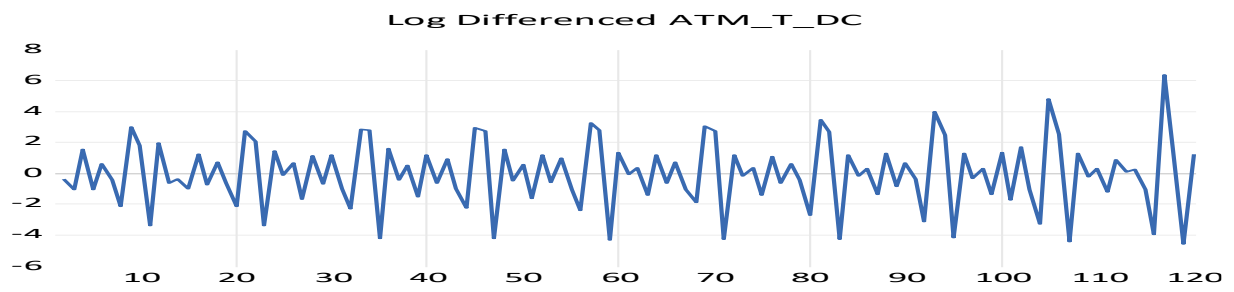
Source: An Analysis of data in EViews 12

Figure 16 Log Differenced ATM_T_DC
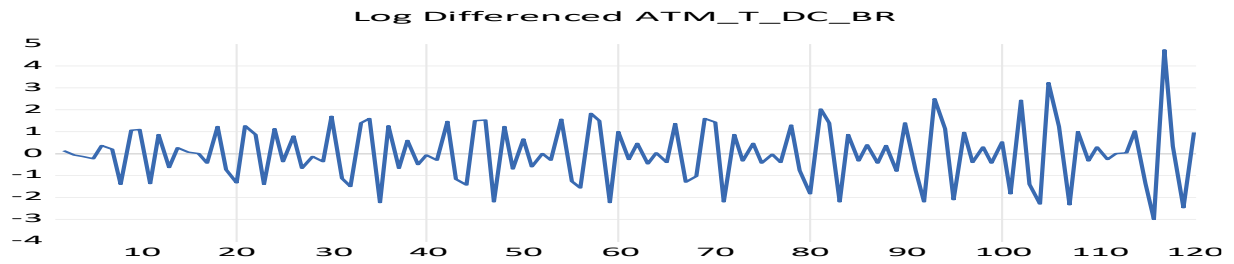
Source: An Analysis of data in EViews 12

Figure 17 Log Differenced ATM_T_DC_BR

Log Differenced BR_MP
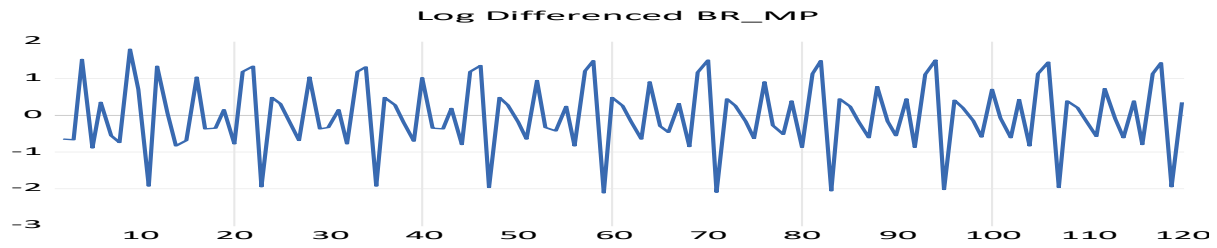
Source: An Analysis of data in EViews 12

Figure 18 Log Differenced BR_MP

Log Differenced BR_R
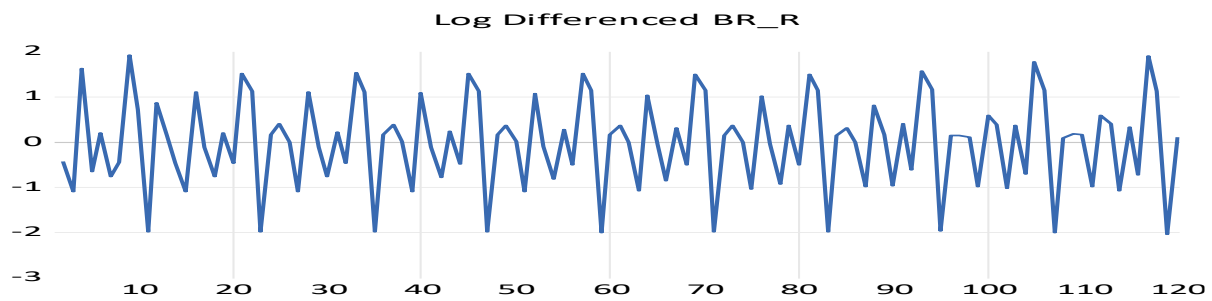
Source: An Analysis of data in EViews 12

Figure 19 Log Differenced BR_R

Log Differenced BR_TTL
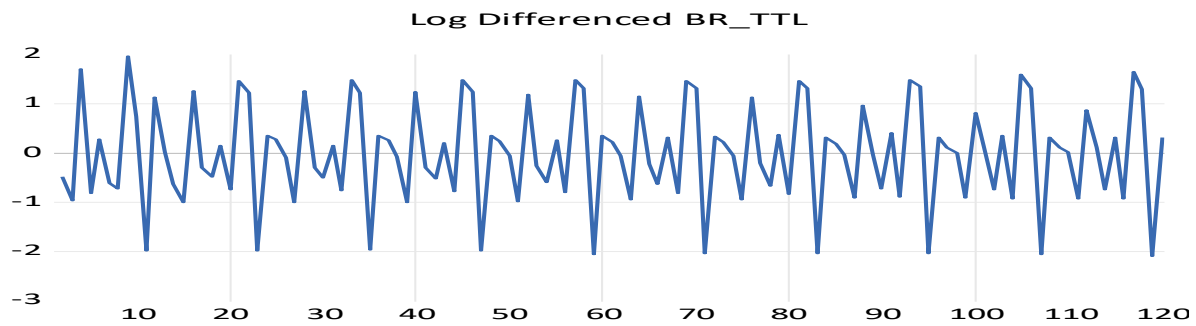
Source: An Analysis of data in EViews 12

Figure 20 Log Differenced BR_TTL

Log Differenced BR_U
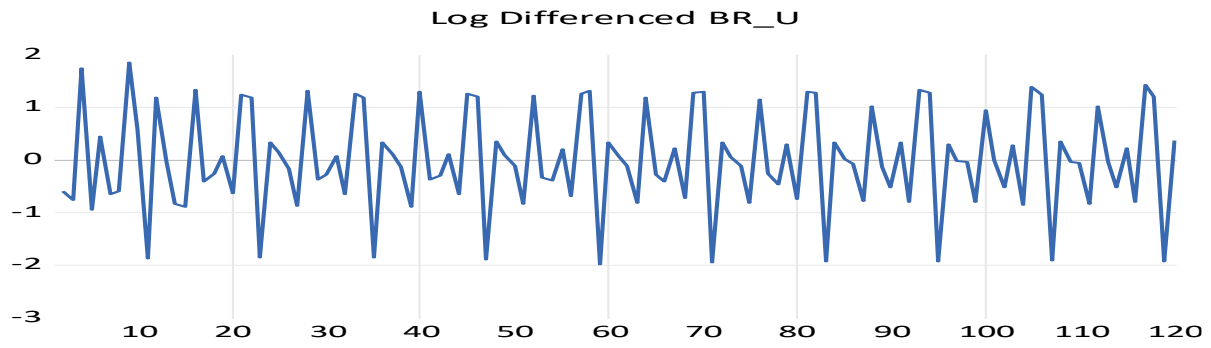
Source: An Analysis of data in EViews 12

Figure 21 Log Differenced BR_U

Log Differenced D_BR
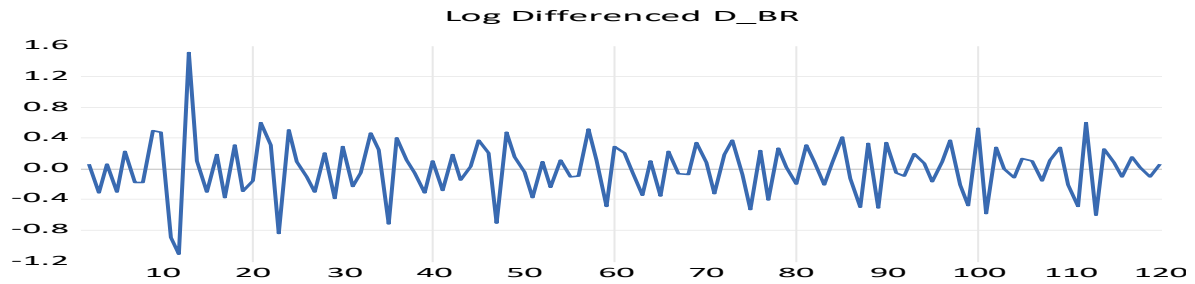
Source: An Analysis of data in EViews 12

Figure 22 Log Differenced D_BR

Log Differenced D_TA
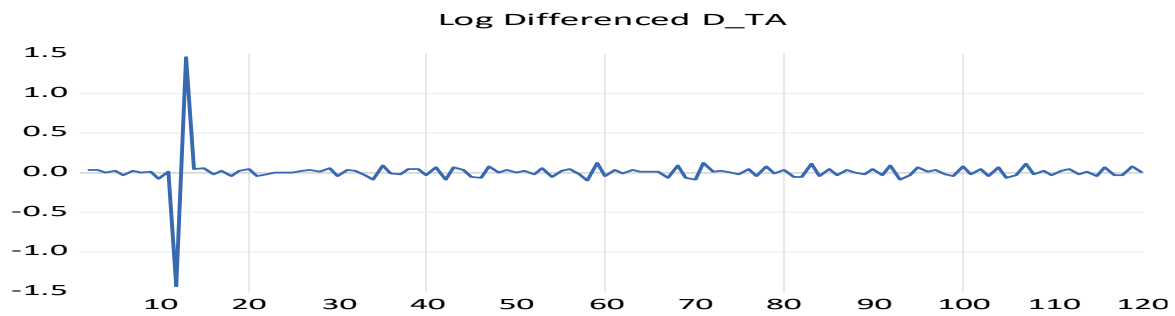
Source: An Analysis of data in EViews 12

Figure 23 Log Differenced D_TA
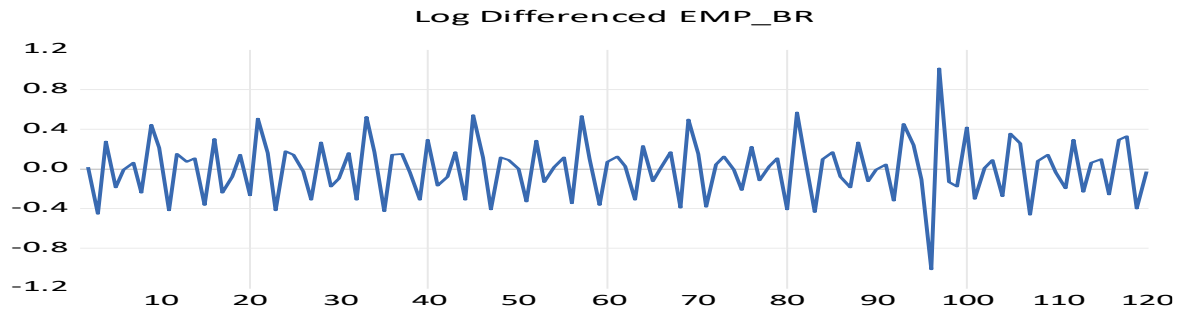
Source: An Analysis of data in EViews 12

Figure 24 Log Differenced EMP_BR
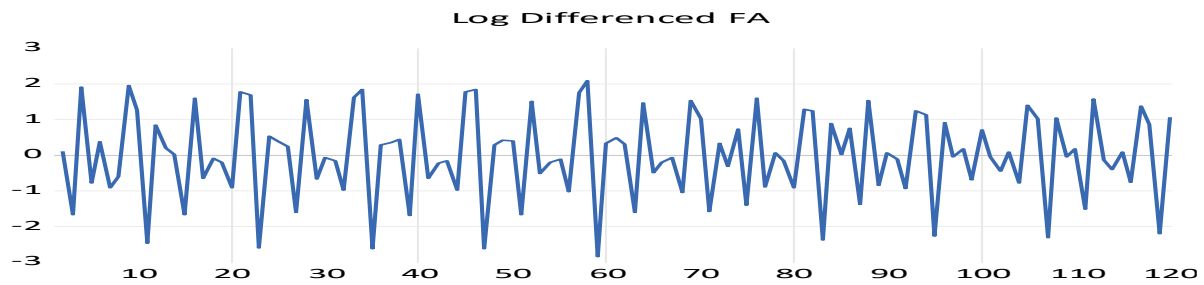
Source: An Analysis of data in EViews 12

Figure 25 Log Differenced FA
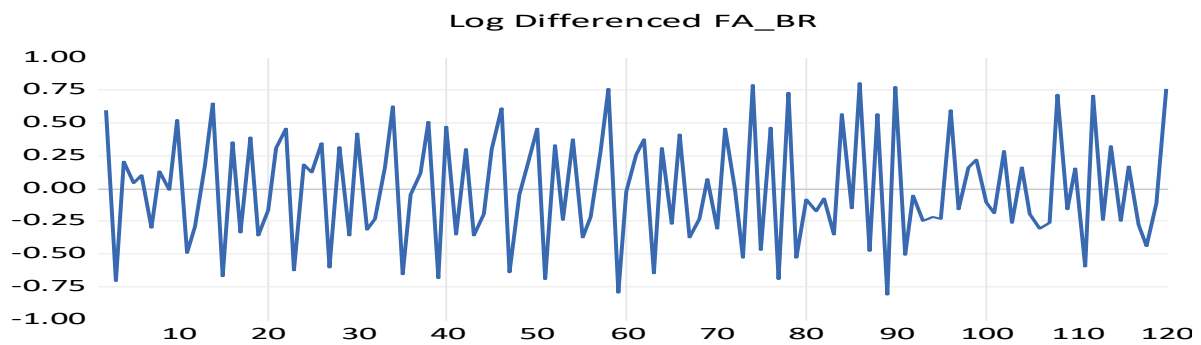
Source: An Analysis of data in EViews 12

Figure 26 Log Differenced FA_BR

Log Differenced I_BR
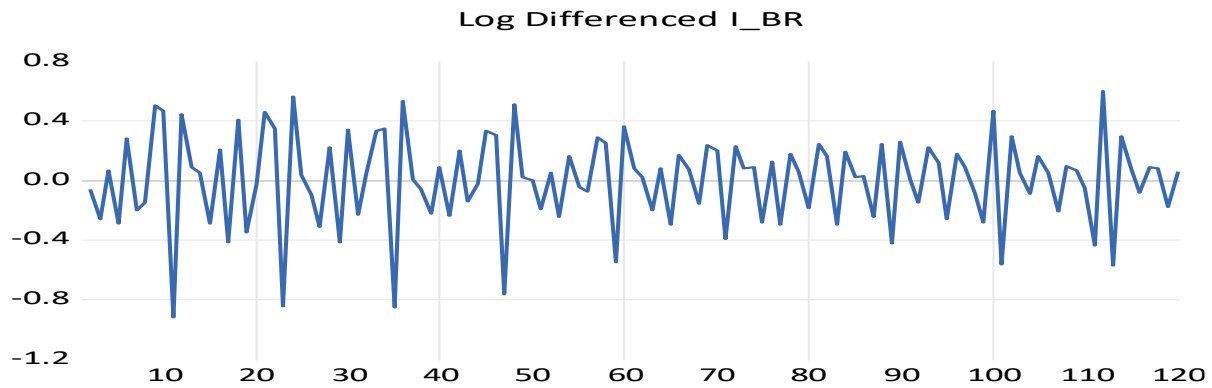
Source: An Analysis of data in EViews 12

Figure 27 Log Differenced I_BR

Log Differenced I_TE
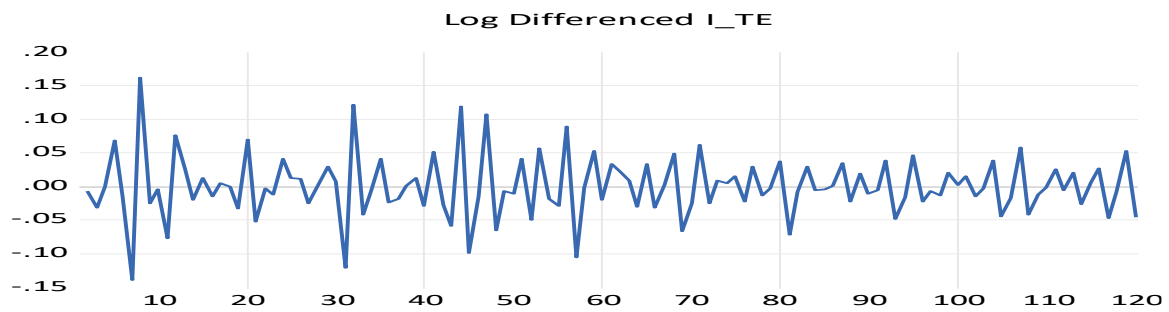
Source: An Analysis of data in EViews 12

Figure 28 Log Differenced I_TE

Log Differenced N_ATM
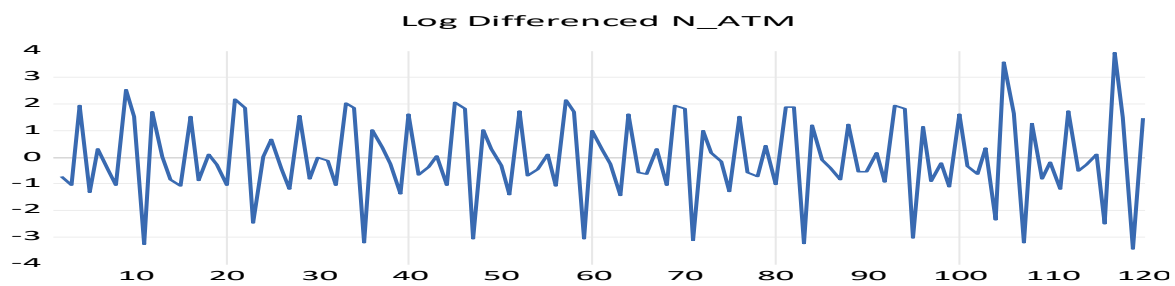
Source: An Analysis of data in EViews 12

Figure 29 Log Differenced N_ATM

140
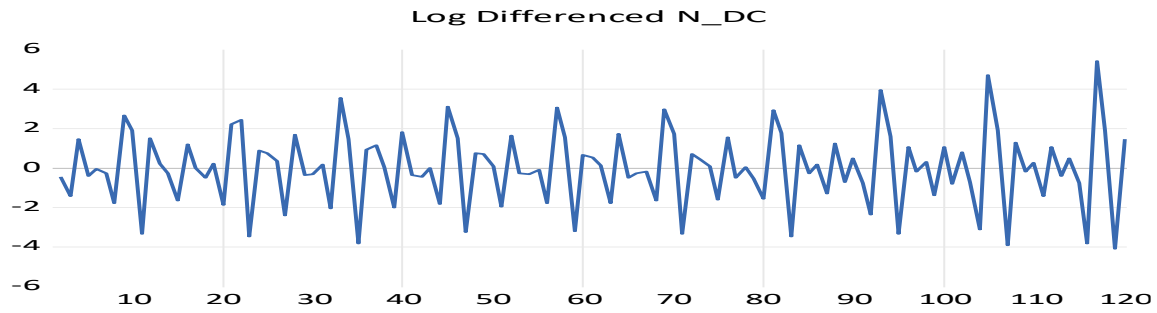
Source: An Analysis of data in EViews 12

Figure 30 Log Differenced N_DC
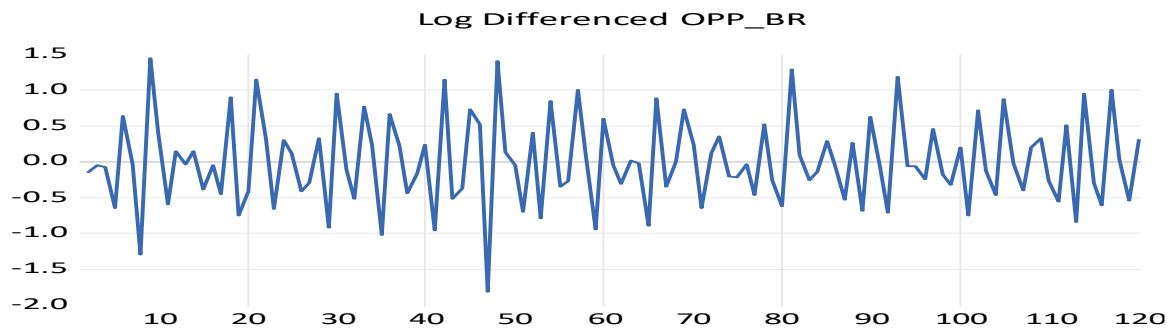
Source: An Analysis of data in EViews 12

Figure 31 Log Differenced OPP_BR
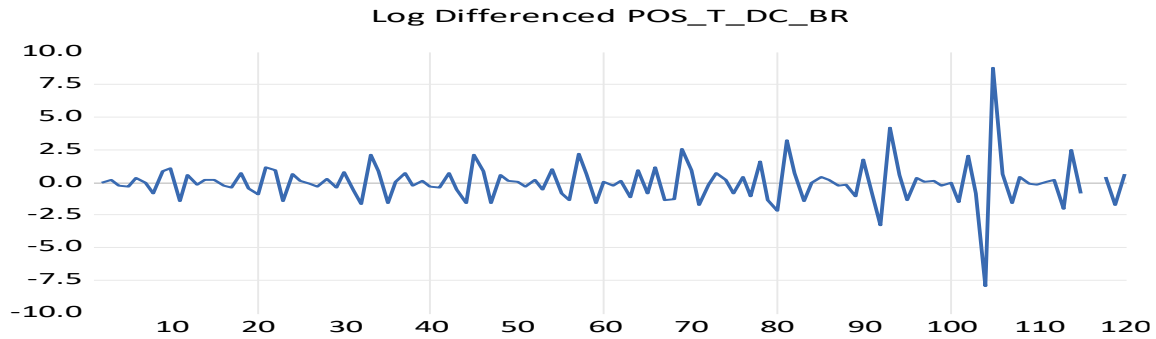
Source: An Analysis of data in EViews 12

Figure 32 Log Differenced POS_T_DC_BR

Log Differenced TA_BR
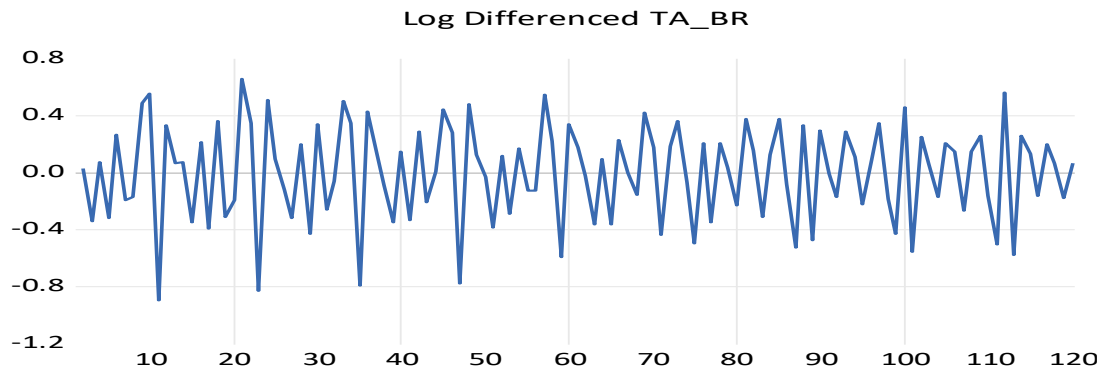
Source: An Analysis of data in EViews 12

Figure 33 Log Differenced TA_BR
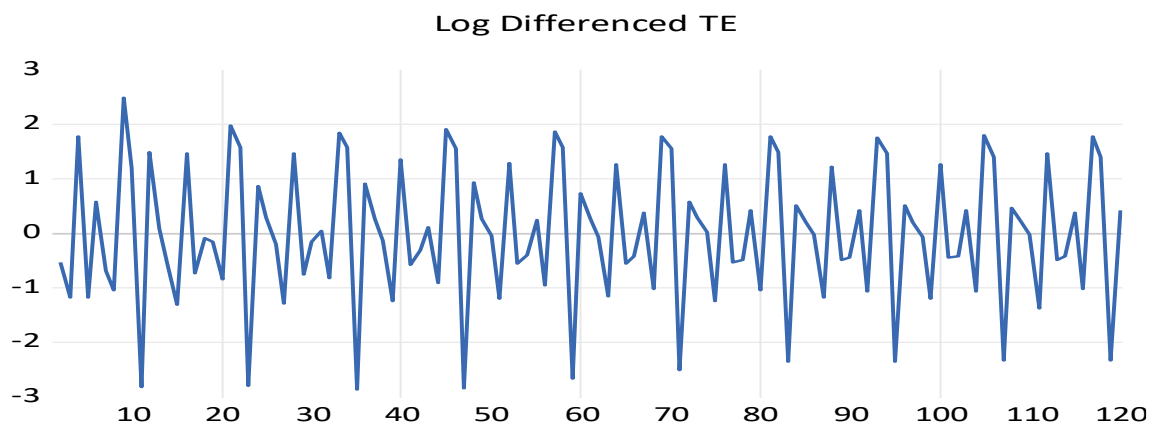
Log Differenced TE

Source: An Analysis of data in EViews 12

Figure 34 Log Differenced TE
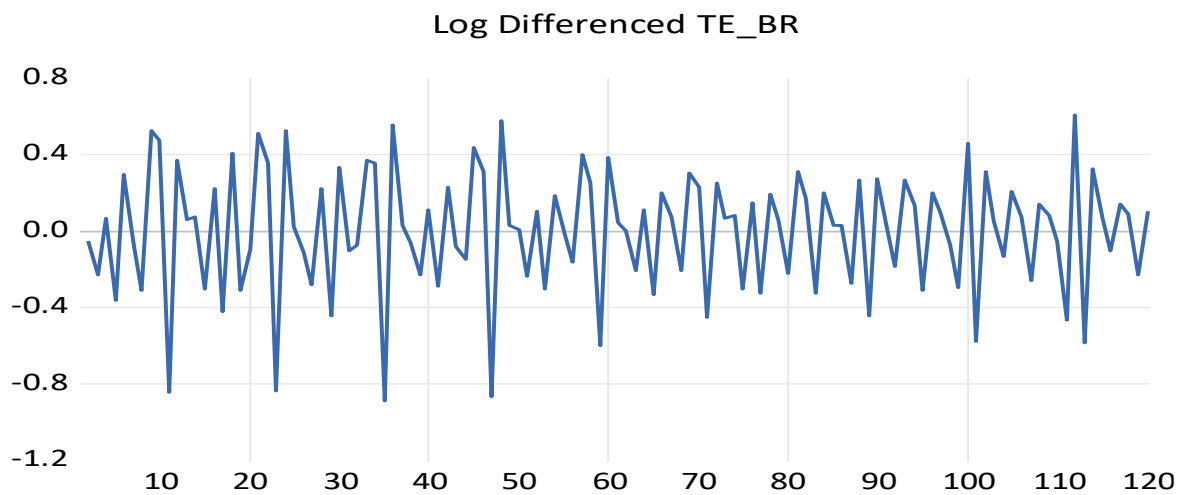
Log Differenced TE_BR

Figure 35 Log Differenced TE_BR
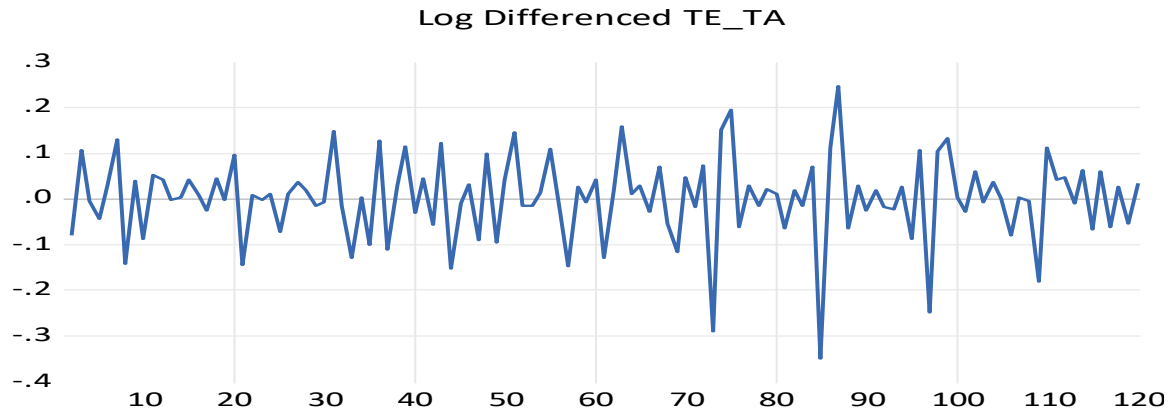
Log Differenced TE_TA

Figure 36 Log Differenced TE_TA

All the above figures are indicating graphical representation of stationarity for the data, which is not the effective way of showing stationarity so the statistical properties of the time series are done using Unit Root test to test stationarity.

4.4 STATIONARITY ANALYSIS

Stationarity means that the statistical properties of a time series (or rather the process generating it) do not change over time. Stationarity is important because many useful analytical tools and statistical tests and models rely on it. Intuitively, a random process $\{X(t), t \in J\}$ is stationary if its statistical properties do not change by time. For example, for a stationary process, $X(t)$ and $X(t+\Delta)$ have the same probability distributions.

Unit Root Test - Levin,Lin & Chu

Process to Test Stationarity

H 0 (S) : Assume common unit root process (Data is non Stationery or following trend).

H 1 (S) : Data series is Stationary

According to Levin,Lin & Chu if P values is less than 0.05 then the alternative hypothesis is accepted . Hence, data is stationery for variables under consideration.

In the current Analysis - Automatic lag length selection based on SIC: 0 to 1 . In other words we have used first lag.

In particular, we have FX(t)(x)=FX(t+Δ)(x), for all t,t+Δ∈J. The results of Stationarity are shown in table 15

Table -15- Summarized values of Stationarity

Variable	Levin, Lin & Chu	p-value
ATM_OFF_BR	-5.93468	0.0000
ATM_ON_BR	-14.7539	0.0000
ATM_T_CC_BR	-2.70493	0.0034
ATM_T_DC_BR	-13.5196	0.0000
D_BR	-2.57235	0.0051
D_BR_G	-4.54571	0.0000
D_G	-3.60552	0.0002
D_TA	-5.83128	0.0000
D_TA_G	-11.2692	0.0000
EMP_BR	-16.8103	0.0000
FA_BR	-6.34459	0.0000
FA_BR_G	-6.91468	0.0000
I_BR	-2.20707	0.0137
I_BR_G	-4.63889	0.0000
I_G	-3.03272	0.0012
I_TE	-2.53956	0.0055
I_TE_G	-5.88365	0.0000
N_ATM_BR	-10.5945	0.0000
N_CC_BR	-0.60327	0.2732
N_DC_BR	-1.46378	0.0716
N_POS_BR	0.25251	0.5997
NI_BR	-2.04508	0.0204
NI_BR_G	-3.51447	0.0002

NI_G	-5.72012	0.0000
NI_TE	-2.93377	0.0017
NI_TE_G	-6.63303	0.0000
NII_BR	-1.55817	0.0596
NII_BR_G	-3.80233	0.0001
NII_G	-4.38462	0.0000
NII_TE	-5.12763	0.0000
NII_TE_G	-6.20525	0.0000
OPP_BR	-5.82242	0.0000
OPP_BR_G	-10.7859	0.0000
OPP_G	-7.74102	0.0000
OPP_TE	-1.98536	0.0236
OPP_TE_G	-10.7333	0.0000
PAT_BR	-3.07327	0.0011
PAT_BR_G	-4.21578	0.0000
PAT_G	-4.28726	0.0000
PAT_TA	-3.07505	0.0011
PAT_TA_G	-4.25306	0.0000
PAT_TE	-2.85580	0.0021
PAT_TE_G	-4.50821	0.0000
POS_T_CC_BR	-2.41600	0.0078
POS_T_DC_BR	-5.85087	0.0000
TA_BR	-6.52212	0.0000
TA_BR_G	-6.58073	0.0000
TE_BR	-7.15490	0.0000
TE_BR_G	-4.84283	0.0000
TE_G	-1.32659	0.0923
TE_TA	-4.49112	0.0000
TE_TA_G	-4.60769	0.0000
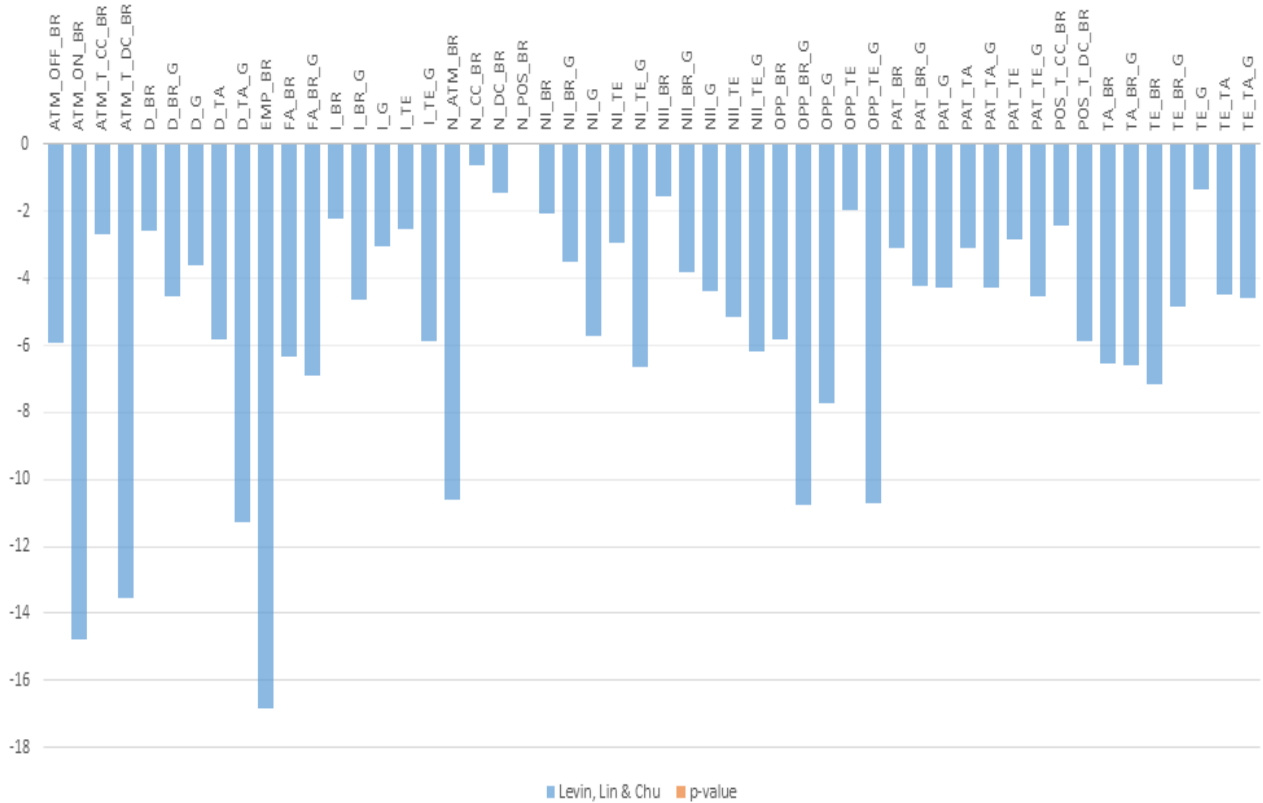
Figure Number -37 Graphical Presentation of Stationarity results

4.5 RESULTS FOR ORDINARY PANEL LEAST SQUARE

Objective 1 - Variation in Deposits among different Public sector banks in India.

Analysis of Variation in Total Deposits

> H0 (D): There is no significant **variation in Deposits** among different Public sector banks in India.

H1 (D): There is significant **variation in Deposits** among different Public sector banks in India.

These section reports the results of the Panel Least Squares for the listed public sector banks in India. The constant term represents the average deposit of the omitted category (in this case Bank of Baroda). The coefficients of other dummies (B2 to B12) represent the difference between the average deposits of a particular bank in reference to the average deposit of the omitted category (Bank of Baroda). The p-value represents whether this difference is significant or not (if the p-value is less than 0.10 then the difference is significant else it is insignificant). Results are highlighted below

Table 16- Analysis of Variation in Total Deposits

Variable	Coeff.	Std. Err.	t-Stat.	P-Stat
C	636390.7	75471.21	8.432231	0
B2	-137759.9	106732.4	-1.290704	0.1996
B3	-507237.4	106732.4	-4.752421	0
B4	-105133.7	106732.4	-0.985021	0.3268
B5	-364476.8	106732.4	-3.414866	0.0009
B6	-416016.1	106732.4	-3.897748	0.0002
B7	-417085	106732.4	-3.907763	0.0002
B8	-549584.7	106732.4	-5.149183	0
B9	-33679.31	106732.4	-0.315549	0.753
B10	1789347	106732.4	16.76479	0
B11	-443532.1	106732.4	-4.155552	0.0001
B12	-306310.7	106732.4	-2.869894	0.0049
ΔR^2	0.864233	-	-	-
F-stat	69.8637	-	-	-

Source: Analysis of Data in Eview12

Interpretation: Table 16 reports the results with bank as the main dependent variable. The constant term 636390.7 with p=.000 represents the average deposit of the omitted category i.e.

Bank of Baroda. The coefficients of other dummies (Bank of India to Union Bank of India) represent the difference between the average deposits of a particular bank in reference to the average deposit of the omitted category (Bank of Baroda). Along with the values of Bank of Maharashtra= -507237.4, Central Bank of India = -364476.8, Indian Bank= - 416016.1, Indian Overseas Bank= - 417085, Punjab and Sind Bank, -549584.7, State Bank of India =1789347, UCO Bank = - 443532.1, Union Bank of India = -306310.7 are with p value less than .05. Therefore, the difference is significant in nature.

Table -17- Analysis of Average Deposits of the Omitted Category

Variable	Coeff.	Std. Err.	t-Stat.	P-Stat
C	701133.6	80286.1	8.732939	0
MD_1	-378063.9	113541.7	-3.329736	0.0012
ΔR^2	0.078142	-	-	-
F-stat	11.08714	-	-	-

Source: Analysis of Data in Eview12

Interpretation: Table 17 reports the results with deposits (MD) as the main dependent variable. The constant term 701133.6 with p=.000 represents the average deposit of the omitted category i.e. bank of Baroda. Along with the values of MD_1 =-378063.9 with p value less than .05. Therefore, the difference is significant in nature.

Table-18 Summary of Above analysis

S.No	Name of Bank	Code of Bank	Variation in Average Deposits (S or IS)	H0 (D)	H1 (D)
1	BANK OF BARODA	B01	S		Accepted
2	BANK OF INDIA	B02	IS	Accepted	
3	BANK OF MAHARASHTRA	B03	S		Accepted

4	CANARA BANK	B04	IS	Accepted	
5	CENTRAL BANK OF INDIA	B05	S		Accepted
6	INDIAN BANK	B06	S		Accepted
7	INDIAN OVERSEAS BANK	B07	S		Accepted
8	PUNJAB AND SIND BANK	B08	S		Accepted
9	PUNJAB NATIONAL BANK	B09	IS	Accepted	
10	STATE BANK OF INDIA	B10	S		Accepted
11	UCO BANK	B11	S		Accepted
12	UNION BANK OF INDIA	B12	S		Accepted

S= Significant, IS = Insignificant

Source Author's own

Analysis of Deposits / Total Assets

H0 (D): There is no significant **variation in Deposits / Total Assets** among different Public sector banks in India.

H1 (D): There is significant **variation in Deposits / Total Assets among** different Public sector   banks in India.

Table -19 Analysis of Deposits / Total Assets

Variable	Coeff.	Std. Err.	t-Stat.	P-Stat
C	0.846674	0.01971	42.9561	0
B2	-0.000332	0.027874	-0.011907	0.9905
B3	0.012634	0.027874	0.453235	0.6513

B4	0.015975	0.027874	0.573118	0.5678
B5	0.022467	0.027874	0.806003	0.422
B6	0.010425	0.027874	0.374012	0.7091
B7	0.003231	0.027874	0.115929	0.9079
B8	0.039577	0.027874	1.419833	0.1585
B9	-0.0042	0.027874	-0.150682	0.8805
B10	-0.05781	0.027874	-2.073946	0.0405
B11	0.001353	0.027874	0.048556	0.9614
B12	-0.073226	0.027874	-2.626995	0.0099
ΔR^2	0.131189	-	-	-
F-stat	2.633531	-	-	-

Source: Analysis of Data in Eview12

Interpretation: Table 19 reports the results with deposits (D_TA_Bank) as the main dependent variable. The constant term 0.846674 with p=.000 represents the average deposit of the omitted category i.e. bank of Baroda. Along with the values of State Bank of India = -0.05781, Union Bank of India = -0.073226 with p value less than .05. Therefore, the difference is significant in nature.

Table-20 Summary of Above analysis

S.No	Name of Bank	Code of Bank	Variation in Deposits /Total Assets (S or IS)	H0 (D)	H1 (D)
1	BANK OF BARODA	B01	IS	Accepted	
2	BANK OF INDIA	B02	IS	Accepted	
3	BANK OF MAHARASHTRA	B03	IS	Accepted	
4	CANARA BANK	B04	IS	Accepted	

5	CENTRAL BANK OF INDIA	B05	IS	Accepted	
6	INDIAN BANK	B06	IS	Accepted	
7	INDIAN OVERSEAS BANK	B07	IS	Accepted	
8	PUNJAB AND SIND BANK	B08	IS	Accepted	
9	PUNJAB NATIONAL BANK	B09	IS	Accepted	
10	STATE BANK OF INDIA	B10	S		Accepted
11	UCO BANK	B11	IS	Accepted	
12	UNION BANK OF INDIA	B12	S		Accepted

S= Significant, IS = Insignificant

Source Author's own

Analysis of Deposits /Total Assets Growth

H0 (D): There is no significant variation in **Deposits /Total Assets Growth** among different Public sector banks in India.

H1 (D): There is significant variation in **Deposits /Total Assets Growth** among different Public sector banks in India.

Table-21 Analysis of Deposits /Total Assets Growth

Variable	Coeff.	Std. Err.	t-Stat.	P-Stat
C	-0.002863	0.025852	-0.110745	0.912
B2	0.00788	0.03656	0.215532	0.8298
B3	0.009254	0.03656	0.253107	0.8007
B4	0.003202	0.03656	0.087571	0.9304
B5	0.008301	0.03656	0.227044	0.8209

B6	0.003907	0.03656	0.106861	0.9151
B7	0.011878	0.03656	0.32489	0.746
B8	0.003485	0.03656	0.095325	0.9243
B9	0.00963	0.03656	0.263402	0.7928
B10	0.005651	0.03656	0.154558	0.8775
B11	-0.001973	0.03656	-0.053962	0.9571
B12	-0.086262	0.03656	-2.359484	0.0203
ΔR^2	0.00779			
F-stat	1.076368			

Source: Analysis of Data in Eview12

Interpretation: Table 21 reports the results with deposits (D_TA_G_Bank) as the main dependent variable. The constant term 0.846674 with p=.000 represents the average deposit of the omitted category i.e. bank of Baroda. Along with the values of State Bank of India = -0.05781, Union Bank of India = -0.073226 with p value less than .05. Therefore, the difference is significant in nature.

Table-22 Summary of Above analysis

S.No	Name of Bank	Code of Bank	Variation in Growth of Deposits/ Total Assets	H0 (D)	H1 (D)
1	BANK OF BARODA	B01	IS	Accepted	
2	BANK OF INDIA	B02	IS	Accepted	
3	BANK OF MAHARASHTRA	B03	IS	Accepted	
4	CANARA BANK	B04	IS	Accepted	
5	CENTRAL BANK OF INDIA	B05	IS	Accepted	

6	INDIAN BANK	B06	IS	Accepted	
7	INDIAN OVERSEAS BANK	B07	IS	Accepted	
8	PUNJAB AND SIND BANK	B08	IS	Accepted	
9	PUNJAB NATIONAL BANK	B09	IS	Accepted	
10	STATE BANK OF INDIA	B10	S		Accepted
11	UCO BANK	B11	IS	Accepted	
12	UNION BANK OF INDIA	B12	S		Accepted

S= Significant, IS = Insignificant

Source Author's own

Analysis of Deposits/ Branch

H0 (D): There is no significant variation in **Deposits/ Branch** among different Public sector banks in India.

H1 (D): There is significant variation in **Deposits/ Branch** among different Public sector banks in India.

Table-23 Analysis of Deposits/ Branch

Variable	Coeff.	Std. Err.	t-Stat.	P-Stat
C	110.6392	4.32784	25.56454	0
B2	-6.98888	6.120491	-1.141882	0.256
B3	-40.19596	6.120491	-6.567441	0
B4	-21.96002	6.120491	-3.58795	0.0005
B5	-51.20002	6.120491	-8.365346	0
B6	-34.32717	6.120491	-5.608566	0

B7	-41.87607	6.120491	-6.841946	0
B8	-48.6918	6.120491	-7.955538	0
B9	-44.25548	6.120491	-3.452004	0.0008
B10	-1.612314	6.120491	-0.263429	0.7927
B11	-44.25548	6.120491	-7.230708	0
B12	-31.755	6.120491	-5.18831	0
ΔR^2	0.605441			
F-stat	17.60023			

Source: Analysis of Data in Eview12

Interpretation: Table 23 reports the results with deposits (D_BR_Bank) as the main dependent variable. The constant term 110.6392 with p=.000 represents the average deposit of the omitted category i.e. bank of Baroda. Along with the values of Bank of India =-6.9888, Bank Of Maharashtra = -40.19596, Canara Bank=-21.96002, Central Bank of India =-51.20002, Indian Bank =-34.32717, Indian Overseas Bank=-41.87607, Punjab And Sind Bank=-48.6918, Punjab National Bank -44.25548, UCO Bank= -44.25548, Union Bank of India = -31.755 with p value less than .05. Therefore, the difference is significant in nature.

Table-24 Summary of Above analysis

S.No	Name of Bank	Code of Bank	Variation in Deposits /Branch	H0 (D)	H1 (D)
1	BANK OF BARODA	B01	IS	Accepted	
2	BANK OF INDIA	B02	S		Accepted
3	BANK OF MAHARASHTRA	B03	S		Accepted
4	CANARA BANK	B04	S		Accepted
5	CENTRAL BANK OF INDIA	B05	S		Accepted

6	INDIAN BANK	B06	S		Accepted
7	INDIAN OVERSEAS BANK	B07	S		Accepted
8	PUNJAB AND SIND BANK	B08	S		Accepted
9	PUNJAB NATIONAL BANK	B09	S		Accepted
10	STATE BANK OF INDIA	B10	IS	Accepted	
11	UCO BANK	B11	S		Accepted
12	UNION BANK OF INDIA	B12	S		Accepted

S= Significant, IS = Insignificant

Source Author's own

Analysis of Deposits / Branch, Growth

. H0 (D): There is no significant variation in **Deposits / Branch, Growth** among different Public sector banks in India.

H1 (D): There is significant variation in **Deposits / Branch, Growth** among different Public sector banks in India.

Table – 25 Analysis of Deposits / Branch, Growth

Variable	Coeff.	Std. Err.	t-Stat.	P-Stat
C	0.023468	0.033887	0.692555	0.4903
B2	0.028361	0.047923	0.591795	0.5554
B3	0.048094	0.047923	1.003575	0.3181
B4	-0.013358	0.047923	-0.278732	0.7811
B5	0.020305	0.047923	0.423694	0.6727
B6	0.017655	0.047923	0.368395	0.7134

B7	-0.011508	0.047923	-0.240145	0.8107
B8	-0.017916	0.047923	-0.373843	0.7093
B9	0.01836	0.047923	0.383115	0.7025
B10	0.072243	0.047923	1.507473	0.135
B11	-0.018885	0.047923	-0.394071	0.6944
B12	-0.063999	0.047923	-1.335444	0.1849
ΔR^2	0.010674			
F-stat	1.104948			

Source: Analysis of Data in Eview12

Interpretation: Table 25 reports the results with deposits (D_BR_G_Bank) as the main dependent variable. The constant term 0.023468 with p=0.4903 i.e. insignificant and represents the average deposit of the omitted category i.e. bank of Baroda. Along with the values of ranging from Bank of India to Union Bank of India. The p value more than .05. Therefore, the difference is insignificant in nature.

Table-26 Summary of Above analysis

S.No	Name of Bank	Code of Bank	Variation in Growth of Deposits/Branch	H0 (D)	H1 (D)
1	BANK OF BARODA	B01	S		Accepted
2	BANK OF INDIA	B02	IS	Accepted	
3	BANK OF MAHARASHTRA	B03	IS	Accepted	
4	CANARA BANK	B04	IS	Accepted	
5	CENTRAL BANK OF INDIA	B05	IS	Accepted	
6	INDIAN BANK	B06	IS	Accepted	

7	INDIAN OVERSEAS BANK	B07	IS	Accepted	
8	PUNJAB AND SIND BANK	B08	IS	Accepted	
9	PUNJAB NATIONAL BANK	B09	IS	Accepted	
10	STATE BANK OF INDIA	B10	IS	Accepted	
11	UCO BANK	B11	IS	Accepted	
12	UNION BANK OF INDIA	B12	IS	Accepted	

S= Significant, IS = Insignificant

Source Author's own

<u>Summary of Objective -1</u>

S.No.	Name of Bank	Code	Variation in Average Deposits	Variation in Deposits /Total Assets	Variation in Growth of Deposits/ Total Assets	Variation in Deposits /Branch	Variation in Growth of Deposits/Branch
1	BANK OF BARODA	B01	S	IS	IS	IS	S
2	BANK OF INDIA	B02	IS	IS	IS	S	IS
3	BANK OF MAHARASHTRA	B03	S	IS	IS	S	IS
4	CANARA BANK	B04	IS	IS	IS	S	IS
5	CENTRAL BANK OF INDIA	B05	S	IS	IS	S	IS
6	INDIAN BANK	B06	S	IS	IS	S	IS
7	INDIAN OVERSEAS BANK	B07	S	IS	IS	S	IS
8	PUNJAB AND SIND BANK	B08	S	IS	IS	S	IS
9	PUNJAB NATIONAL BANK	B09	IS	IS	IS	S	IS
10	STATE BANK OF INDIA	B10	S	S	S	IS	IS
11	UCO BANK	B11	S	IS	IS	S	IS
12	UNION BANK OF INDIA	B12	S	S	S	S	IS

S= Significant , IS = Insignificant

Source: Author's owns

Figure 38 Summary results for Objective 1

Objective 2 -Variation in Profits among different Public sector banks in India

Analysis of Operating Profits per Branch

1.H0(P): There is no significant variation in **Operating Profit per branch** among different Public sector banks in India.

  H1(P): There is significant variation in **Operating Profit per branch** among different Public sector banks in   India.

Table -27 Analysis of Operating Profits per Branch

Variable	Coeff.	Std. Err.	t-Stat.	P-Stat
C	2.0964	0.0948	22.1221	0.0000
B2	-0.3509	0.1340	-2.6186	0.0101
B3	-0.8176	0.1340	-6.1007	0.0000
B4	-0.5948	0.1340	-4.4381	0.0000
B5	-1.3709	0.1340	-10.2295	0.0000
B6	-0.4554	0.1340	-3.3982	0.0010
B7	-0.8573	0.1340	-6.3972	0.0000
B8	-1.3675	0.1340	-10.2039	0.0000
B9	-0.1130	0.1340	-0.8435	0.4008
B10	0.3214	0.1340	2.3982	0.0182
B11	-0.8239	0.1340	-6.1477	0.0000
B12	-0.4123	0.1340	-3.0768	0.0027
ΔR^2	0.723903			
F-stat	29.3644			

Source: Analysis of Data in Eview12

Interpretation: Table 27 reports the results with Profit (OPP_BR) as the main dependent variable. The constant term 2.0964 with p=.000 represents the average deposit of the omitted category i.e. Bank of Baroda. Along with the values of Bank of India = -0.350, Bank of Maharashtra=-0.8176, Canara Bank=-0.5948, Central Bank of India=-1.3709, Indian Bank= -0.4554, Indian Overseas Bank=-0.8573, Punjab and Sind Bank= -1.3675, State Bank of India =-0.3214, UCO Bank=-0.8239, Union Bank of India = -0.4123 with p value less than .05. Therefore, the difference is significant in nature.

Table-28 Summary of Above analysis

S.No	Name of Bank	Code of Bank	Variation in Operating Profit per branch	H0 (D)	H1 (D)
1	BANK OF BARODA	B01	S		Accepted
2	BANK OF INDIA	B02	S		Accepted
3	BANK OF MAHARASHTRA	B03	S		Accepted
4	CANARA BANK	B04	S		Accepted
5	CENTRAL BANK OF INDIA	B05	S		Accepted
6	INDIAN BANK	B06	S		Accepted
7	INDIAN OVERSEAS BANK	B07	S		Accepted
8	PUNJAB AND SIND BANK	B08	S		Accepted
9	PUNJAB NATIONAL BANK	B09	IS	Accepted	
10	STATE BANK OF INDIA	B10	S		Accepted
11	UCO BANK	B11	S		Accepted

| 12 | UNION BANK OF INDIA | B12 | S | | Accepted |

S= Significant, IS = Insignificant

Source Author's own

Analysis of Growth of Operating profits per branch

H0(P): There is no significant variation in **Growth of Operating profits per branch** among different Public sector banks in India.

H1(P): There is significant variation in **Growth of Operating profits per branch** among different Public sector banks in India.

Table-29 Analysis of Growth of Operating profits per branch

Variable	Coeff.	Std. Err.	t-Stat.	P-Stat
C	0.024499	0.08404	0.291518	0.7713
B2	0.034553	0.11885	0.290724	0.7719
B3	0.080601	0.11885	0.67817	0.4993
B4	0.002873	0.11885	0.024174	0.9808
B5	0.038203	0.11885	0.321436	0.7486
B6	-0.004177	0.11885	-0.035146	0.972
B7	0.049436	0.11885	0.415952	0.6784
B8	-0.033291	0.11885	-0.280104	0.78
B9	-0.003255	0.11885	-0.027387	0.9782
B10	0.030033	0.11885	0.252697	0.801
B11	0.119463	0.11885	1.005155	0.3173
B12	0.009149	0.11885	0.076976	0.9388
ΔR^2	-0.083782			
F-stat	0.248034			

Source: Analysis of Data in Eview12

Interpretation: Table 29 reports the results with Profit (OPP_BR_G) as the main dependent variable. The constant term 0.024499 with p=0.7713 which is insignificant represents the average deposit of the omitted category i.e. bank of Baroda. Along with the values all the values of Bank of India to Union Bank of India with p value more than .05. Therefore, the difference is insignificant in nature.

Table-30 Summary of Above analysis

S.No	Name of Bank	Code of Bank	Variation in Growth of Operating profits per branch	H0 (D)	H1 (D)
1	BANK OF BARODA	B01	IS	Accepted	
2	BANK OF INDIA	B02	IS	Accepted	
3	BANK OF MAHARASHTRA	B03	IS	Accepted	
4	CANARA BANK	B04	IS	Accepted	
5	CENTRAL BANK OF INDIA	B05	IS	Accepted	
6	INDIAN BANK	B06	IS	Accepted	
7	INDIAN OVERSEAS BANK	B07	IS	Accepted	
8	PUNJAB AND SIND BANK	B08	IS	Accepted	
9	PUNJAB NATIONAL BANK	B09	IS	Accepted	
10	STATE BANK OF INDIA	B10	IS	Accepted	
11	UCO BANK	B11	IS	Accepted	

| 12 | UNION BANK OF INDIA | B12 | IS | Accepted | |

S= Significant, IS = Insignificant

Source Author's own

Analysis of Growth of Operating Profits

H0(P): There is no significant variation in **Growth of Operating profits** among different Public sector banks in India.

H1(P): There is significant variation in **Growth of Operating profits** among different Public sector banks in India

Table 31 Analysis of Growth of Operating Profits

Variable	Coeff.	Std. Err.	t-Stat.	P-Stat
C	0.110284	0.098469	1.119983	0.2655
B2	-0.023013	0.139256	-0.165258	0.8691
B3	0.021756	0.139256	0.156226	0.8762
B4	0.072496	0.139256	0.520596	0.6038
B5	-0.031655	0.139256	-0.227317	0.8207
B6	0.057169	0.139256	0.41053	0.6823
B7	-0.01654	0.139256	-0.118771	0.9057
B8	-0.07666	0.139256	-0.550492	0.5833
B9	0.002709	0.139256	0.019451	0.9845
B10	-0.038887	0.139256	-0.279246	0.7807
B11	0.06784	0.139256	0.48716	0.6273
B12	0.081954	0.139256	0.588514	0.5576
ΔR^2	-0.081614			
F-stat	0.266023			

Source: Analysis of Data in Eview12

Interpretation: Table 31 reports the results with Profit (OPP_G) as the main dependent variable. The constant term 0.110284 with p=0.2655 which is insignificant represents the average deposit of the omitted category i.e. Bank of Baroda. Along with the values of Bank of India to Union Bank of India with p value more than .05. Therefore, the difference is insignificant in nature.

Table-32 Summary of Above analysis

S.No	Name of Bank	Code of Bank	Variation in Growth of Operating profits	H0 (D)	H1 (D)
1	BANK OF BARODA	B01	IS	Accept	
2	BANK OF INDIA	B02	IS	Accept	
3	BANK OF MAHARASHTRA	B03	IS	Accept	
4	CANARA BANK	B04	IS	Accept	
5	CENTRAL BANK OF INDIA	B05	IS	Accept	
6	INDIAN BANK	B06	IS	Accept	
7	INDIAN OVERSEAS BANK	B07	IS	Accept	
8	PUNJAB AND SIND BANK	B08	IS	Accept	
9	PUNJAB NATIONAL BANK	B09	IS	Accept	
10	STATE BANK OF INDIA	B10	IS	Accept	
11	UCO BANK	B11	IS	Accept	
12	UNION BANK OF INDIA	B12	IS	Accept	

S= Significant, IS = Insignificant

Analysis of Operating Profits to Total Earnings

There is no significant variation in **Operating profits to total earnings** among different Public sector banks in India.

H1(P): There is significant variation in **Operating profits to total earnings** among different Public sector banks in India

Table -33 Analysis of Operating Profits to Total Earnings

Variable	Coeff.	Std. Err.	t-Stat.	P-Stat
C	0.2265	0.0107	21.1366	0.0000
B2	-0.0343	0.0152	-2.2624	0.0257
B3	-0.0398	0.0152	-2.6250	0.0099
B4	-0.0505	0.0152	-3.3292	0.0012
B5	-0.0983	0.0152	-6.4837	0.0000
B6	-0.0067	0.0152	-0.4394	0.6612
B7	-0.0529	0.0152	-3.4917	0.0007
B8	-0.1068	0.0152	-7.0439	0.0000
B9	0.0052	0.0152	0.3444	0.7312
B10	-0.0074	0.0152	-0.4894	0.6255
B11	-0.0246	0.0152	-1.6249	0.1071
B12	-0.0305	0.0152	-2.0132	0.0466
ΔR^2	0.486481			
F-stat	11.24858			

Source: Analysis of Data in Eview12

Interpretation: Table 33 reports the results with Profit (OPP_TE) as the main dependent variable. The constant term 0.2265 with p=.000 represents the average deposit of the omitted category i.e. bank of Baroda. Along with the values of Bank of India   = -0.0343, Bank of Maharashtra =- 0.0398, Canara Bank=-0.0505, Central Bank of India   =-0.0983, Indian Overseas Bank= -

0.052, Punjab and Sind Bank=-0.1068, Union Bank of India   = -0.0305 with p value less than .05. Therefore, the difference is significant in nature.

Table-34 Summary of Above analysis

S.No	Name of Bank	Code of Bank	Variation in Operating profits to total earnings	H0 (D)	H1 (D)
1	BANK OF BARODA	B01	S		Accept
2	BANK OF INDIA	B02	S		Accept
3	BANK OF MAHARASHTRA	B03	S		Accept
4	CANARA BANK	B04	S		Accept
5	CENTRAL BANK OF INDIA	B05	S		Accept
6	INDIAN BANK	B06	IS	Accept	
7	INDIAN OVERSEAS BANK	B07	S		Accept
8	PUNJAB AND SIND BANK	B08	S		Accept
9	PUNJAB NATIONAL BANK	B09	IS	Accept	
10	STATE BANK OF INDIA	B10	IS	Accept	
11	UCO BANK	B11	IS	Accept	
12	UNION BANK OF INDIA	B12	S		Accept

S= Significant, IS = Insignificant

Source Author's own

Analysis of Growth of operating profit to total earning

H0(P): There is no significant variation in **Growth of operating profit to total earning** among different Public sector banks in India.

H1(P): There is significant variation in **Growth of operating profit to total earning** among different Public sector banks in India.

Table -35 Analysis of Growth of operating profit to total earning

Variable	Coeff.	Std. Err.	t-Stat.	P-Stat
C	0.002363	0.075766	0.031194	0.9752
B2	0.032928	0.107149	0.307313	0.7593
B3	0.052658	0.107149	0.491448	0.6242
B4	0.044902	0.107149	0.419061	0.6761
B5	0.047762	0.107149	0.445757	0.6568
B6	0.006931	0.107149	0.064682	0.9486
B7	0.074113	0.107149	0.691684	0.4908
B8	0.008475	0.107149	0.079091	0.9371
B9	0.003274	0.107149	0.030552	0.9757
B10	-0.005469	0.107149	-0.051042	0.9594
B11	0.124814	0.107149	1.164863	0.247
B12	0.013161	0.107149	0.12283	0.9025
ΔR^2	-0.083158			
F-stat	0.253205			

Source: Analysis of Data in Eview12

Interpretation: Table 35 reports the results with Profit (OPP_TE_G) as the main dependent variable. The constant term 0.002363 with p=0.9752represents the average deposit of the omitted category i.e. Bank of Baroda. Along with the values of Bank of India   to   Union   Bank   of India with p value more than .05. Therefore, the difference is insignificant in nature.

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Table-36 Summary of Above analysis

S.No	Name of Bank	Code of Bank	Variation in Growth of operating profit to total earning	H0 (D)	H1 (D)
1	BANK OF BARODA	B01	IS	Accept	
2	BANK OF INDIA	B02	IS	Accept	
3	BANK OF MAHARASHTRA	B03	IS	Accept	
4	CANARA BANK	B04	IS	Accept	
5	CENTRAL BANK OF INDIA	B05	IS	Accept	
6	INDIAN BANK	B06	IS	Accept	
7	INDIAN OVERSEAS BANK	B07	IS	Accept	
8	PUNJAB AND SIND BANK	B08	IS	Accept	
9	PUNJAB NATIONAL BANK	B09	IS	Accept	
10	STATE BANK OF INDIA	B10	IS	Accept	
11	UCO BANK	B11	IS	Accept	
12	UNION BANK OF INDIA	B12	IS	Accept	

S= Significant, IS = Insignificant

Source Author's own

Analysis of Net profit per branch

H0(P): There is no significant variation in **Net profit per branch** among different Public sector banks in India.

H1(P): There is significant variation in **Net profit per branch** among different Public sector banks in India

Table 37 Analysis of Net profit per branch

Variable	Coeff.	Std. Err.	t-Stat.	P-Stat
C	0.2971	0.2276	1.3055	0.1945
B2	-0.4684	0.3218	-1.4556	0.1484
B3	-0.5200	0.3218	-1.6157	0.1091
B4	-0.1351	0.3218	-0.4197	0.6756
B5	-0.6299	0.3218	-1.9573	0.0529
B6	0.1836	0.3218	0.5705	0.5695
B7	-0.9603	0.3218	-2.9838	0.0035
B8	-0.4845	0.3218	-1.5055	0.1351
B9	-0.3686	0.3218	-1.1455	0.2545
B10	0.1777	0.3218	0.5520	0.5821
B11	-0.6477	0.3218	-2.0127	0.0466
B12	-0.2743	0.3218	-0.8523	0.3959
ΔR^2	0.110853			
F-stat	2.348741			

Source: Analysis of Data in Eview12

Interpretation: Table 37 reports the results with Profit (PAT_BR) as the main dependent variable. The constant term 0.2971 with p= 0.1945 represents the average deposit of the omitted category i.e. bank of Baroda. Along with the values Indian Overseas Bank= -0.9603, UCO Bank = -0.6477, with p value less than .05. Therefore, the difference is significant in nature.

Table-38 Summary of Above analysis

S.No	Name of Bank	Code of Bank	Variation in Net profit per branch	H0 (D)	H1 (D)
1	BANK OF BARODA	B01	S		Accept
2	BANK OF INDIA	B02	IS	Accept	
3	BANK OF MAHARASHTRA	B03	IS	Accept	
4	CANARA BANK	B04	IS	Accept	
5	CENTRAL BANK OF INDIA	B05	IS	Accept	
6	INDIAN BANK	B06	IS	Accept	
7	INDIAN OVERSEAS BANK	B07	S		Accept
8	PUNJAB AND SIND BANK	B08	IS	Accept	
9	PUNJAB NATIONAL BANK	B09	IS	Accept	
10	STATE BANK OF INDIA	B10	IS	Accept	
11	UCO BANK	B11	S		Accept
12	UNION BANK OF INDIA	B12	IS	Accept	

S= Significant, IS = Insignificant

Source Author's own

Analysis of Growth of Net profit per branch

H0(P): There is no significant variation in **Growth of Net profit per branch** among different Public sector banks in India.

H1(P) There is significant variation in **Growth of Net profit per branch** among different Public sector banks in India.

Table-39 Analysis of Growth of Net profit per branch

Variable	Coeff.	Std. Err.	t-Stat.	P-Stat
C	-0.8692	0.9745	-0.8920	0.3746
B2	0.2970	1.3782	0.2155	0.8298
B3	-0.5555	1.3782	-0.4031	0.6878
B4	-1.2240	1.3782	-0.8881	0.3767
B5	0.2860	1.3782	0.2075	0.8360
B6	1.0043	1.3782	0.7287	0.4679
B7	1.3022	1.3782	0.9449	0.3471
B8	0.6187	1.3782	0.4489	0.6545
B9	-0.5603	1.3782	-0.4066	0.6852
B10	2.8263	1.3782	2.0507	0.0430
B11	0.4850	1.3782	0.3519	0.7257
B12	-0.6156	1.3782	-0.4467	0.6561
ΔR^2	0.022028			
F-stat	1.219101			

Source: Analysis of Data in Eview12

Interpretation: Table 39 reports the results with Profit (PAT_BR_G) as the main dependent variable. The constant term -0.8692 with p=0.3746 represents the average deposit of the omitted category i.e. bank of Baroda. Along with the value of State Bank of India = -2.8263 with p value less than .05. Therefore, the difference is significant in nature.

Table -40 Summary of Above analysis

S.No	Name of Bank	Code of Bank	Variation in Growth of Net profit per branch	H0 (D)	H1 (D)
1	BANK OF BARODA	B01	S		Accept
2	BANK OF INDIA	B02	IS	Accept	
3	BANK OF MAHARASHTRA	B03	IS	Accept	
4	CANARA BANK	B04	IS	Accept	
5	CENTRAL BANK OF INDIA	B05	IS	Accept	
6	INDIAN BANK	B06	IS	Accept	
7	INDIAN OVERSEAS BANK	B07	IS	Accept	
8	PUNJAB AND SIND BANK	B08	IS	Accept	
9	PUNJAB NATIONAL BANK	B09	IS	Accept	
10	STATE BANK OF INDIA	B10	S		Accept
11	UCO BANK	B11	IS	Accept	
12	UNION BANK OF INDIA	B12	IS	Accept	

S= Significant, IS = Insignificant

Source Author's own

Analysis of Net Profits to total assets

H0(P): There is no significant variation in **Net Profits to total assets** among different Public sector banks in India.

H1(P): There is significant variation in **Net Profits to total assets** among different Public sector banks in India

Table- 41 Analysis of Net Profits to total assets

Variable	Coeff.	Std. Err.	t-Stat.	P-Stat
C	0.0023	0.0025	0.9179	0.3607
B2	-0.0036	0.0036	-0.9889	0.3249
B3	-0.0046	0.0036	-1.2651	0.2085
B4	-0.0008	0.0036	-0.2251	0.8223
B5	-0.0070	0.0036	-1.9430	0.0546
B6	0.0033	0.0036	0.9294	0.3547
B7	-0.0110	0.0036	-3.0603	0.0028
B8	-0.0049	0.0036	-1.3703	0.1734
B9	-0.0023	0.0036	-0.6296	0.5303
B10	0.0016	0.0036	0.4471	0.6557
B11	-0.0072	0.0036	-1.9890	0.0492
B12	-0.0015	0.0036	-0.4134	0.6801
ΔR^2	0.12542			
F-stat	2.551388			

Source: Analysis of Data in Eview12

Interpretation: Table 41 reports the results with Profit (PAT_TA) as the main dependent variable. The constant term 0.0023 with p= 0.3607 represents the average deposit of the omitted category i.e. bank of Baroda. Along with the values of Indian Overseas Bank= -0.0110 Punjab And Sind

Bank=-48.6918, State Bank of India =-44.25548, UCO Bank= -0.0072, with p value less than .05. Therefore, the difference is significant in nature.

Table-42 Summary of Above analysis

S.No	Name of Bank	Code of Bank	Variation in Net Profits to total assets	H0 (D)	**H1 (D)**
1	BANK OF BARODA	B01	S		Accept
2	BANK OF INDIA	B02	IS	Accept	
3	BANK OF MAHARASHTRA	B03	IS	Accept	
4	CANARA BANK	B04	IS	Accept	
5	CENTRAL BANK OF INDIA	B05	IS	Accept	
6	INDIAN BANK	B06	IS	Accept	
7	INDIAN OVERSEAS BANK	B07	S		Accept
8	PUNJAB AND SIND BANK	B08	S		Accept
9	PUNJAB NATIONAL BANK	B09	IS	Accept	
10	STATE BANK OF INDIA	B10	S		Accept
11	UCO BANK	B11	S		Accept
12	UNION BANK OF INDIA	B12	IS	Accept	

S= Significant, IS = Insignificant

Source Author's own

Analysis of Growth of Net Profits to total assets

H0(P): There is no significant variation in **Growth of Net Profits to total assets** among different Public sector banks in India.

H1(P): There is significant variation in **Growth of Net Profits to total assets** among different Public sector banks in India.

Table -43 Analysis of Growth of Net Profits to total assets

Variable	Coeff.	Std. Err.	t-Stat.	P-Stat
C	-0.9073	0.9437	-0.9615	0.3387
B2	0.3070	1.3346	0.2300	0.8186
B3	-0.6164	1.3346	-0.4619	0.6452
B4	-1.1419	1.3346	-0.8556	0.3943
B5	0.2850	1.3346	0.2135	0.8314
B6	1.0044	1.3346	0.7526	0.4535
B7	1.3707	1.3346	1.0271	0.3070
B8	0.7080	1.3346	0.5305	0.5970
B9	-0.4361	1.3346	-0.3268	0.7445
B10	2.6375	1.3346	1.9763	0.0510
B11	0.5146	1.3346	0.3856	0.7007
B12	-0.5475	1.3346	-0.4102	0.6825
ΔR^2	0.018263			
F-stat	1.180955			

Source: Analysis of Data in Eview12

Interpretation: Table 43 reports the results with Profit (PAT_TA_G) as the main dependent variable. The constant term -0.9073 with p=.0.3387 represents the average deposit of the omitted category i.e. bank of Baroda. Along with the values of Bank of India   to   Union   Bank   of India with p value more than .05. Therefore, the difference is insignificant in nature.

Table-44 Summary of Above analysis

S.No	Name of Bank	Code of Bank	Variation in Growth of Net Profits to total assets	H0 (D)	H1 (D)
1	BANK OF BARODA	B01	IS	Accept	
2	BANK OF INDIA	B02	IS	Accept	
3	BANK OF MAHARASHTRA	B03	IS	Accept	
4	CANARA BANK	B04	IS	Accept	
5	CENTRAL BANK OF INDIA	B05	IS	Accept	
6	INDIAN BANK	B06	IS	Accept	
7	INDIAN OVERSEAS BANK	B07	IS	Accept	
8	PUNJAB AND SIND BANK	B08	IS	Accept	
9	PUNJAB NATIONAL BANK	B09	IS	Accept	
10	STATE BANK OF INDIA	B10	IS	Accept	
11	UCO BANK	B11	IS	Accept	
12	UNION BANK OF INDIA	B12	IS	Accept	

S= Significant, IS = Insignificant

Source Author's own

Analysis of Net Profits to total Earning

H0(P): There is no significant variation in **Net Profits to total Earning** among different Public sector banks in India.

H1(P): There is significant variation **Net Profits to total Earning** among different Public sector banks in India.

Table-45 Analysis of Net Profits to total Earning

Variable	Coeff.	Std. Err.	t-Stat.	P-Stat
C	0.0337	0.0323	1.0422	0.2996
B2	-0.0518	0.0457	-1.1336	0.2595
B3	-0.0650	0.0457	-1.4218	0.1580
B4	-0.0176	0.0457	-0.3838	0.7019
B5	-0.0926	0.0457	-2.0251	0.0453
B6	0.0318	0.0457	0.6957	0.4881
B7	-0.1346	0.0457	-2.9440	0.0040
B8	-0.0723	0.0457	-1.5816	0.1167
B9	-0.0395	0.0457	-0.8642	0.3894
B10	0.0126	0.0457	0.2750	0.7838
B11	-0.1032	0.0457	-2.2556	0.0261
B12	-0.0275	0.0457	-0.6016	0.5487
ΔR^2	0.111853			
F-stat	2.362434			

Source: Analysis of Data in Eview12

Interpretation: Table 45 reports the results with Profit (PAT_TE) as the main dependent variable. The constant term 0.0337 with p= 0.2996 represents the average deposit of the omitted category i.e. bank of Baroda. Along with the values of Indian Overseas Bank= -0.1346, UCO Bank= 0.1032, with p value less than .05. Therefore, the difference is significant in nature.

Table-46 Summary of Above analysis

S.No	Name of Bank	Code of Bank	Variation in Net Profits to total Earning	H0 (D)	H1 (D)
1	BANK OF BARODA	B01	S		Accept
2	BANK OF INDIA	B02	IS	Accept	
3	BANK OF MAHARASHTRA	B03	IS	Accept	
4	CANARA BANK	B04	IS	Accept	
5	CENTRAL BANK OF INDIA	B05	IS	Accept	
6	INDIAN BANK	B06	IS	Accept	
7	INDIAN OVERSEAS BANK	B07	S		Accept
8	PUNJAB AND SIND BANK	B08	IS	Accept	
9	PUNJAB NATIONAL BANK	B09	IS	Accept	
10	STATE BANK OF INDIA	B10	IS	Accept	
11	UCO BANK	B11	S		Accept
12	UNION BANK OF INDIA	B12	IS	Accept	

S= Significant, IS = Insignificant

Source Author's own

Analysis of Growth of Net Profits to Total Earning

H0(P): There is no significant variation in **Growth of Net Profits to Total Earning** among different Public sector banks in India.

H1(P)There is significant variation in **Growth of Net Profits to Total Earning** among different Public sector banks in India.

Table-47 Analysis of Growth of Net Profits to Total Earning

Variable	Coeff.	Std. Err.	t-Stat.	P-Stat
C	-0.878478	0.968384	-0.907159	0.3666
B2	0.271294	1.369502	0.198097	0.8434
B3	-0.648019	1.369502	-0.473179	0.6372
B4	-1.191845	1.369502	-0.870276	0.3863
B5	0.302518	1.369502	0.220897	0.8256
B6	1.010429	1.369502	0.737807	0.4624
B7	1.355383	1.369502	0.989691	0.3248
B8	0.667204	1.369502	0.487187	0.6272
B9	-0.517743	1.369502	-0.378052	0.7062
B10	2.642188	1.369502	1.929306	0.0566
B11	0.521506	1.369502	0.3808	0.7042
B12	-0.645787	1.369502	-0.471548	0.6383
ΔR^2	0.017131			
F-stat	1.169543			

Source: Analysis of Data in Eview12

Interpretation: Table 47 reports the results with Profit (PAT_TE_G) as the main dependent variable. The constant term -0.878478 with p=0.3666 represents the average deposit of the omitted category i.e. bank of Baroda. Along with the values of Bank of India to Union Bank of India with p value more than .05. Therefore, the difference is insignificant in nature.

Table- 48 Summary of Above analysis

S.No	Name of Bank	Code of Bank	Variation in Growth of Net Profits to Total Earning	H0 (D)	H1 (D)
1	BANK OF BARODA	B01	IS	Accept	
2	BANK OF INDIA	B02	IS	Accept	
3	BANK OF MAHARASHTRA	B03	IS	Accept	
4	CANARA BANK	B04	IS	Accept	
5	CENTRAL BANK OF INDIA	B05	IS	Accept	
6	INDIAN BANK	B06	IS	Accept	
7	INDIAN OVERSEAS BANK	B07	IS	Accept	
8	PUNJAB AND SIND BANK	B08	IS	Accept	
9	PUNJAB NATIONAL BANK	B09	IS	Accept	
10	STATE BANK OF INDIA	B10	IS	Accept	
11	UCO BANK	B11	IS	Accept	
12	UNION BANK OF INDIA	B12	IS	Accept	

S= Significant, IS = Insignificant

Source Author's own

Analysis of Net Interest Margin

H0(P): There is no significant variation in **Net Interest Margin** among different Public sector banks in India.

H1(P)There is significant variation in **Net Interest Margin** among different Public sector banks in India.

Table-49 Analysis of Net Interest Margin

Variable	Coeff.	Std. Err.	t-Stat.	P-Stat
C	2.281444696	0.08708957	26.19653175	1.32522E-48
B01	-0.06611535	0.123163252	-0.536810657	0.592502554
B02	-0.21996048	0.123163252	-1.785926183	0.076917585
B03	0.285196801	0.123163252	2.315599804	0.022469348
B04	-0.30261773	0.123163252	-2.45704567	0.015600378
B05	-0.0540364	0.123163252	-0.438737987	0.661727839
B06	0.354738628	0.123163252	2.880231104	0.004793179
B07	-0.14430161	0.123163252	-1.171628792	0.243924393
B08	-0.23334702	0.123163252	-1.894615618	0.060817873
B09	0.297770469	0.123163252	2.417689245	0.017293397
B10	0.321109986	0.123163252	2.607189899	0.010419058
B11	-0.17366889	0.123163252	-1.410070651	0.1613923
B12	-0.84569897	0.123163252	3.487482030	0.73248
ΔR^2	0.44292			
F-stat	7.8063			

Source: Analysis of Data in Eview12

Table-50 Summary of Above analysis

S.No	Name of Bank	Code of Bank	Variation in Net Interest Margin	H0 (D)	H1 (D)
1	BANK OF BARODA	B01	IS	Accept	
2	BANK OF INDIA	B02	IS	Accept	
3	BANK OF MAHARASHTRA	B03	S		Accept
4	CANARA BANK	B04	S		Accept
5	CENTRAL BANK OF INDIA	B05	IS	Accept	
6	INDIAN BANK	B06	S		Accept
7	INDIAN OVERSEAS BANK	B07	S		Accept
8	PUNJAB AND SIND BANK	B08	IS	Accept	
9	PUNJAB NATIONAL BANK	B09	IS	Accept	
10	STATE BANK OF INDIA	B10	S		Accept
11	UCO BANK	B11	IS	Accept	
12	UNION BANK OF INDIA	B12	IS	Accept	

S= Significant, IS = Insignificant

Source Author's own

<u>**Summary of Objective - 2**</u>

S.No.	Name of Bank	Code	Variation in Operating Profit per branch	Variation in Growth of Operating profits per branch	Variation in Growth of Operating profits	Variation in Operating profits to total earnings	Variation in Growth of operating profit to total earning	Variation in Net profit per branch	Variation in Growth of Net profit per branch	Variation in Net Profits to total assets	Variation in Growth of Net Profits to total assets	Variation in Net Profits to total Earning	Variation in Growth of Net Profits to Total Earning
							S= Significant , IS = Insignificant						
1	BANK OF BARODA	B01	IS	IS	IS	S	IS	S	S	S	IS	S	IS
2	BANK OF INDIA	B02	S	IS	IS	S	IS	IS	IS	IS	IS	IS	IS
3	BANK OF MAHARASHTRA	B03	S	IS	IS	S	IS	IS	IS	IS	IS	IS	IS
4	CANARA BANK	B04	S	IS	IS	S	IS	IS	IS	IS	IS	IS	IS
5	CENTRAL BANK OF INDIA	B05	S	IS	IS	S	IS	IS	IS	IS	IS	IS	IS
6	INDIAN BANK	B06	S	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
7	INDIAN OVERSEAS BANK	B07	S	IS	IS	S	IS	S	IS	S	IS	S	IS
8	PUNJAB AND SIND BANK	B08	S	IS	IS	S	IS	IS	IS	S	IS	IS	IS
9	PUNJAB NATIONAL BANK	B09	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
10	STATE BANK OF INDIA	B10	S	IS	IS	IS	IS	IS	S	S	IS	IS	IS
11	UCO BANK	B11	S	IS	IS	IS	IS	S	IS	S	IS	S	IS
12	UNION BANK OF INDIA	B12	S	IS	IS	S	IS	IS	IS	IS	IS	IS	IS

Source: Author's own

Figure 44 Summary results for Objective 2

4.6 RESULTS FOR FIXED EFFECT MODEL

Objective 3 Impact of income generated by information technology adoption on Bank earnings

Part 1

Impact of Information technology adoption on Interest Earnings

The redundant fixed effects results are estimated to check whether we have to apply pooled data or panel data. If p-value is less than 0.10 then we apply panel data and if it is more than 0.10 then we apply pooled data. This has to be checked for both cross-section and time-series. The current results show that we have to apply panel data for both cross-section and time-series for all the equations. The Hausman test is done to check whether we have to apply Fixed Effect Model (FEM) or Random Effect Model (REM). If p-value is more than 0.1 then we apply REM and if p-

value is less than 0.10 then we apply FEM. In the present case the results show that we have to apply FEM for all the equations. The coefficients of different variable show their impact (positive or negative) on the dependent variable. The p-value show whether this impact is significant (p-value less than 0.10) or insignificant (p-value more than 0.10). The overall validity of model is tested from F-statistics. All the models are significant because the p-value of F-statistics is less than 0.10 in all the cases. The results are highlighted below:

Table-51 Analysis of ATM on site and interest Earning

Dependent Variable: Interest Earnings				
Variable	Coeff.	Std. Err.	t-Stat.	P-Stat
C	1.608742	1.364742	1.178788	0.2415
LNAGE	-0.317543	0.288271	-1.101542	0.2735
LSIZE	0.053823	0.015047	3.577088	0.0006
D_TA	0.016506	0.019605	0.841893	0.402
EMP_BR	0.002455	0.00201	1.221211	0.2251
ATM_ON_BR	-0.001006	0.012893	-0.078052	0.938
F-stat.	18.83044			0

Source: Analysis of Data in Eview12

Interpretation: The value redundant fixed effect is 13.132017 with p-values 0.00. Therefore, panel data applied for both cross-section and time-series for all the equations. The Hausman test value is 95.396975 with p value 0.000 resulting in the application of we have to apply FEM for all the equations. Table 22 shows that LSIZE=0.053823 (p=0.0006) is the only control variable that has turned out to be significant. The control variables LNAGE=-0.317543 (p=0.2735), D_TA=0.016506 (p=0.402) EMP_BR=0.002455 (p=0.2251) are insignificant at the conventional levels. The table further highlights few important points. It is quite clear that the variable ATM_ON_BR=-0.001006 (p=0.938) and its squared term are insignificant at the conventional levels. The table further shows that the coefficient of the dummy variable is positive but insignificant at the 10 percent level. This indicates that the relationship between number of ATM on site and interest on earning of public sector bank is insignificant. Table finally presents the analysis of the model specification. It is evident from the table that the F-statistics obtained is quite

high and is also significant with p<0.01. This proves that the overall model is valid and the results are robust.

Dependent Variable: Interest Earnings

S= Significant, IS = Insignificant

Table-52 Summary of Above analysis

C	
LNAGE	IS
LSIZE	S
D_TA	IS
EMP_BR	IS
ATM_ON_BR	IS

Source Author's own

Conclusion:

Number of ATM on site and interest earning of public sector bank is insignificant.

Table-53 Analysis of ATM off site and interest earning

Dependent Variable: Interest Earnings				
Variable	**Coeff.**	**Std. Err.**	**t-Stat.**	**P-Stat**
C	2.069167	1.198094	1.727048	0.0874
LNAGE	-0.414661	0.250521	-1.655196	0.1012
LSIZE	0.052045	0.012641	4.117158	0.0001
D_TA	0.014393	0.027791	0.517899	0.6057
EMP_BR	0.002606	0.002257	1.154179	0.2514
ATM_OFF_BR	0.011001	0.01146	0.959941	0.3395
F-stat	19.05115			0

Source: Analysis of Data in Eview12

Interpretation: The value redundant fixed effect is 14.059552 with p-values 0.00. Therefore, panel data applied for both cross-section and time-series for all the equations. The Hausman test value is 103.79783 with p value 0.000 resulting in the application of we have to apply FEM for all the equations. Table 20 shows that LSIZE=0.052045(p=0.0001) is the only control variable that has turned out to be significant. The control variables LNAGE=-0.414661(p=0.1012), D_TA 0.014393 (p=0.6057), EMP_BR=0.002606(p=0.2514) are insignificant at the conventional levels. The table further highlights few important points. It is quite clear that the variable ATM_OFF_BR= 0.011001 (p=0.3395) and its squared term are insignificant at the conventional levels. The table further shows that the coefficient of the dummy variable is positive but insignificant at the 10 percent level. This indicates that the relationship between number of ATM off site and interest on earning of public sector bank is insignificant. Table 20 finally presents the analysis of the model specification. It is evident from the table that the F-statistics obtained is quite high =19.05115 and is also significant with p<0.01. This proves that the overall model is valid and the results are robust.

Dependent Variable: Interest Earnings

S= Significant, IS = Insignificant

Table-54 Summary of Above analysis

C	
LNAGE	IS
LSIZE	S
D_TA	IS
EMP_BR	IS
ATM_OFF_BR	IS

Source Author's own

Conclusion

Number of ATM off site and interest earning of public sector bank is insignificant.

Table-55 Analysis of Total number of ATM's and interest earning

Dependent Variable: Interest Earnings				
Variable	Coeff.	Std. Err.	t-Stat.	P-Stat
C	1.870917	1.150756	1.625816	0.1073
LNAGE	-0.37654	0.241953	-1.55625	0.1230
LSIZE	0.053461	0.012524	4.268805	0.0000
D_TA	0.015943	0.027756	0.574384	0.5671
EMP_BR	0.002724	0.00228	1.194581	0.2353
N_ATM_BR	0.007406	0.009597	0.771625	0.4423
F-stat	18.97279			0

Source: Analysis of Data in Eview12

Interpretation: The value redundant fixed effect is 14.502781 with p-values 0.00. Therefore, panel data applied for both cross-section and time-series for all the equations. The Hausman test value is 104.945758 with p value 0.000 resulting in the application of we have to apply FEM for all the equations. Table 21 shows that LSIZE=0.053461 (p=0.0000) is the only control variable that has turned out to be significant. The control variables LNAGE=-0.37654 (p=0.1230), D_TA=0.015943 (p=0.5671), EMP_BR=0.002724 (p=0.2353) are insignificant at the conventional levels. The table further highlights few important points. It is quite clear that the variable N_ATM_BR =0.007406 (p=0.4423) and its squared term are insignificant at the conventional levels. The table further shows that the coefficient of the dummy variable is positive but insignificant at the 10 percent level. This indicates that the relationship between total number of ATM's and interest on earning of public sector bank is insignificant. Table 21 finally presents the analysis of the model specification. It is evident from the table that the F-statistics obtained is quite high =18.97279 and is also significant with p<0.01. This proves that the overall model is valid and the results are robust.

Dependent Variable: Interest Earnings

S= Significant, IS = Insignificant

Table-56 Summary of Above analysis

C	
LNAGE	IS
LSIZE	*S*
D_TA	*IS*
EMP_BR	*IS*
N_ATM_BR	*IS*

Source Author's own

Conclusion

Total number of ATM's and interest earning of public sector bank is insignificant

Table-57 Analysis of Number of POS terminals- On-line and interest earning

Dependent Variable: Interest Earnings				
Variable	**Coeff.**	**Std. Err.**	**t-Stat.**	**P-Stat**
C	2.869069	1.28571	2.231505	0.0280
LNAGE	-0.579431	0.268071	-2.161485	0.0332
LSIZE	0.046982	0.012909	3.639444	0.0004
D_TA	0.043354	0.031041	1.396665	0.1658
EMP_BR	0.001841	0.002253	0.817072	0.4160
N_POS_BR	0.000923	0.000507	1.82155	0.0717
F-stat	19.62708			0

Source: Analysis of Data in Eview12

Interpretation: The value redundant fixed effect is 13.513878 with p-values 0.00. Therefore, panel data applied for both cross-section and time-series for all the equations. The Hausman test value is 97.905934 with p value 0.000 resulting in the application of we have to apply FEM for all the equations. Table 22 shows that LSIZE=0.046982 (p=0.0332) LNAGE=-0.579431 (p=0.0332), are the only control variable that has turned out to be significant.   The control variables D_TA=0.043354(p=0.4160), EMP_BR=0.001841 (p=0.4160) are insignificant at the conventional levels. The table further highlights few important points. It is quite clear that the variable N_POS_BR = 0.000923 (p=0.0717) and its squared term are insignificant at the conventional levels. The table further shows that the coefficient of the dummy variable is positive but insignificant at the 10 percent level. This indicates that the relationship between Number of POS terminals- On-line and interest on earning of public sector bank is insignificant. Table 22 finally presents the analysis of the model specification. It is evident from the table that the F-statistics obtained is quite high =19.62708 and is also significant with p<0.01. This proves that the overall model is valid and the results are robust.

Dependent Variable: Interest Earnings

S= Significant, IS = Insignificant

Table-58 Summary of Above analysis

C	
LNAGE	S
LSIZE	S
D_TA	IS
EMP_BR	IS
N_POS_BR	IS

Source Author's own

Conclusion

Number of POS terminals- On-line and interest earning of public sector bank is insignificant

Table 59 Analysis of Number of POS terminals- On-line and interest earning

Dependent Variable: Interest Earnings				
Variable	Coeff.	Std. Err.	t-Stat.	P-Stat
C	1.736003	1.125472	1.542466	0.1263
LNAGE	-0.349391	0.237213	-1.472897	0.1441
LSIZE	0.054971	0.012672	4.338023	0.0000
D_TA	0.016838	0.027789	0.605926	0.5460
EMP_BR	0.002312	0.002281	1.013771	0.3133
N_DC_BR	7.27E-07	1.33E-06	0.546536	0.5860
F-stat	18.90148			0

Source: Analysis of Data in Eview12

Interpretation: The value redundant fixed effect is 11.565771 with p-values 0.00. Therefore, panel data applied for both cross-section and time-series for all the equations. The Hausman test value is 78.552853 with p value 0.000 resulting in the application of we have to apply FEM for all the equations. Table 23 shows that LSIZE=0.054971 (p=0.000) is the only control variable that has turned out to be significant. The control variables LNAGE=--0.349391 (p=0.1441), D_TA=0.016838 (p=0.5460) EMP_BR=0.002312 (p=0.3133) are insignificant at the conventional levels. The table further highlights few important points. It is quite clear that the variable N_DC_BR =7.27E-07 (p=0.5860) and its squared term are insignificant at the conventional levels. The table further shows that the coefficient of the dummy variable is positive but insignificant at the 10 percent level. This indicates that the relationship between No. of outstanding cards - Debit Cards and interest on earning of public sector bank is insignificant. Table 23 finally presents the analysis of the model specification. It is evident from the table that the F-statistics obtained is quite high =18.90148 and is also significant with p<0.01. This proves that the overall model is valid and the results are robust.

Dependent Variable: Interest Earnings

S= Significant, IS = Insignificant

Table-60 Summary of Above analysis

C	
LNAGE	IS
LSIZE	S
D_TA	IS
EMP_BR	IS
N_DC_BR	IS

Source Author's own

Conclusion

No. of outstanding cards - Debit Cards and interest earning of public sector bank is insignificant

Table 61 Analysis of No. of outstanding cards - Credit Cards and interest earning

Dependent Variable: Interest Earnings				
Variable	**Coeff.**	**Std. Err.**	**t-Stat.**	**P-Stat**
C	4.927477	1.380761	3.568667	0.0006
LNAGE	-0.98126	0.283021	-3.467091	0.0008
LSIZE	0.032353	0.013181	2.454514	0.0159
D_TA	-0.004808	0.026736	-0.179848	0.8577
EMP_BR	0.001849	0.002129	0.868707	0.3872
N_CC_BR	0.000166	4.58E-05	3.619733	0.0005
F-stat.	21.97843			0

Source: Analysis of Data in Eview12

Interpretation: The value redundant fixed effect is 15.14703 with p-values 0.00. Therefore, panel data applied for both cross-section and time-series for all the equations. The Hausman test value is 113.568416 with p value 0.000 resulting in the application of we have to apply FEM for all the equations. Table 19 shows that LSIZE=0.032353 (p=0.0159), LNAGE=--0.98126 (p=0.0008) is the only control variable that has turned out to be significant. The control variables, D_TA=-0.004808 (p=0.8577) EMP_BR=0.001849 (p=0.3872) are insignificant at the conventional levels. The table further highlights few important points. It is quite clear that the variable N_CC_BR =0.000166 (p=0.0005) and its squared term are insignificant at the conventional levels. The table further shows that the coefficient of the dummy variable is positive but insignificant at the 10 percent level. This indicates that the relationship between No .of outstanding cards - Credit Cards and interest on earning of public sector bank is insignificant. Table 24 finally presents the analysis of the model specification. It is evident from the table that the F-statistics obtained is quite high =18.83044 and is also significant with p<0.01. This proves that the overall model is valid and the results are robust.

Dependent Variable: Interest Earnings

S= Significant, IS = Insignificant

Table-62 Summary of Above analysis

C	
LNAGE	S
LSIZE	S
D_TA	IS
EMP_BR	IS
N_CC_BR	IS

Source Author's own

Conclusion

No. of outstanding cards - Credit Cards and interest earning of public sector bank is significant.

Table-63 Analysis of No. of Transactions- Credit Card- Actual at ATM and interest earning

Dependent Variable: Interest Earnings				
Variable	Coeff.	Std. Err.	t-Stat.	P-Stat
C	1.650467	1.128734	1.462229	0.147
LNAGE	-0.325307	0.23428	-1.388539	0.1683
LSIZE	0.05319	0.013138	4.048491	0.0001
D_TA	0.016607	0.027825	0.596848	0.552
EMP_BR	0.002508	0.00227	1.104716	0.2721
ATM_T_CC_BR	0.000372	0.001957	0.190059	0.8497
F-stat	18.83838			0

Source: Analysis of Data in Eview12

Interpretation: The value redundant fixed effect is 14.009255 with p-values 0.00. Therefore, panel data applied for both cross-section and time-series for all the equations. The Hausman test value is 101.832381with p value 0.000 resulting in the application of we have to apply FEM for all the equations. Table 25 shows that LSIZE=0.05319 (p=0.0001) is the only control variable that has turned out to be significant. The control variables LNAGE=--0.325307 (p=0.1683), D_TA=0.016607 (p=0.552) EMP_BR=0.002508 (p=0.2721) are insignificant at the conventional levels. The table further highlights few important points. It is quite clear that the variable ATM_T_CC_BR =0.000372 (p=0.8497) and its squared term are insignificant at the conventional levels. The table further shows that the coefficient of the dummy variable is positive but insignificant at the 10 percent level. This indicates that the relationship between numbers of No. of Transactions- Credit Card- Actual at ATM and interest on earning of public sector bank is insignificant. Table 25 finally presents the analysis of the model specification. It is evident from the table that the F-statistics obtained is quite high =18.83838 and is also significant with p<0.01. This proves that the overall model is valid and the results are robust.

Dependent Variable: Interest Earnings

S= Significant, IS = Insignificant

Table-64 Summary of Above analysis

C	
LNAGE	IS
LSIZE	S
D_TA	IS
EMP_BR	IS
ATM_T_CC_BR	IS

Source Author's own

Conclusion

No. of Transactions- Credit Card- Actual at ATM and interest earning of public sector bank is insignificant.

Table-65 Analysis of No. of Transactions- Credit Card- Actual at POS and interest earning

Dependent Variable: Interest Earnings				
Variable	**Coeff.**	**Std. Err.**	**t-Stat.**	**P-Stat**
C	5.980638	1.449909	4.124838	0.0001
LNAGE	-1.19811	0.297303	-4.029935	0.0001
LSIZE	0.027877	0.013072	2.132584	0.0356
D_TA	-0.01076	0.026347	-0.408397	0.6839
EMP_BR	0.001804	0.002084	0.865976	0.3887
POS_T_CC_BR	5.93E-05	1.41E-05	4.206625	0.0001
F-stat	23.08226	0		

Source: Analysis of Data in Eview12

Interpretation: The value redundant fixed effect is 15.686227with p-values 0.00. Therefore, panel data applied for both cross-section and time-series for all the equations. The Hausman test value is 119.613825 with p value 0.000 resulting in the application of we have to apply FEM for all the equations. Table 27 shows that LSIZE=0.027877 (p=0.0356) and variables LNAGE=--1.19811 (p=0.0356) are the only control variable that has turned out to be significant. The control variable D_TA=-0.01076 (p=0.6839) EMP_BR=0.001804 (p=0.3887) are insignificant at the conventional levels. The table further highlights few important points. It is quite clear that the variable POS_T_CC_BR =-5.93E-05 (p=0.0001) and its squared term are significant at the conventional levels. The table further shows that the coefficient of the dummy variable is positive but insignificant at the 10 percent level. This indicates that the relationship between No. of Transactions- Credit Card- Actual at POS and interest on earning of public sector bank is significant. Table 27 finally presents the analysis of the model specification. It is evident from the table that the F-statistics obtained is quite high =23.08226 and is also significant with p<0.01. This proves that the overall model is valid and the results are robust.

Dependent Variable: Interest Earnings

S= Significant, IS = Insignificant

Table-66 Summary of Above analysis

C	
LNAGE	S
LSIZE	S
D_TA	IS
EMP_BR	IS
POS_T_CC_BR	S

Source Author's own

Conclusion

No. of Transactions- Credit Card- Actual at POS and interest earning of public sector bank is significant.

Table -67 Analysis of No. of Transactions- Debit Card- Actual at POS and interest earning.

Variable	Coeff.	Std. Err.	t-Stat.	P-Stat
Dependent Variable: Interest Earnings				
C	2.393145	1.373249	1.742688	0.0847
LNAGE	-0.474582	0.282364	-1.680747	0.0961
LSIZE	0.048373	0.01378	3.510437	0.0007
D_TA	0.014019	0.02783	0.503752	0.6156
EMP_BR	0.002339	0.002258	1.035802	0.303
POS_T_DC_BR	4.09E-06	4.29E-06	0.95418	0.3424
F-stat	19.0485			0

Source: Analysis of Data in Eview12

Interpretation: The value redundant fixed effect is 9.471535 with p-values 0.00. Therefore, panel data applied for both cross-section and time-series for all the equations. The Hausman test value is 59.09431 with p value 0.000 resulting in the application of we have to apply FEM for all the equations. Table 28 shows that LSIZE=0.048373 (p=0.0007) is the only control variable that has turned out to be significant. The control variables LNAGE=-0.474582 (p=0.0961), D_TA=0.014019 (p=0.6156) EMP_BR=0.002339 (p=0.303) are insignificant at the conventional levels. The table further highlights few important points. It is quite clear that the variable POS_T_DC_BR = 4.09E-06 (p=0.3424) and its squared term are insignificant at the conventional levels. The table further shows that the coefficient of the dummy variable is positive but insignificant at the 10 percent level. This indicates that the relationship between No. of Transactions- Debit Card- Actual at POS and interest on earning of public sector bank is insignificant. Table 28 finally presents the analysis of the model specification. It is evident from the table that the F-statistics obtained is quite high =19.0485 and is also significant with p<0.01. This proves that the overall model is valid and the results are robust.

Dependent Variable: Interest Earnings

S= Significant, IS = Insignificant

Table-68 Summary of Above analysis

C	
LNAGE	S
LSIZE	IS
D_TA	IS
EMP_BR	IS
POS_T_DC_BR	IS

Source Author's own

Conclusion

No. of Transactions- Debit Card- Actual at POS and interest earning of public sector bank is insignificant.

Objective 3 Impact of income generated by information technology adoption on Non interest earnings

Part 2

Table -69 Analysis of No. of ATM on site and Non-Int. Earnings

Dependent Variable: Non-Int. Earnings				
Variable	**Coeff.**	**Std. Err.**	**t-Stat.**	**P-Stat**
C	-0.608742	1.364742	-0.446049	0.6566
LNAGE	0.317543	0.288271	1.101542	0.2735
LSIZE	-0.053823	0.015047	-3.577088	0.0006
D_TA	-0.016506	0.019605	-0.841893	0.402
EMP_BR	-0.002455	0.00201	-1.221211	0.2251
ATM_ON_BR	0.001006	0.012893	0.078052	0.938
F-stat.	18.83044			0

Source: Analysis of Data in Eview12

Interpretation: The value redundant fixed effect is 13.132017with p-values 0.00. Therefore, panel data applied for both cross-section and time-series for all the equations. The Hausman test value is 95.396975 with p value 0.000 resulting in the application of we have to apply FEM for all the equations. Table 29 shows that LSIZE= -0.053823 (p=0.0006) is the only control variable that has turned out to be significant. The control variables LNAGE= -0.317543 (p=0.2735), D_TA=-0.016506 (p=0.402) EMP_BR=0.002455 (p=0.2251) are insignificant at the conventional levels. The table further highlights few important points. It is quite clear that the variable ATM_ON_BR=-0.001006 (p=0.938) and its squared term are insignificant at the conventional levels. The table further shows that the coefficient of the dummy variable is positive but insignificant at the 10 percent level. This indicates that the relationship between number of ATM on site and Non-Int. Earnings of public sector bank is insignificant. Table 29 finally presents the analysis of the model specification. It is evident from the table that the F-statistics obtained is quite high =18.83044 and is also significant with p<0.01. This proves that the overall model is valid and the results are robust.

Dependent Variable: Interest Earnings

S= Significant, IS = Insignificant

Table-70 Summary of Above analysis

C	
LNAGE	S
LSIZE	IS
D_TA	IS
EMP_BR	IS
ATM_ON_BR	IS

Source Author's own

Conclusion

No. of ATM on site and Non-Int. Earnings of public sector bank is insignificant.

Table-71 Analysis of No. of ATM off site and Non-Int. Earnings

Dependent Variable: Non-Int. Earnings				
Variable	Coeff.	Std. Err.	t-Stat.	P-Stat
C	-1.069167	1.186617	-0.901021	0.3699
LNAGE	0.414661	0.255083	1.625592	0.1074
LSIZE	-0.052045	0.011757	-4.426831	0
D_TA	-0.014393	0.017607	-0.817461	0.4157
EMP_BR	-0.002606	0.002047	-1.273158	0.2061
ATM_OFF_BR	-0.011001	0.012473	-0.881966	0.38
F-stat.	19.05115			0

Source: Analysis of Data in Eview12

Interpretation: The value redundant fixed effect is 14.059552 with p-values 0.00. Therefore, panel data applied for both cross-section and time-series for all the equations. The Hausman test value is 103.79783 with p value 0.000 resulting in the application of we have to apply FEM for all the equations. Table 30 shows that LSIZE=-0.052045 (p=0.000) is the only control variable that has turned out to be significant. The control variables LNAGE=-0.414661 (p=0.1074), D_TA=-0.014393 (p=0.4157) EMP_BR=-0.002606 (p=0.2061) are insignificant at the conventional levels. The table further highlights few important points. It is quite clear that the variable ATM_OFF_BR =-0.011001 (p=0.38) and its squared term are insignificant at the conventional levels. The table further shows that the coefficient of the dummy variable is positive but insignificant at the 10 percent level. This indicates that the relationship between number of ATM off site and Non-Int. Earnings of public sector bank is insignificant. Table 30 finally presents the analysis of the model specification. It is evident from the table that the F-statistics obtained is quite high =19.05115 and is also significant with p<0.01. This proves that the overall model is valid and the results are robust.

Dependent Variable: Interest Earnings

S= Significant, IS = Insignificant

Table-72 Summary of Above analysis

C	
LNAGE	IS
LSIZE	S
D_TA	IS
EMP_BR	IS
ATM_OFF_BR	IS

Source Author's own

Conclusion

No. of ATM off site and Non-Int. Earnings of public sector bank is insignificant.

Table- 73 Analysis of No of ATMs and Non-Int. Earnings

Dependent Variable: Non-Int. Earnings				
Variable	**Coeff.**	**Std. Err.**	**t-Stat.**	**P-Stat**
C	-0.870917	1.150756	-0.756822	0.451
LNAGE	0.37654	0.241953	1.55625	0.123
LSIZE	-0.053461	0.012524	-4.268805	0
D_TA	-0.015943	0.027756	-0.574384	0.5671
EMP_BR	-0.002724	0.00228	-1.194581	0.2353
N_ATM_BR	-0.007406	0.009597	-0.771625	0.4423
F-stat	18.97279			0

Source: Analysis of Data in Eview12

Interpretation: The value redundant fixed effect is 14.502781with p-values 0.00. Therefore, panel data applied for both cross-section and time-series for all the equations. The Hausman test value

is 104.945758 with p value 0.000 resulting in the application of we have to apply FEM for all the equations. Table 31 shows that LSIZE=-0.053461 (p=0.000) is the only control variable that has turned out to be significant. The control variables LNAGE=-0.37654 (p=0.123), D_TA=-0.015943 (p=0.5671) EMP_BR=-0.002724 (p=0.2353) are insignificant at the conventional levels. The table further highlights few important points. It is quite clear that the variable N_ATM_BR =-0.007406 (p=0.4423) and its squared term are insignificant at the conventional levels. The table further shows that the coefficient of the dummy variable is positive but insignificant at the 10 percent level. This indicates that the relationship between Total Number of ATMs and Non-Int. Earnings of public sector bank is insignificant. Finally presents the analysis of the model specification. It is evident from the table that the F-statistics obtained is quite high =18.97279 and is also significant with p<0.01. This proves that the overall model is valid and the results are robust.

Dependent Variable: Interest Earnings

S= Significant, IS = Insignificant

Table-74 Summary of Above analysis

C	
LNAGE	IS
LSIZE	S
D_TA	IS
EMP_BR	IS
N_ATM_BR	IS

Source Author's own

Conclusion

No of ATMs and Non-Int. Earnings of public sector bank is insignificant

Table- 75 Analysis of Number of POS terminals- On-line and Non-Int. Earnings

Dependent Variable: Non-Int. Earnings				
Variable	**Coeff.**	**Std. Err.**	**t-Stat.**	**P-Stat**
C	-1.869069	1.28571	-1.453725	0.1494
L_NAGE	0.579431	0.268071	2.161485	0.0332
LSIZE	-0.046982	0.012909	-3.639444	0.0004
D_TA	-0.043354	0.031041	-1.396665	0.1658
EMP_BR	-0.001841	0.002253	-0.817072	0.416
N_POS_BR	-0.000923	0.000507	-1.82155	0.0717
F-stat	19.62708			0

Source: Analysis of Data in Eview12

Interpretation: The value redundant fixed effect is 13.513878 with p-values 0.00. Therefore, panel data applied for both cross-section and time-series for all the equations. The Hausman test value is 97.905934 with p value 0.000 resulting in the application of we have to apply FEM for all the equations. Table 32 shows that LSIZE=-0.046982 (p=0.0004) and LNAGE=-0.579431 (p=0.0332) are the only control variable that has turned out to be significant. The control variables, D_TA=-0.043354 (p=0.1658) EMP_BR=-0.001841 (p=0.416) are insignificant at the conventional levels. The table further highlights few important points. It is quite clear that the variable N_POS_BR =-0.000923 (p=0.0717) and its squared term are insignificant at the conventional levels. The table further shows that the coefficient of the dummy variable is positive but insignificant at the 10 percent level. This indicates that the relationship between Number of POS terminals- On-line and Non-Int. Earnings of public sector bank is insignificant. Table 32 finally presents the analysis of the model specification. It is evident from the table that the F-statistics obtained is quite high =19.62708 and is also significant with p<0.01. This proves that the overall model is valid and the results are robust.

Dependent Variable: Interest Earnings

S= Significant, IS = Insignificant

Table-76 Summary of Above analysis

C	
LNAGE	S
LSIZE	S
D_TA	IS
EMP_BR	IS
N_POS_BR	IS

Source Author's own

Conclusion

No. of POS terminals- On-line and Non-Int. Earnings of public sector bank is insignificant

Table -77 Analysis of No. of outstanding cards - Debit Cards and Non-Int. Earnings

Dependent Variable: Non-Int. Earnings				
Variable	**Coeff.**	**Std. Err.**	**t-Stat.**	**P-Stat**
C	-0.736003	1.125472	-0.65395	0.5147
LNAGE	0.349391	0.237213	1.472897	0.1441
LSIZE	-0.054971	0.012672	-4.338023	0
D_TA	-0.016838	0.027789	-0.605926	0.546
EMP_BR	-0.002312	0.002281	-1.013771	0.3133
N_DC_BR	-7.27E-07	1.33E-06	-0.546536	0.586
F-stat	18.90148			0

Source: Analysis of Data in Eview12

Interpretation: The value redundant fixed effect is 11.565771with p-values 0.00. Therefore, panel data applied for both cross-section and time-series for all the equations. The Hausman test value is 78.552853 with p value 0.000 resulting in the application of we have to apply FEM for all the equations. Table 33 shows that LSIZE=-0.054971 (p=0.000) is the only control variable that has turned out to be significant. The control variables LNAGE=-0.349391 (p=0.1441), D_TA=-0.016838 (p=0.546) EMP_BR=-0.002312 (p=0.3133) are insignificant at the conventional levels. The table further highlights few important points. It is quite clear that the variable N_DC_BR =-7.27E-07 (p=0.586) and its squared term are insignificant at the conventional levels. The table further shows that the coefficient of the dummy variable is positive but insignificant at the 10 percent level. This indicates that the relationship between No .of outstanding cards - Debit Cards and Non-Int. Earnings of public sector bank is insignificant. Table 33 finally presents the analysis of the model specification. It is evident from the table that the F-statistics obtained is quite high =18.90148and is also significant with p<0.01. This proves that the overall model is valid and the results are robust.

Dependent Variable: Interest Earnings

S= Significant, IS = Insignificant

Table-78 Summary of Above analysis

C	
LNAGE	IS
LSIZE	S
D_TA	IS
EMP_BR	IS
N_DC_BR	IS

Source Author's own

Conclusion

No. of outstanding cards - Debit Cards and Non-Int. Earnings of public sector bank is insignificant

Table-79 Analysis of No. of outstanding cards - Credit Cards and Non-Int. Earnings

Dependent Variable: Non-Int. Earnings				
Variable	Coeff.	Std. Err.	t-Stat.	P-Stat
C	-3.927477	1.380761	-2.844429	0.0055
LNAGE	0.98126	0.283021	3.467091	0.0008
LSIZE	-0.032353	0.013181	-2.454514	0.0159
D_TA	0.004808	0.026736	0.179848	0.8577
EMP_BR	-0.001849	0.002129	-0.868707	0.3872
N_CC_BR	-0.000166	4.58E-05	-3.619733	0.0005
F-stat	21.97843			0

Source: Analysis of Data in Eview12

Interpretation: The value redundant fixed effect is 15.14703 with p-values 0.00. Therefore, panel data applied for both cross-section and time-series for all the equations. The Hausman test value is 113.568416with p value 0.000 resulting in the application of we have to apply FEM for all the equations. Table 34 shows that LSIZE=-0.032353 (p=0.0159) and LNAGE=-0.98126 (p=0.0008) are the only control variable that has turned out to be significant. The control variables D_TA=0.004808 (p=0.8577) EMP_BR=-0.001849 (p=0.3872) are insignificant at the conventional levels. The table further highlights few important points. It is quite clear that the variable N_CC_BR -0.000166 (p=0.0005) and its squared term are significant at the conventional levels. The table further shows that the coefficient of the dummy variable is positive but insignificant at the 10 percent level. This indicates that the relationship between No .of outstanding cards - Credit Cards and Non-Int. Earnings of public sector bank is insignificant. Table 34 finally presents the analysis of the model specification. It is evident from the table that the F-statistics obtained is quite high =21.97843 and is also significant with p<0.01. This proves that the overall model is valid and the results are robust.

Dependent Variable: Interest Earnings

S= Significant, IS = Insignificant

Table-80 Summary of Above analysis

S= Significant , IS = Insignificant	
C	
LNAGE	S
LSIZE	S
D_TA	IS
EMP_BR	IS
N_CC_BR	IS

Source Author's own

Conclusion

No. of outstanding cards - Credit Cards and Non-Int. Earnings of public sector bank is insignificant

Table- 81 Analysis of No. of Transactions- Credit Card- Actual at ATM and Non-Int. Earnings

Dependent Variable: Non-Int. Earnings				
Variable	**Coeff.**	**Std. Err.**	**t-Stat.**	**P-Stat**
C	-0.650467	1.54111	-0.422077	0.6739
LNAGE	0.325307	0.326107	0.997548	0.3211
LSIZE	-0.05319	0.017331	-3.069053	0.0028
D_TA	-0.016607	0.021935	-0.757102	0.4509
EMP_BR	-0.002508	0.002266	-1.10659	0.2713
ATM_T_CC_BR	-0.000372	0.001572	-0.23666	0.8134
F-stat	18.83838			0

Source: Analysis of Data in Eview12

Interpretation: The value redundant fixed effect is 14.009255 with p-values 0.00. Therefore, panel data applied for both cross-section and time-series for all the equations. The Hausman test value is 101.832381 with p value 0.000 resulting in the application of we have to apply FEM for all the equations. Table 35shows that LSIZE=-0.05319 (p=0.0028) is the only control variable that has turned out to be significant. The control variables LNAGE=-0.325307 (p=0.3211), D_TA=-0.016607 (p=0.4509) EMP_BR=-0.002508 (p=0.8134) are insignificant at the conventional levels. The table further highlights few important points. It is quite clear that the variable ATM_T_CC_BR =-0.000372 (p=0.938) and its squared term are insignificant at the conventional levels. The table further shows that the coefficient of the dummy variable is positive but insignificant at the 10 percent level. This indicates that the relationship between No. of Transactions- Credit Card- Actual at ATM and Non-Int. Earnings of public sector bank is insignificant. Table 35 finally presents the analysis of the model specification. It is evident from the table that the F-statistics obtained is quite high =18.83838 and is also significant with p<0.01. This proves that the overall model is valid and the results are robust.

Dependent Variable: Interest Earnings

S= Significant, IS = Insignificant

Table-82 Summary of Above analysis

C	
LNAGE	IS
LSIZE	S
D_TA	IS
EMP_BR	IS
ATM_T_CC_BR	IS

Source Author's own

Conclusion

No. of Transactions- Credit Card- Actual at ATM and Non-Int. Earnings of public sector bank is insignificant

Table -83 Analysis of No. of Transactions- Debit Card- Actual at ATM and Non-Int. Earnings

Dependent Variable: **Interest Earnings**				
Variable	**Coeff.**	**Std. Err.**	**t-Stat.**	**P-Stat**
C	1.632079	1.094518	1.49114	0.1393
LNAGE	-0.31537	0.228616	-1.379474	0.171
LSIZE	0.052078	0.012604	4.131801	0.0001
D_TA	0.010479	0.028297	0.370312	0.712
EMP_BR	0.002304	0.002258	1.020479	0.3101
ATM_T_DC_BR	-1.22E-06	1.17E-06	-1.037927	0.302
F-stat	19.08859			0

Source: Analysis of Data in Eview12

Interpretation: The value redundant fixed effect is 13.100977 with p-values 0.00. Therefore, panel data applied for both cross-section and time-series for all the equations. The Hausman test value is 92.477586 with p value 0.000 resulting in the application of we have to apply FEM for all the equations. Table 26 shows that LSIZE=0.052078 (p=0.0001) is the only control variable that has turned out to be significant. The control variables LNAGE= -0.317543 (p=0.171), D_TA=0.010479 (p=0.712) EMP_BR=0.002304 (p=0.3101) are insignificant at the conventional levels. The table further highlights few important points. It is quite clear that the variable ATM_T_DC_BR =-1.22E-06 (p=0.302) and its squared term are insignificant at the conventional levels. The table further shows that the coefficient of the dummy variable is positive but insignificant at the 10 percent level. This indicates that the relationship between number of ATM on site and interest on earning of public sector bank is insignificant. Table 26 finally presents the analysis of the model specification. It is evident from the table that het F-statistics obtained is quite high =19.08859 and is also significant with p<0.01. This proves that the overall model is valid and the results are robust.

Dependent Variable: Interest Earnings

S= Significant, IS = Insignificant

Table-84 Summary of Above analysis

C	
LNAGE	IS
LSIZE	S
D_TA	IS
EMP_BR	IS
ATM_T_DC_BR	IS

Source Author's own

Conclusion

No. of Transactions- Debit Card- Actual at ATM and Non-Int. Earnings of public sector bank is insignificant.

Table- 85 Analysis of No. of Transactions- Credit Card- Actual at POS and Non-Int. Earnings

Dependent Variable: Non-Int. Earnings				
Variable	**Coeff.**	**Std. Err.**	**t-Stat.**	**P-Stat**
C	-4.980638	1.449909	-3.435139	0.0009
LNAGE	1.19811	0.297303	4.029935	0.0001
LSIZE	-0.027877	0.013072	-2.132584	0.0356
D_TA	0.01076	0.026347	0.408397	0.6839
EMP_BR	-0.001804	0.002084	-0.865976	0.3887
POS_T_CC_BR	-5.93E-05	1.41E-05	-4.206625	0.0001
F-stat	23.08226			0

Interpretation: The value redundant fixed effect is 15.686227 with p-values 0.00. Therefore, panel data applied for both cross-section and time-series for all the equations. The Hausman test value is 119.613825 with p value 0.000 resulting in the application of we have to apply FEM for all the equations. Table 37 shows that LSIZE=-0.027877 (p=0.0356) and LNAGE=-1.19811 (p=0.0001) are the only control variable that has turned out to be significant. The control variables D_TA=0.01076 (p=0.402) EMP_BR=-0.001804 (p=0.2251) are insignificant at the conventional levels. The table further highlights few important points. It is quite clear that the variable POS_T_CC_BR =-5.93E-05 (p=0.0001) and its squared term are significant at the conventional levels. The table further shows that the coefficient of the dummy variable is positive but insignificant at the 10 percent level. This indicates that the relationship between No. of Transactions- Credit Card- Actual at POS and Non-Int. Earnings of public sector bank is significant. Table 37 finally presents the analysis of the model specification. It is evident from the table that the F-statistics obtained is quite high =23.08226 and is also significant with p<0.01. This proves that the overall model is valid and the results are robust

Dependent Variable: Interest Earnings

S= Significant, IS = Insignificant

Table-86 Summary of Above analysis

C	
LNAGE	S
LSIZE	S
D_TA	IS
EMP_BR	IS
POS_T_CC_BR	S

Source Author's own

Conclusion

No. of Transactions- Credit Card- Actual at POS and Non-Int. Earnings of public sector bank is significant.

Table -87 Analysis of No. of Transactions- Debit Card- Actual at POS and Non-Int. Earnings

Dependent Variable: Non-Int. Earnings				
Variable	**Coeff.**	**Std. Err.**	**t-Stat.**	**P-Stat**
C	-1.393145	1.378437	-1.01067	0.3148
LNAGE	0.474582	0.293597	1.616437	0.1094
LSIZE	-0.048373	0.014546	-3.325452	0.0013
D_TA	-0.014019	0.018081	-0.775344	0.4401
EMP_BR	-0.002339	0.001909	-1.225255	0.2235
POS_T_DC_BR	-4.09E-06	3.63E-06	-1.128539	0.262
F-stat	19.0485			0

Source: Analysis of Data in Eview12

Interpretation: The value redundant fixed effect is 9.471535 with p-values 0.00. Therefore, panel data applied for both cross-section and time-series for all the equations. The Hausman test value is 59.09431with p value 0.000 resulting in the application of we have to apply FEM for all the equations. Table 38 shows that LSIZE=-0.048373 (p=0.0013) is the only control variable that has turned out to be significant. The control variables LNAGE=-0.474582 (p=0.1094), D_TA=-0.014019 (p=0.4401) EMP_BR=-0.002339 (p=0.2235) are insignificant at the conventional levels. The table further highlights few important points. It is quite clear that the variable POS_T_DC_BR =-4.09E-06 (p=0.262) and its squared term are insignificant at the conventional levels. The table further shows that the coefficient of the dummy variable is positive but insignificant at the 10 percent level. This indicates that the relationship between No. of Transactions- Debit Card- Actual at POS and Non-Int. Earnings of public sector bank is insignificant. Table 19 finally presents the

analysis of the model specification. It is evident from the table that the F-statistics obtained is quite high =19.0485and is also significant with p<0.01. This proves that the overall model is valid and the results are robust.

Dependent Variable: Interest Earnings

S= Significant, IS = Insignificant

Table-88 Summary of Above analysis

C	
LNAGE	IS
LSIZE	S
D_TA	IS
EMP_BR	IS
POS_T_DC_BR	IS

Source Author's own

Conclusion

No. of Transactions- Debit Card- Actual at POS and Non-Int. Earnings of public sector bank is insignificant

CHAPTER SUMMARY

This Chapter deals with the Construction of objectives of study. Testing hypothesis and interpreting results. All the statistical proven data is summarized to get meaningful results. This Chapter involves extensive use of EViews 12. Software along with Ms Excel 2019

CHAPTER5

Conclusion and Recommendations

5.1 INTRODUCTION

The significant contributions of the current investigation are covered in this chapter. Additionally, it provides some guidelines for future research as well as a summary of the study's major findings and policy implications. The two main factors influencing each economic sector now are globalisation and advances in information and communication technology. It enables businesses to utilise their input resources as effectively as possible. Over the past two decades, information technology has made a huge impact on society around the world and may even be the most significant cause. The information technology story has caused a huge technological shift in the world economy in recent years. Technology advances provide a decrease in the number of inputs needed to produce one unit, increasing per capita income.

Over the past two decades, virtually every industry has made significant expenditures in information technology. One of the key economic sectors that has recently received more attention is the financial one. Within the broad financial sector, the banking industry has emerged as the centre of attention for academics and policymakers alike.

Every modern economy is said to depend on the banking sector. It is one of the cornerstones of the financial industry, which is essential to the economy's operation. Since India's independence, banks have been essential to the socioeconomic growth of the nation.

In the face of an information technology (IT) environment that has undergone revolutionary change, Indian banking has seen a number of good advances. The Indian banking sector is continuously attempting to incorporate technological advancements into banking procedures. Indian banks actively promote investment in technology. Information technology includes call centres, ATMs, mobile and tele-banking, internet banking, computerization in banks, electronic currency, etc. Through the Negotiated Dealing System (NDS), Electronic Clearing Services (ECS), Indian Financial Network (INFINET), Electronic Funds Transfer (EFT), Real-Time Gross Settlement (RTGS) System, Centralised Funds Management System (CFMS), Structured Financial Messaging System (SFMS), and India Card, the RBI has also embraced IT in approving

the functionality and ongoing renovation of the payment system. As a result, the standards of the global financial system are more readily compatible with the Indian banking environment.

The way commercial banks operate has changed substantially as a result of fierce rivalry between domestic and foreign businesses and the phenomenal rise of information technology. The banks are emphasising success drivers more than ever in order to grow and change with the times and provide improved financial performance. Technology is a tool for efficiency, not a panacea; therefore, using it effectively requires administrative qualities, organisational skills, and forethought.

A noteworthy scenario to examine the impact of information technology on public sector bank performance is India's unique and largest social banking experiments and IT implementation. The current study also examines how the performance of the Indian public sector bank is impacted by information technology in this setting. The study's primary goal is to do a comparative study of all public sectors in terms of deposits, profitability, and ICT adoption from 2012 to 2022. This study is based on the 12 PSBs in India, all of which were chosen as universes or populations.

Aiming to analyse the effects of banks' adoption of information technology on bank earnings and to study variation in deposits and profitability in Indian public sector banks from the 2011–12 fiscal year to the 2020–21 fiscal year The analysis of bank earnings has been done using a variety of indicators. Each of the 12 public-sector Indian banks has considered. This chapter's objective is to give a summary of the study's findings and recommendations.

The following list includes the study's precise goals:

1. To study the variation in deposits among different public sector banks in India.
2. To study the variation in profits among different public sector banks in India.
3. To study the impact of income generated by information technology adoption on bank earnings.

A detailed evaluation of the literature has been conducted while keeping the goals of the current study in mind. Reviewing earlier literature revealed a research gap, which led to the development of the appropriate framework and technique for this study. The existing literature is divided into

two major categories, each of which is further divided into two subcategories. The literature reviews earlier research on bank performance, including global studies and Indian studies. The conceptual framework covers a few key pieces of research on the effect of information technology on bank performance, including international studies and Indian studies. The current study made an effort to comprehend the connection between information technology and bank profits in India using secondary data. Panel data, which includes chosen variables from 12 public sector banks over a 10-year period, was used in the study (2011–12 to 2020–21). The information was gleaned from publications of the Reserve Bank of India as well as the business database PROWESS, created by the Centre for Monitoring the Indian Economy (CMIE).

In addressing the objectives of the study, the present study explores the relationship between information technology and earnings in the Indian public sector banking industry. Objective One explained the variation in deposits among different public sector banks in India. In the second objective, variation in profits among different public sector banks in India was studied. whereas the last objective concerned the impact of income generated by information technology adoption on bank earnings. This analysis offers important insights into understanding information technology, in particular, as a determinant of banks' efficiency. The overall conclusion that emerges from the analysis is that in the banking industry, performance is a positive function of information technology.

5.2 DETAILED FINDINGS OF ICT ADOPTION ON BANK EARNINGS (INTEREST AND NON-INTEREST)

Impact of information technology adoption on Int. Earnings

1. One control variable that has turned out to be significant where as other two were insignificant at the conventional levels. Also the relationship between number of ATM on site and interest on earning of public sector bank is insignificant but the overall model is valid and the results are robust.

2. One control variable that has turned out to be significant where as other two were insignificant at the conventional levels. Also the relationship between number of ATM off site and interest on earning of public sector bank is insignificant but the overall model is valid and the results are robust.

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3. One control variable that has turned out to be significant where as other two were insignificant at the conventional levels and the relationship between total number of ATM's and interest on earning of public sector bank is insignificant but the overall model is valid and the results are robust.

4. Two control variable that has turned out to be significant where as other were insignificant at the conventional levels and the relationship between Number of POS terminals- On-line and interest on earning of public sector bank is insignificant. But the overall model is valid and the results are robust.

5. One control variable that has turned out to be significant where as other two were insignificant at the conventional levels and the relationship between No. of outstanding cards - Debit Cards and interest on earning of public sector bank is insignificant but the overall model is valid and the results are robust.

6. Two control variable that has turned out to be significant where as other were insignificant at the conventional levels. The relationship between No. of outstanding cards - Credit Cards and interest on earning of public sector bank is significant and overall model is valid and the results are robust.

7. One control variable that has turned out to be significant where as other were insignificant at the conventional levels. The relationship between numbers of No. of Transactions- Credit Card- Actual at ATM and interest on earning of public sector bank is insignificant but the overall model is valid and the results are robust.

8. One control variable that has turned out to be significant where as other were insignificant at the conventional levels. This indicates that the relationship between number of ATM on site and interest on earning of public sector bank is insignificant but the overall model is valid and the results are robust.

9. Two control variable that has turned out to be significant where as other were insignificant at the conventional levels. Also the relationship between No. of Transactions- Credit Card- Actual at POS and interest on earning of public sector bank is significant and the overall model is valid and the results are robust.

10. One control variable that has turned out to be significant where as other were insignificant at the conventional levels. The relationship between No. of Transactions- Debit Card- Actual at

POS and interest on earning of public sector bank is insignificant but the overall model is valid and the results are robust.

Impact of information technology adoption on Non-Int. Earnings

1. One control variable that has turned out to be significant where as other was insignificant at the conventional levels. The relationship between number of ATM on site and Non-Int. Earnings of public sector bank is insignificant but the overall model is valid and the results are robust.

2. One control variable that has turned out to be significant where as other was insignificant at the conventional levels. The relationship between number of ATM off site and Non-Int. Earnings of public sector bank is insignificant but the overall model is valid and the results are robust.

3. One control variable that has turned out to be significant where as other were insignificant at the conventional levels. The relationship between Total Number of ATMs and Non-Int. Earnings of public sector bank is insignificant. But the overall model is valid and the results are robust.

4. Two control variable that has turned out to be significant where as other were insignificant at the conventional levels. The relationship between Number of POS terminals- On-line and Non-Int. Earnings of public sector bank is insignificant. But the overall model is valid and the results are robust.

5. One control variable that has turned out to be significant where as other were insignificant at the conventional levels. The relationship between No .of outstanding cards - Debit Cards and Non-Int. Earnings of public sector bank is insignificant but the overall model is valid and the results are robust.

6. Two control variable that has turned out to be significant where as other were insignificant at the conventional levels. The relationship between No .of outstanding cards - Credit Cards and Non-Int. Earnings of public sector bank is insignificant but the overall model is valid and the results are robust.

7. Two control variable that has turned out to be significant where as other were insignificant at the conventional levels. The relationship between No. of Transactions- Credit Card- Actual at ATM and Non-Int. Earnings of public sector bank is insignificant but the overall model is valid and the results are robust.

8. One control variable that has turned out to be significant where as other was insignificant at the conventional levels. The relationship between No. of Transactions- Debit Card- Actual at ATM and Non-Int. Earnings of public sector bank is insignificant but the overall model is valid and the results are robust.

9. Two control variable that has turned out to be significant where as other were insignificant at the conventional levels. The relationship between No. of Transactions- Credit Card- Actual at POS and Non-Int. Earnings of public sector bank is significant and also the overall model is valid and the results are robust.

10. One control variable that has turned out to be significant where as other were insignificant at the conventional levels. The relationship between No. of Transactions- Debit Card- Actual at POS and Non-Int. Earnings of public sector bank is insignificant. But the overall model is valid and the results are robust

5.3 RECOMMENDATIONS AND CONTRIBUTION OF RESEARCH TO MAJOR STAKEHOLDERS –BANKS, INVESTORS AND PUBLIC

Deposits Related

1. There is significant difference in the average deposits held by PSU Banks
2. Significate different in terms of variation in Deposits /Total Assets is witness in case of State Bank of India and Union Bank of India
3. State Banks of India and Union Bank have witness significant difference in the Variation in Growth of Deposits/ Total Assets.
4. Significant difference is Variation in Growth of Deposits/ Total Assets is visible apart from Bank of Baroda and State Bank of India.
5. Significant difference can be seen in Bank of Baroda in term of Variation in Growth of Deposits/Branch.

Profits Related

6. Significant difference can be seen in term of Variation in Operating Profit per branch

7. Largely Variation in Growth of Operating profits per branch is insignificant among PSU Banks

8. Variation in the growth of Operating profits is also insignificant among PSU Banks

9. Variation in Operating profits to total earnings is significant for Bank of Baroda, Bank Of India, Bank Of Maharashtra, Canara Bank, Central Bank Of India, Indian Overseas Bank, Punjab And Sind Bank, Union Bank of India for other four Banks it is Insignificant.

10. Variation in Growth of operating profit to total earning is insignificant among all PSU banks

11. Variation in Net profit per branch is significant for Bank of Baroda, Indian Overseas Bank, UCO Bank.

12. Variation in Growth of Net profit per branch is significant for Bank of Baroda, State Bank of India for all other Banks it is insignificant.

13. Variation in Net Profits to total assets is significant for Bank of Baroda, Indian Overseas Bank, Punjab and Sind Bank, State Bank Of India, UCO Bank.

14. Variation in Growth of Net Profits to total assets is insignificant among all PSU Banks in India

15. Variation in Net Profits to total Earning is significant in Bank of Baroda, Indian Overseas Bank, UCO Bank.

16. Variation in Growth of Net Profits to Total Earning is insignificant among all PSU Banks.

Interest Earning and Non Interest Earning

17. Number of ATM on site and interest earning of public sector bank is insignificant.

18. Number of ATM off site and interest earning of public sector bank is insignificant.

19. Total number of ATM's and interest earning of public sector bank is insignificant.

20. Number of POS terminals- On-line and interest earning of public sector bank is insignificant

21. No. of outstanding cards - Debit Cards and interest earning of public sector bank is insignificant

22. No. of outstanding cards - Credit Cards and interest earning of public sector bank is significant

23. No. of Transactions- Credit Card- Actual at ATM and interest earning of public sector bank is insignificant.

24. No. of Transactions- Credit Card- Actual at POS and interest earning of public sector bank is significant.

25. No. of Transactions- Debit Card- Actual at POS and interest earning of public sector bank is insignificant

26. No. of ATM on site and Non-Int. Earnings of public sector bank is insignificant

27. No. of ATM off site and Non-Int. Earnings of public sector bank is insignificant

28. No. of ATMs and Non-Int. Earnings of public sector bank is insignificant

29. No. of POS terminals- On-line and Non-Int. Earnings of public sector bank is insignificant

30. No. of outstanding cards - Debit Cards and Non-Int. Earnings of public sector bank is insignificant

31. No. of outstanding cards - Credit Cards and Non-Int. Earnings of public sector bank is insignificant

32. No. of Transactions- Credit Card- Actual at ATM and Non-Int. Earnings of public sector bank is insignificant

33. No. of Transactions- Debit Card- Actual at ATM and Non-Int. Earnings of public sector bank is insignificant

34. No. of Transactions- Credit Card- Actual at POS and Non-Int. Earnings of public sector bank is significant

35. No. of Transactions- Debit Card- Actual at POS and Non-Int. Earnings of public sector bank is insignificant.

5.4 IMPLICATIONS

1. Banks to achieve higher profitability need not only to spend more on information technology. It is equally important to manage and connect the information technology with operational processes.

2. Bank investments in ATM- On site and Off Site are not contributing to the overall earning of the Banks.

3. State Bank of. India, Union Bank of India and Bank of Baroda have got slight edge in comparison to other Public Sector Banks – Profitability and Deposits

4. PSU banks are required to focus more on Credit Card business as the study itself suggested that number of outstanding credit card and number of transactions using Credit card have contributed significantly on Banks Interest and Non Interest Earnings.

5. Public sector Banks are required to invest more in credit card business. This can be achieve with the huge network of Branches all over India. The use of new innovation tools like Wifi enabled Credit card, AI based systems of payments and more safety through investment in Block Chain Technology.

6. When it comes to trust Public Sector Banks have got huge advance which is reflected by number of people having Bank account in PSU banks, which is double the number of Accounts of Private Banks. This advance can be enchased with the effective implementation of ICT which can bring significant contributions to banks overall earnings and profitability.

7. The public sector banks will need to acquire new skills as a result of the investment in information technology.

8. Not only operational-level staff members pick up new technology, but managerial personnel also require training in technology management. Less managerial effectiveness will result in only technological modernization without adequate command and control.

9. Banks in the public sector need to update their methods of providing services.

5.5 FUTURE DIRECTIONS OF RESEARCH

It has been noted that some areas need to be thoroughly investigated during the course of the study. The following are a few of these areas:

1. Banks' performance can be evaluated in terms of total productivity through ratio analysis.

2. The results of this study can then be compared to the findings obtained through data envelopment analysis (DEA), the thick frontier approach (TFA), etc.

3. This study has only included the bank's internal factors to determine its earnings; other major factors at the macro-economic level can be used to develop a better understanding of the concept.

4. This study is based on the data of 12 public sector banks in India for the years 2011–2012 and 2020–21. Further study can be done on private Indian banks.

5. A comparative study to analyses the impact of information technology can be done between public and private sector banks to project the actual picture.

CHAPTER SUMMARY

This chapter talks about major findings and the contribution of research to stakeholders (public sector banks, investors, and the general public). It also explains the implications and future direction of the research.

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Appendix A – Secondary data – Raw and Processed

Correlation Coefficients

Appendix A – Data Processing to Check Stationarity

Panel unit root test: Summary
Series: ATM_OFF_BR
Date: 05/23/22   Time: 23:06
Sample: 2012 2021
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-5.93468	0.0000	12	103
Breitung t-stat	3.56592	0.9998	12	91
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	0.86533	0.8066	12	103
ADF - Fisher Chi-square	19.8583	0.7048	12	103
PP - Fisher Chi-square	19.6867	0.7144	12	108

** Probabilities for Fisher tests are computed using an asymptotic Chi
    -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: ATM_ON_BR
Date: 05/23/22   Time: 23:07
Sample: 2012 2021
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-14.7539	0.0000	12	106
Breitung t-stat	2.38180	0.9914	12	94
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.96788	0.1666	12	106
ADF - Fisher Chi-square	23.7490	0.4760	12	106
PP - Fisher Chi-square	6.92315	0.9997	12	108

** Probabilities for Fisher tests are computed using an asymptotic Chi
    -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: ATM_T_CC_BR
Date: 05/23/22   Time: 23:07

Sample: 2012 2021
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-2.70493	0.0034	10	87
Breitung t-stat	0.24224	0.5957	10	77
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	0.23542	0.5931	10	87
ADF - Fisher Chi-square	16.9419	0.6567	10	87
PP - Fisher Chi-square	15.8625	0.7251	10	90

** Probabilities for Fisher tests are computed using an asymptotic Chi
     -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: ATM_T_DC_BR
Date: 05/23/22   Time: 23:08
Sample: 2012 2021
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West fixed bandwidth and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-13.5196	0.0000	12	102
Breitung t-stat	-0.42239	0.3364	12	90
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-2.39943	0.0082	12	102
ADF - Fisher Chi-square	53.3528	0.0005	12	102
PP - Fisher Chi-square	47.0615	0.0033	12	108

** Probabilities for Fisher tests are computed using an asymptotic Chi
     -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D_BR
Date: 05/23/22   Time: 23:09
Sample: 2012 2021
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West fixed bandwidth and Quadratic Spectral kernel

Method	Statistic	Prob.**	Cross- sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-2.57235	0.0051	12	104
Breitung t-stat	3.72066	0.9999	12	92
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.19745	0.4217	12	104
ADF - Fisher Chi-square	30.1463	0.1800	12	104
PP - Fisher Chi-square	21.5150	0.6082	12	108

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D_BR_G
Date: 05/23/22 Time: 23:09
Sample: 2012 2021
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West fixed bandwidth and Quadratic Spectral kernel

Method	Statistic	Prob.**	Cross- sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-4.54571	0.0000	12	94
Breitung t-stat	0.21612	0.5856	12	82
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.20860	0.4174	12	94
ADF - Fisher Chi-square	28.5182	0.2388	12	94
PP - Fisher Chi-square	32.3011	0.1197	12	96

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D_G
Date: 05/23/22 Time: 23:26
Sample: 2012 2021
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West fixed bandwidth and Quadratic Spectral kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-3.60552	0.0002	12	94
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-1.18317	0.1184	12	94
ADF - Fisher Chi-square	34.3345	0.0789	12	94
PP - Fisher Chi-square	34.0660	0.0835	12	96

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D_TA
Date: 05/23/22   Time: 23:10
Sample: 2012 2021
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Andrews automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-5.83128	0.0000	12	105
Breitung t-stat	1.93233	0.9733	12	93
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.28277	0.3887	12	105
ADF - Fisher Chi-square	37.3873	0.0400	12	105
PP - Fisher Chi-square	40.8661	0.0172	12	108

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D_TA_G
Date: 05/23/22   Time: 23:10
Sample: 2012 2021
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Andrews automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs

Levin, Lin & Chu t*	-11.2692	0.0000	12	92
Breitung t-stat	0.50920	0.6947	12	80

Null: Unit root (assumes individual unit root process)

Im, Pesaran and Shin W-stat	-1.56614	0.0587	12	92
ADF - Fisher Chi-square	56.2019	0.0002	12	92
PP - Fisher Chi-square	72.0165	0.0000	12	96

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: EMP_BR
Date: 05/23/22   Time: 23:11
Sample: 2012 2021
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Andrews automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-16.8103	0.0000	12	104
Breitung t-stat	0.49876	0.6910	12	92
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-2.85061	0.0022	12	104
ADF - Fisher Chi-square	54.0760	0.0004	12	104
PP - Fisher Chi-square	25.6909	0.3690	12	108

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: FA_BR
Date: 05/23/22   Time: 23:11
Sample: 2012 2021
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Andrews automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				

| Levin, Lin & Chu t* | -6.34459 | 0.0000 | 12 | 105 |

Null: Unit root (assumes individual unit root process)

Im, Pesaran and Shin W-stat	-1.28321	0.0997	12	105
ADF - Fisher Chi-square	39.8583	0.0221	12	105
PP - Fisher Chi-square	35.6902	0.0588	12	108

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: FA_BR_G
Date: 05/23/22   Time: 23:12
Sample: 2012 2021
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Andrews automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-6.91468	0.0000	12	94

Null: Unit root (assumes individual unit root process)

Im, Pesaran and Shin W-stat	-4.28056	0.0000	12	94
ADF - Fisher Chi-square	66.4647	0.0000	12	94
PP - Fisher Chi-square	81.0823	0.0000	12	96

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: I_BR
Date: 05/23/22   Time: 23:12
Sample: 2012 2021
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Andrews automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-2.20707	0.0137	12	103

Method	Statistic	Prob.**	Cross-sections	Obs
Im, Pesaran and Shin W-stat	-1.89044	0.0293	12	103
ADF - Fisher Chi-square	46.3272	0.0040	12	103
PP - Fisher Chi-square	35.0573	0.0676	12	108

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: I_BR_G
Date: 05/23/22   Time: 23:12
Sample: 2012 2021
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Andrews automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-4.63889	0.0000	12	89
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-3.63504	0.0001	12	89
ADF - Fisher Chi-square	58.8739	0.0001	12	89
PP - Fisher Chi-square	46.2598	0.0041	12	96

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: I_G
Date: 05/23/22   Time: 23:13
Sample: 2012 2021
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Andrews automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-3.03272	0.0012	12	93

Null: Unit root (assumes individual unit root process)

Method	Statistic	Prob.**	Cross-sections	Obs
Im, Pesaran and Shin W-stat	-0.04944	0.4803	12	93
ADF - Fisher Chi-square	26.0187	0.3522	12	93
PP - Fisher Chi-square	21.8685	0.5871	12	96

** Probabilities for Fisher tests are computed using an asymptotic Chi
     -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: I_TE
Date: 05/23/22   Time: 23:13
Sample: 2012 2021
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Andrews automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-2.53956	0.0055	12	102
Breitung t-stat	2.16934	0.9850	12	90
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.28432	0.3881	12	102
ADF - Fisher Chi-square	28.0924	0.2562	12	102
PP - Fisher Chi-square	21.3070	0.6206	12	108

** Probabilities for Fisher tests are computed using an asymptotic Chi
     -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: I_TE_G
Date: 05/23/22   Time: 23:13
Sample: 2012 2021
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Andrews automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-5.88365	0.0000	12	89
Breitung t-stat	-2.69650	0.0035	12	77

Null: Unit root (assumes individual unit root process)

Im, Pesaran and Shin W-stat	-0.82866	0.2036	12	89
ADF - Fisher Chi-square	38.3049	0.0323	12	89
PP - Fisher Chi-square	48.5596	0.0022	12	96

** Probabilities for Fisher tests are computed using an asymptotic Chi
      -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: N_ATM_BR
Date: 05/23/22   Time: 23:15
Sample: 2012 2021
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-10.5945	0.0000	12	100
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-4.79837	0.0000	12	100
ADF - Fisher Chi-square	69.9708	0.0000	12	100
PP - Fisher Chi-square	55.7447	0.0002	12	108

** Probabilities for Fisher tests are computed using an asymptotic Chi
      -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: N_CC_BR
Date: 05/23/22   Time: 23:15
Sample: 2012 2021
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Andrews automatic bandwidth selection and Quadratic Spectral kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-0.60327	0.2732	10	83
Breitung t-stat	2.81234	0.9975	10	73

			Cross-sections	Obs
Im, Pesaran and Shin W-stat	0.68907	0.7546	10	83
ADF - Fisher Chi-square	19.1094	0.5147	10	83
PP - Fisher Chi-square	9.94884	0.9691	10	90

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: N_DC_BR
Date: 05/23/22   Time: 23:16
Sample: 2012 2021
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0
Andrews automatic bandwidth selection and Quadratic Spectral kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-1.46378	0.0716	12	108
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	0.59339	0.7235	12	108
ADF - Fisher Chi-square	15.3931	0.9087	12	108
PP - Fisher Chi-square	15.4958	0.9054	12	108

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: N_POS_BR
Date: 05/23/22   Time: 23:16
Sample: 2012 2021
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Andrews automatic bandwidth selection and Quadratic Spectral kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	0.25251	0.5997	12	101
Breitung t-stat	1.00494	0.8425	12	89
Null: Unit root (assumes individual unit root process)				

Method	Statistic	Prob.**	Cross-sections	Obs
Im, Pesaran and Shin W-stat	0.22178	0.5878	12	101
ADF - Fisher Chi-square	19.3965	0.7305	12	101
PP - Fisher Chi-square	14.3370	0.9387	12	108

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: NI_BR
Date: 05/23/22   Time: 23:16
Sample: 2012 2021
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Andrews automatic bandwidth selection and Quadratic Spectral kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-2.04508	0.0204	12	104
Breitung t-stat	0.70556	0.7598	12	92
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.78484	0.2163	12	104
ADF - Fisher Chi-square	34.9554	0.0691	12	104
PP - Fisher Chi-square	28.9713	0.2212	12	108

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: NI_BR_G
Date: 05/23/22   Time: 23:17
Sample: 2012 2021
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Andrews automatic bandwidth selection and Quadratic Spectral kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-3.51447	0.0002	12	90
Breitung t-stat	-1.48236	0.0691	12	78
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.93877	0.1739	12	90

	Statistic	Prob.**	Cross-sections	Obs
ADF - Fisher Chi-square	40.4684	0.0190	12	90
PP - Fisher Chi-square	45.8533	0.0046	12	96

** Probabilities for Fisher tests are computed using an asymptotic Chi
  -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: NI_G
Date: 05/23/22   Time: 23:17
Sample: 2012 2021
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Andrews automatic bandwidth selection and Quadratic Spectral kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-5.72012	0.0000	12	89
Breitung t-stat	1.16502	0.8780	12	77
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-1.95559	0.0253	12	89
ADF - Fisher Chi-square	56.4505	0.0002	12	89
PP - Fisher Chi-square	34.7769	0.0718	12	96

** Probabilities for Fisher tests are computed using an asymptotic Chi
  -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: NI_TE
Date: 05/23/22   Time: 23:17
Sample: 2012 2021
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West fixed bandwidth and Quadratic Spectral kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-2.93377	0.0017	12	102
Breitung t-stat	2.16934	0.9850	12	90
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.28432	0.3881	12	102
ADF - Fisher Chi-square	28.0924	0.2562	12	102

			Cross-	

PP - Fisher Chi-square   22.8159   0.5307   12   108

** Probabilities for Fisher tests are computed using an asymptotic Chi
    -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: NI_TE_G
Date: 05/23/22   Time: 23:18
Sample: 2012 2021
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West fixed bandwidth and Quadratic Spectral kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-6.63303	0.0000	12	92
Breitung t-stat	-3.88590	0.0001	12	80
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.74715	0.2275	12	92
ADF - Fisher Chi-square	36.3110	0.0512	12	92
PP - Fisher Chi-square	39.6644	0.0232	12	96

** Probabilities for Fisher tests are computed using an asymptotic Chi
    -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: NII_BR
Date: 05/23/22   Time: 23:18
Sample: 2012 2021
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West fixed bandwidth and Quadratic Spectral kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-1.55817	0.0596	12	101
Breitung t-stat	2.26258	0.9882	12	89
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	0.62099	0.7327	12	101
ADF - Fisher Chi-square	19.3516	0.7330	12	101
PP - Fisher Chi-square	7.28798	0.9996	12	108

** Probabilities for Fisher tests are computed using an asymptotic Chi
    -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: NII_BR_G
Date: 05/23/22   Time: 23:18
Sample: 2012 2021
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West fixed bandwidth and Quadratic Spectral kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-3.80233	0.0001	12	95
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-1.42962	0.0764	12	95
ADF - Fisher Chi-square	33.9575	0.0854	12	95
PP - Fisher Chi-square	31.8800	0.1300	12	96

** Probabilities for Fisher tests are computed using an asymptotic Chi
    -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: NII_G
Date: 05/23/22   Time: 23:18
Sample: 2012 2021
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Quadratic Spectral kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-4.38462	0.0000	12	92
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.49097	0.3117	12	92
ADF - Fisher Chi-square	35.2253	0.0651	12	92
PP - Fisher Chi-square	43.1593	0.0095	12	96

Panel unit root test: Summary
Series: NII_TE
Date: 05/23/22   Time: 23:19
Sample: 2012 2021
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Quadratic Spectral kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-5.12763	0.0000	12	106
Breitung t-stat	4.84400	1.0000	12	94
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	1.11621	0.8678	12	106
ADF - Fisher Chi-square	13.5310	0.9565	12	106
PP - Fisher Chi-square	69.7858	0.0000	12	108

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: NII_TE_G
Date: 05/23/22   Time: 23:19
Sample: 2012 2021
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Quadratic Spectral kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-6.20525	0.0000	12	95
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-1.34631	0.0891	12	95
ADF - Fisher Chi-square	33.5603	0.0928	12	95
PP - Fisher Chi-square	37.7627	0.0367	12	96

Panel unit root test: Summary
Series: OPP_BR
Date: 05/23/22   Time: 23:19
Sample: 2012 2021
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Quadratic Spectral kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-5.82242	0.0000	12	104
Breitung t-stat	0.76462	0.7777	12	92
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	0.32949	0.6291	12	104
ADF - Fisher Chi-square	20.8945	0.6449	12	104
PP - Fisher Chi-square	51.2171	0.0010	12	108

** Probabilities for Fisher tests are computed using an asymptotic Chi
    -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: OPP_BR_G
Date: 05/23/22   Time: 23:19
Sample: 2012 2021
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Quadratic Spectral kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-10.7859	0.0000	12	94
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-3.87314	0.0001	12	94
ADF - Fisher Chi-square	62.9789	0.0000	12	94
PP - Fisher Chi-square	78.5007	0.0000	12	96

Panel unit root test: Summary
Series: OPP_G
Date: 05/23/22   Time: 23:20
Sample: 2012 2021
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Quadratic Spectral kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-7.74102	0.0000	12	94
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-3.03947	0.0012	12	94
ADF - Fisher Chi-square	55.8360	0.0002	12	94
PP - Fisher Chi-square	77.9279	0.0000	12	96

Panel unit root test: Summary
Series: OPP_TE
Date: 05/23/22   Time: 23:20
Sample: 2012 2021
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Quadratic Spectral kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-1.98536	0.0236	12	106
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.69632	0.2431	12	106
ADF - Fisher Chi-square	29.2233	0.2118	12	106
PP - Fisher Chi-square	30.6723	0.1635	12	108

Panel unit root test: Summary
Series: OPP_TE_G
Date: 05/23/22 Time: 23:20
Sample: 2012 2021
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0
Newey-West automatic bandwidth selection and Quadratic Spectral kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-10.7333	0.0000	12	96
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-3.83113	0.0001	12	96
ADF - Fisher Chi-square	60.2445	0.0001	12	96
PP - Fisher Chi-square	73.1377	0.0000	12	96

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: PAT_BR
Date: 05/23/22 Time: 23:21
Sample: 2012 2021
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Quadratic Spectral kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-3.07327	0.0011	12	105
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.29305	0.3847	12	105
ADF - Fisher Chi-square	26.0393	0.3512	12	105
PP - Fisher Chi-square	32.7499	0.1095	12	108

** Probabilities for Fisher tests are computed using an asymptotic Chi

-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: PAT_BR_G
Date: 05/23/22   Time: 23:22
Sample: 2012 2021
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Quadratic Spectral kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-4.21578	0.0000	12	90
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.90291	0.1833	12	90
ADF - Fisher Chi-square	42.5345	0.0112	12	90
PP - Fisher Chi-square	94.2358	0.0000	12	96

** Probabilities for Fisher tests are computed using an asymptotic Chi
    -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: PAT_G
Date: 05/23/22   Time: 23:22
Sample: 2012 2021
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Quadratic Spectral kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-4.28726	0.0000	12	90
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.73623	0.2308	12	90
ADF - Fisher Chi-square	40.6477	0.0182	12	90
PP - Fisher Chi-square	83.8164	0.0000	12	96

** Probabilities for Fisher tests are computed using an asymptotic Chi
    -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: PAT_TA
Date: 05/23/22   Time: 23:22
Sample: 2012 2021
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Quadratic Spectral kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-3.07505	0.0011	12	105
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.19294	0.4235	12	105
ADF - Fisher Chi-square	25.3586	0.3865	12	105
PP - Fisher Chi-square	41.6467	0.0141	12	108

** Probabilities for Fisher tests are computed using an asymptotic Chi
   -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: PAT_TA_G
Date: 05/23/22   Time: 23:22
Sample: 2012 2021
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Quadratic Spectral kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-4.25306	0.0000	12	90
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.86702	0.1930	12	90
ADF - Fisher Chi-square	42.1027	0.0126	12	90
PP - Fisher Chi-square	92.5708	0.0000	12	96

** Probabilities for Fisher tests are computed using an asymptotic Chi
   -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: PAT_TE
Date: 05/23/22   Time: 23:22
Sample: 2012 2021
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Quadratic Spectral kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-2.85580	0.0021	12	105
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.11623	0.4537	12	105
ADF - Fisher Chi-square	24.9373	0.4092	12	105
PP - Fisher Chi-square	35.5827	0.0602	12	108

** Probabilities for Fisher tests are computed using an asymptotic Chi
    -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: PAT_TE_G
Date: 05/23/22   Time: 23:22
Sample: 2012 2021
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Quadratic Spectral kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-4.50821	0.0000	12	90
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.93839	0.1740	12	90
ADF - Fisher Chi-square	41.9306	0.0131	12	90
PP - Fisher Chi-square	92.1347	0.0000	12	96

** Probabilities for Fisher tests are computed using an asymptotic Chi
    -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: POS_T_CC_BR
Date: 05/23/22   Time: 23:23
Sample: 2012 2021
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Quadratic Spectral kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-2.41600	0.0078	10	86
Breitung t-stat	4.13873	1.0000	10	76
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	1.17977	0.8810	10	86
ADF - Fisher Chi-square	14.6474	0.7962	10	86
PP - Fisher Chi-square	20.2452	0.4427	10	90

** Probabilities for Fisher tests are computed using an asymptotic Chi
   -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: POS_T_DC_BR
Date: 05/23/22   Time: 23:23
Sample: 2012 2021
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Quadratic Spectral kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-5.85087	0.0000	12	104
Breitung t-stat	-0.29944	0.3823	12	92
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	0.25417	0.6003	12	104
ADF - Fisher Chi-square	19.5981	0.7194	12	104
PP - Fisher Chi-square	53.6783	0.0005	12	108

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: TA_BR
Date: 05/23/22   Time: 23:24
Sample: 2012 2021
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Quadratic Spectral kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-6.52212	0.0000	12	103
Breitung t-stat	1.35406	0.9121	12	91
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.37319	0.3545	12	103
ADF - Fisher Chi-square	31.3418	0.1442	12	103
PP - Fisher Chi-square	72.3462	0.0000	12	108

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: TA_BR_G
Date: 05/23/22   Time: 23:24
Sample: 2012 2021
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Quadratic Spectral kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-6.58073	0.0000	12	94
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-3.29869	0.0005	12	94
ADF - Fisher Chi-square	55.7690	0.0002	12	94
PP - Fisher Chi-square	97.4008	0.0000	12	96

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: TE_BR
Date: 05/23/22   Time: 23:24
Sample: 2012 2021
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Quadratic Spectral kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-7.15490	0.0000	12	103
Breitung t-stat	-1.74070	0.0409	12	91
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-1.24843	0.1059	12	103
ADF - Fisher Chi-square	42.2534	0.0121	12	103
PP - Fisher Chi-square	109.373	0.0000	12	108

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: TE_BR_G
Date: 05/23/22   Time: 23:24
Sample: 2012 2021
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Quadratic Spectral kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-4.84283	0.0000	12	91
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-3.43297	0.0003	12	91
ADF - Fisher Chi-square	56.6987	0.0002	12	91
PP - Fisher Chi-square	82.5777	0.0000	12	96

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: TE_G
Date: 05/23/22   Time: 23:25
Sample: 2012 2021
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Andrews automatic bandwidth selection and Parzen kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-1.32659	0.0923	12	94
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	0.79394	0.7864	12	94
ADF - Fisher Chi-square	20.6963	0.6566	12	94
PP - Fisher Chi-square	21.2723	0.6226	12	96

** Probabilities for Fisher tests are computed using an asymptotic Chi
     -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: TE_TA
Date: 05/23/22   Time: 23:25
Sample: 2012 2021
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West fixed bandwidth and Quadratic Spectral kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-4.49112	0.0000	12	101
Breitung t-stat	-0.65314	0.2568	12	89
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-1.18225	0.1186	12	101
ADF - Fisher Chi-square	43.8417	0.0080	12	101
PP - Fisher Chi-square	35.1305	0.0665	12	108

** Probabilities for Fisher tests are computed using an asymptotic Chi
     -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: TE_TA_G
Date: 05/23/22   Time: 23:25
Sample: 2012 2021
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West fixed bandwidth and Quadratic Spectral kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-4.60769	0.0000	12	87
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-3.38555	0.0004	12	87
ADF - Fisher Chi-square	58.8731	0.0001	12	87
PP - Fisher Chi-square	64.4006	0.0000	12	96

** Probabilities for Fisher tests are computed using an asymptotic Chi
   -square distribution. All other tests assume asymptotic normality.

Basic information about banks Under Consideration

Basic					
S.No.	Name of Bank	Code	Year	Incorporation Year	Age
S.No.	Name	Code	Year	INC_Y	AG
1	BANK OF BARODA	B01	2021	1908	113
2	BANK OF INDIA	B02	2021	1906	115
3	BANK OF MAHARASHTRA	B03	2021	1935	86
4	CANARA BANK	B04	2021	1906	115
5	CENTRAL BANK OF INDIA	B05	2021	1911	110
6	INDIAN BANK	B06	2021	1907	114
7	INDIAN OVERSEAS BANK	B07	2021	1937	84
8	PUNJAB AND SIND BANK	B08	2021	1908	113
9	PUNJAB NATIONAL BANK	B09	2021	1894	127
10	STATE BANK OF INDIA	B10	2021	1955	66
11	UCO BANK	B11	2021	1943	78

12	UNION BANK OF INDIA	B12	2021	1919		102
13	BANK OF BARODA	B01	2020	1908		112
14	BANK OF INDIA	B02	2020	1906		114
15	BANK OF MAHARASHTRA	B03	2020	1935		85
16	CANARA BANK	B04	2020	1906		114
17	CENTRAL BANK OF INDIA	B05	2020	1911		109
18	INDIAN BANK	B06	2020	1907		113
19	INDIAN OVERSEAS BANK	B07	2020	1937		83
20	PUNJAB AND SIND BANK	B08	2020	1908		112
21	PUNJAB NATIONAL BANK	B09	2020	1894		126
22	STATE BANK OF INDIA	B10	2020	1955		65
23	UCO BANK	B11	2020	1943		77
24	UNION BANK OF INDIA	B12	2020	1919		101
25	BANK OF BARODA	B01	2019	1908		111
26	BANK OF INDIA	B02	2019	1906		113
27	BANK OF MAHARASHTRA	B03	2019	1935		84
28	CANARA BANK	B04	2019	1906		113
29	CENTRAL BANK OF INDIA	B05	2019	1911		108
30	INDIAN BANK	B06	2019	1907		112
31	INDIAN OVERSEAS BANK	B07	2019	1937		82
32	PUNJAB AND SIND BANK	B08	2019	1908		111
33	PUNJAB NATIONAL BANK	B09	2019	1894		125
34	STATE BANK OF INDIA	B10	2019	1955		64
35	UCO BANK	B11	2019	1943		76
36	UNION BANK OF INDIA	B12	2019	1919		100
37	BANK OF BARODA	B01	2018	1908		110
38	BANK OF INDIA	B02	2018	1906		112
39	BANK OF MAHARASHTRA	B03	2018	1935		83
40	CANARA BANK	B04	2018	1906		112
41	CENTRAL BANK OF INDIA	B05	2018	1911		107
42	INDIAN BANK	B06	2018	1907		111
43	INDIAN OVERSEAS BANK	B07	2018	1937		81
44	PUNJAB AND SIND BANK	B08	2018	1908		110
45	PUNJAB NATIONAL BANK	B09	2018	1894		124
46	STATE BANK OF INDIA	B10	2018	1955		63
47	UCO BANK	B11	2018	1943		75
48	UNION BANK OF INDIA	B12	2018	1919		99
49	BANK OF BARODA	B01	2017	1908		109
50	BANK OF INDIA	B02	2017	1906		111

51	BANK OF MAHARASHTRA	B03	2017	1935		82
52	CANARA BANK	B04	2017	1906		111
53	CENTRAL BANK OF INDIA	B05	2017	1911		106
54	INDIAN BANK	B06	2017	1907		110
55	INDIAN OVERSEAS BANK	B07	2017	1937		80
56	PUNJAB AND SIND BANK	B08	2017	1908		109
57	PUNJAB NATIONAL BANK	B09	2017	1894		123
58	STATE BANK OF INDIA	B10	2017	1955		62
59	UCO BANK	B11	2017	1943		74
60	UNION BANK OF INDIA	B12	2017	1919		98
61	BANK OF BARODA	B01	2016	1908		108
62	BANK OF INDIA	B02	2016	1906		110
63	BANK OF MAHARASHTRA	B03	2016	1935		81
64	CANARA BANK	B04	2016	1906		110
65	CENTRAL BANK OF INDIA	B05	2016	1911		105
66	INDIAN BANK	B06	2016	1907		109
67	INDIAN OVERSEAS BANK	B07	2016	1937		79
68	PUNJAB AND SIND BANK	B08	2016	1908		108
69	PUNJAB NATIONAL BANK	B09	2016	1894		122
70	STATE BANK OF INDIA	B10	2016	1955		61
71	UCO BANK	B11	2016	1943		73
72	UNION BANK OF INDIA	B12	2016	1919		97
73	BANK OF BARODA	B01	2015	1908		107
74	BANK OF INDIA	B02	2015	1906		109
75	BANK OF MAHARASHTRA	B03	2015	1935		80
76	CANARA BANK	B04	2015	1906		109
77	CENTRAL BANK OF INDIA	B05	2015	1911		104
78	INDIAN BANK	B06	2015	1907		108
79	INDIAN OVERSEAS BANK	B07	2015	1937		78
80	PUNJAB AND SIND BANK	B08	2015	1908		107
81	PUNJAB NATIONAL BANK	B09	2015	1894		121
82	STATE BANK OF INDIA	B10	2015	1955		60
83	UCO BANK	B11	2015	1943		72
84	UNION BANK OF INDIA	B12	2015	1919		96
85	BANK OF BARODA	B01	2014	1908		106
86	BANK OF INDIA	B02	2014	1906		108
87	BANK OF MAHARASHTRA	B03	2014	1935		79
88	CANARA BANK	B04	2014	1906		108
89	CENTRAL BANK OF INDIA	B05	2014	1911		103

			2014	1907		107
90	INDIAN BANK	B06				
91	INDIAN OVERSEAS BANK	B07	2014	1937		77
92	PUNJAB AND SIND BANK	B08	2014	1908		106
93	PUNJAB NATIONAL BANK	B09	2014	1894		120
94	STATE BANK OF INDIA	B10	2014	1955		59
95	UCO BANK	B11	2014	1943		71
96	UNION BANK OF INDIA	B12	2014	1919		95
97	BANK OF BARODA	B01	2013	1908		105
98	BANK OF INDIA	B02	2013	1906		107
99	BANK OF MAHARASHTRA	B03	2013	1935		78
100	CANARA BANK	B04	2013	1906		107
101	CENTRAL BANK OF INDIA	B05	2013	1911		102
102	INDIAN BANK	B06	2013	1907		106
103	INDIAN OVERSEAS BANK	B07	2013	1937		76
104	PUNJAB AND SIND BANK	B08	2013	1908		105
105	PUNJAB NATIONAL BANK	B09	2013	1894		119
106	STATE BANK OF INDIA	B10	2013	1955		58
107	UCO BANK	B11	2013	1943		70
108	UNION BANK OF INDIA	B12	2013	1919		94
109	BANK OF BARODA	B01	2012	1908		104
110	BANK OF INDIA	B02	2012	1906		106
111	BANK OF MAHARASHTRA	B03	2012	1935		77
112	CANARA BANK	B04	2012	1906		106
113	CENTRAL BANK OF INDIA	B05	2012	1911		101
114	INDIAN BANK	B06	2012	1907		105
115	INDIAN OVERSEAS BANK	B07	2012	1937		75
116	PUNJAB AND SIND BANK	B08	2012	1908		104
117	PUNJAB NATIONAL BANK	B09	2012	1894		118
118	STATE BANK OF INDIA	B10	2012	1955		57
119	UCO BANK	B11	2012	1943		69
120	UNION BANK OF INDIA	B12	2012	1919		93

Details for Independent Variables

S.No.	Name of Bank	Code	Year	Number of ATMs- On-site	Number of ATMs- Off-site	Total Number of ATMs	Number of POS terminals- On-line	No .of outstanding cards - Debit Cards	No .of outstanding cards - Credit Cards
S.No.	Name	Code	Year	ATM_ON	ATM_OFF	N_ATM	N_POS	N_DC	N_CC
1	BANK OF BARODA	B01	2021	8663	2970	11633	49485	65399342	644537
2	BANK OF INDIA	B02	2021	2388	3163	5551	53300	41707777	169025
3	BANK OF MAHARASHTRA	B03	2021	1505	445	1950	2930	9638962	44250
4	CANARA BANK	B04	2021	9128	4324	13452	37387	40882576	772849
5	CENTRAL BANK OF INDIA	B05	2021	2746	898	3644	4016	26549122	0
6	INDIAN BANK	B06	2021	4239	686	4925	12084	25267189	133374
7	INDIAN OVERSEAS BANK	B07	2021	2720	425	3145	10194	19212964	61119
8	PUNJAB AND SIND BANK	B08	2021	1067	30	1097	1087	3198027	0
9	PUNJAB NATIONAL BANK	B09	2021	8610	5171	13781	48246	44403060	305763
10	STATE BANK OF INDIA	B10	2021	25706	36911	62617	747205	293312845	11821564
11	UCO BANK	B11	2021	2146	215	2361	9419	10128240	0
12	UNION BANK OF INDIA	B12	2021	9089	3868	12957	313420	44151937	471266
13	BANK OF BARODA	B01	2020	9354	3839	13193	59959	54044749	467879
14	BANK OF INDIA	B02	2020	2413	3337	5750	48361	40062795	164223
15	BANK OF MAHARASHTRA	B03	2020	1381	545	1926	2512	7643666	0
16	CANARA BANK	B04	2020	4734	4038	8772	24881	24369941	537292
17	CENTRAL BANK OF INDIA	B05	2020	2752	890	3642	3635	24099971	87470
18	INDIAN BANK	B06	2020	3359	700	4059	10566	14727798	103284
19	INDIAN OVERSEAS BANK	B07	2020	2678	354	3032	19750	17924815	60116
20	PUNJAB AND SIND BANK	B08	2020	1024	30	1054	894	2755251	0
21	PUNJAB NATIONAL BANK	B09	2020	5430	3738	9168	80318	24403555	346663
22	STATE BANK OF INDIA	B10	2020	25634	32921	58555	672862	278133593	10547502
23	UCO BANK	B11	2020	2050	2916	4966	8260	8422524	0
24	UNION BANK OF INDIA	B12	2020	3979	996	4975	55245	20378661	44214
25	BANK OF BARODA	B01	2019	6329	3243	9572	63250	41940800	231277
26	BANK OF INDIA	B02	2019	2615	3539	6154	65372	59717057	184276
27	BANK OF MAHARASHTRA	B03	2019	1306	552	1858	3105	5294791	0
28	CANARA BANK	B04	2019	4756	4095	8851	21363	28147061	369339
29	CENTRAL BANK OF INDIA	B05	2019	2958	1008	3966	3388	19562798	92838
30	INDIAN BANK	B06	2019	3191	701	3892	10988	14240397	87320
31	INDIAN OVERSEAS BANK	B07	2019	2966	484	3450	19750	16469618	58033
32	PUNJAB AND SIND BANK	B08	2019	1153	48	1201	1066	2113514	0
33	PUNJAB NATIONAL BANK	B09	2019	5318	3937	9255	64865	73613373	334113

34	STATE BANK OF INDIA	B10	2019	25555	32860	58415	575358	316263253	8271446
35	UCO BANK	B11	2019	2030	328	2358	4601	6728826	0
36	UNION BANK OF INDIA	B12	2019	3864	2786	6650	50905	16603141	46459
37	BANK OF BARODA	B01	2018	6286	3418	9704	77253	51947716	125563
38	BANK OF INDIA	B02	2018	3333	4102	7435	85980	53105807	208810
39	BANK OF MAHARASHTRA	B03	2018	1305	559	1864	3232	6994033	0
40	CANARA BANK	B04	2018	5126	4269	9395	18398	42996829	223286
41	CENTRAL BANK OF INDIA	B05	2018	3419	1467	4886	3708	29047008	102514
42	INDIAN BANK	B06	2018	2748	651	3399	11670	18252399	86411
43	INDIAN OVERSEAS BANK	B07	2018	2763	789	3552	12672	18007055	53172
44	PUNJAB AND SIND BANK	B08	2018	1092	146	1238	856	2794023	0
45	PUNJAB NATIONAL BANK	B09	2018	5441	4227	9668	50241	61963158	319641
46	STATE BANK OF INDIA	B10	2018	26579	32962	59541	609789	278467823	6258360
47	UCO BANK	B11	2018	2257	512	2769	5810	10420456	0
48	UNION BANK OF INDIA	B12	2018	4550	3092	7642	26324	21867682	218242
49	BANK OF BARODA	B01	2017	6296	4224	10520	85728	43228705	131571
50	BANK OF INDIA	B02	2017	3483	4234	7717	17328	47149101	145860
51	BANK OF MAHARASHTRA	B03	2017	1292	586	1878	930	6453998	0
52	CANARA BANK	B04	2017	5391	5128	10519	9680	33136916	215250
53	CENTRAL BANK OF INDIA	B05	2017	3481	1804	5285	1851	24334411	106515
54	INDIAN BANK	B06	2017	2617	741	3358	8428	17585918	80229
55	INDIAN OVERSEAS BANK	B07	2017	2705	974	3679	12598	16001318	43322
56	PUNJAB AND SIND BANK	B08	2017	1049	204	1253	0	2612194	0
57	PUNJAB NATIONAL BANK	B09	2017	5947	4734	10681	38841	55258924	253951
58	STATE BANK OF INDIA	B10	2017	29585	29678	59263	555894	261747725	4569048
59	UCO BANK	B11	2017	2201	578	2779	5145	10326760	0
60	UNION BANK OF INDIA	B12	2017	4484	3034	7518	51891	19546123	182914
61	BANK OF BARODA	B01	2016	6117	3993	10110	35236	32160671	113554
62	BANK OF INDIA	B02	2016	3396	4411	7807	5327	35272873	145084
63	BANK OF MAHARASHTRA	B03	2016	1284	577	1861	0	5718945	50090
64	CANARA BANK	B04	2016	5279	3972	9251	4725	31949504	200416
65	CENTRAL BANK OF INDIA	B05	2016	3463	1791	5254	1694	19553837	114446
66	INDIAN BANK	B06	2016	2131	653	2784	264	14759525	73106
67	INDIAN OVERSEAS BANK	B07	2016	2719	1074	3793	448	11910643	41873
68	PUNJAB AND SIND BANK	B08	2016	1081	260	1341	0	2255230	0
69	PUNJAB NATIONAL BANK	B09	2016	5120	4343	9463	13699	44011977	194370
70	STATE BANK OF INDIA	B10	2016	26770	31918	58688	323527	241778006	3620042
71	UCO BANK	B11	2016	2010	554	2564	0	8528238	0
72	UNION BANK OF INDIA	B12	2016	4351	2532	6883	27649	16707313	142221
73	BANK OF BARODA	B01	2015	4803	3227	8030	13651	25345978	82535
74	BANK OF INDIA	B02	2015	3150	3621	6771	4222	27379416	131522

75	BANK OF MAHARASHTRA	B03	2015	1349	500	1849	0	5377610	39836
76	CANARA BANK	B04	2015	5126	3407	8533	3319	25471880	125917
77	CENTRAL BANK OF INDIA	B05	2015	3155	1680	4835	1699	15345495	108711
78	INDIAN BANK	B06	2015	1738	598	2336	0	15973505	68562
79	INDIAN OVERSEAS BANK	B07	2015	2542	1029	3571	563	9173739	49058
80	PUNJAB AND SIND BANK	B08	2015	1024	244	1268	0	1874903	0
81	PUNJAB NATIONAL BANK	B09	2015	4575	3773	8348	12067	34946160	143633
82	STATE BANK OF INDIA	B10	2015	22635	31487	54122	215602	205926845	3158032
83	UCO BANK	B11	2015	1524	572	2096	0	6280668	0
84	UNION BANK OF INDIA	B12	2015	4061	2959	7020	16931	19448862	84151
85	BANK OF BARODA	B01	2014	4187	2067	6254	10998	14544809	75548
86	BANK OF INDIA	B02	2014	2340	1885	4225	2818	16923918	130426
87	BANK OF MAHARASHTRA	B03	2014	1409	418	1827	23	4521222	27073
88	CANARA BANK	B04	2014	4055	2257	6312	1073	15129787	68158
89	CENTRAL BANK OF INDIA	B05	2014	2005	1623	3628	1428	7212820	52272
90	INDIAN BANK	B06	2014	1612	509	2121	0	11391049	63149
91	INDIAN OVERSEAS BANK	B07	2014	1606	927	2533	525	5263270	47774
92	PUNJAB AND SIND BANK	B08	2014	846	162	1008	0	483847	0
93	PUNJAB NATIONAL BANK	B09	2014	3481	3459	6940	10970	24993312	126568
94	STATE BANK OF INDIA	B10	2014	23042	20473	43515	135853	122223125	2858116
95	UCO BANK	B11	2014	1450	635	2085	0	4231712	0
96	UNION BANK OF INDIA	B12	2014	3396	3033	6429	6480	12266026	60186
97	BANK OF BARODA	B01	2013	1790	840	2630	5485	10248562	80208
98	BANK OF INDIA	B02	2013	1103	1030	2133	1925	13602785	121062
99	BANK OF MAHARASHTRA	B03	2013	445	247	692	77	3424267	16897
100	CANARA BANK	B04	2013	1771	1755	3526	1064	9552747	61039
101	CENTRAL BANK OF INDIA	B05	2013	1389	1140	2529	0	4193703	54611
102	INDIAN BANK	B06	2013	963	359	1322	0	8952273	52104
103	INDIAN OVERSEAS BANK	B07	2013	1164	719	1883	442	4334559	44171
104	PUNJAB AND SIND BANK	B08	2013	146	33	179	0	188204	0
105	PUNJAB NATIONAL BANK	B09	2013	3086	3226	6312	8866	20658696	115781
106	STATE BANK OF INDIA	B10	2013	18708	13883	32591	65548	136416229	2572777
107	UCO BANK	B11	2013	850	450	1300	0	2666328	0
108	UNION BANK OF INDIA	B12	2013	2477	2126	4603	2976	9520632	46579
109	BANK OF BARODA	B01	2012	1372	640	2012	4296	7968242	69529
110	BANK OF INDIA	B02	2012	860	820	1680	1930	10343550	120120
111	BANK OF MAHARASHTRA	B03	2012	360	142	502	77	2492799	26332
112	CANARA BANK	B04	2012	1530	1332	2862	1027	7192400	57586
113	CENTRAL BANK OF INDIA	B05	2012	930	753	1683	0	4663025	55703
114	INDIAN BANK	B06	2012	923	359	1282	0	7399952	43449
115	INDIAN OVERSEAS BANK	B07	2012	903	540	1443	618	3465867	34568

S.No.	Name of Bank	Code	Year						
116	PUNJAB AND SIND BANK	B08	2012	101	17	118	0	75510	0
117	PUNJAB NATIONAL BANK	B09	2012	3059	2950	6009	376	16908880	102997
118	STATE BANK OF INDIA	B10	2012	15735	11408	27143	0	112002846	2225141
119	UCO BANK	B11	2012	551	313	864	0	1800080	0
120	UNION BANK OF INDIA	B12	2012	2156	1644	3800	2681	7556321	42190

S.No.	Name of Bank	Code	Year	No. of Transactions-Credit Card-Actuals at ATM	No. of Transactions-Debit Card-Actuals at ATM	No. of Transactions-Credit Card-Actuals at POS	No. of Transactions-Debit Card-Actuals at POS
S.No.	Name	Code	Year	ATM_T_CC	ATM_T_DC	POS_T_CC	POS_T_DC
1	BANK OF BARODA	B01	2021	10851	30255295	1497310	16591322
2	BANK OF INDIA	B02	2021	10899	20538535	281147	10085955
3	BANK OF MAHARASHTRA	B03	2021	248	7317619	28542	4626509
4	CANARA BANK	B04	2021	55148	34184823	988634	19177751
5	CENTRAL BANK OF INDIA	B05	2021	0	11781678	0	5875286
6	INDIAN BANK	B06	2021	4871	21792510	188189	10426604
7	INDIAN OVERSEAS BANK	B07	2021	654	14125093	72731	5474832
8	PUNJAB AND SIND BANK	B08	2021	0	1626503	0	1100661
9	PUNJAB NATIONAL BANK	B09	2021	4190	32971370	604927	17500829
10	STATE BANK OF INDIA	B10	2021	99770	199451541	37330306	107968170
11	UCO BANK	B11	2021	0	6823118	0	3594753
12	UNION BANK OF INDIA	B12	2021	8013	48353308	697821	18607692
13	BANK OF BARODA	B01	2020	12997	25998678	979604	15701935
14	BANK OF INDIA	B02	2020	14079	17711223	387725	10077058
15	BANK OF MAHARASHTRA	B03	2020	0	6693313	0	4547972
16	CANARA BANK	B04	2020	51698	22983072	741506	12444476
17	CENTRAL BANK OF INDIA	B05	2020	1183	10728352	117246	5873986
18	INDIAN BANK	B06	2020	3763	22292568	155636	7093535
19	INDIAN OVERSEAS BANK	B07	2020	827	11958822	82296	4878567
20	PUNJAB AND SIND BANK	B08	2020	0	1433112	0	916743
21	PUNJAB NATIONAL BANK	B09	2020	3546	21774219	539446	12501815
22	STATE BANK OF INDIA	B10	2020	125814	170888905	31230912	104990278
23	UCO BANK	B11	2020	0	5737998	0	3505914
24	UNION BANK OF INDIA	B12	2020	2881	24470877	185217	8973398

25	BANK OF BARODA	B01	2019	9723	21380280	652002	12629611
26	BANK OF INDIA	B02	2019	22372	41902267	326507	10437370
27	BANK OF MAHARASHTRA	B03	2019	0	7781056	0	2697764
28	CANARA BANK	B04	2019	53649	23472287	754684	11785676
29	CENTRAL BANK OF INDIA	B05	2019	2250	11720606	162510	5746795
30	INDIAN BANK	B06	2019	2903	38591358	144314	7509188
31	INDIAN OVERSEAS BANK	B07	2019	917	14361737	95288	4761900
32	PUNJAB AND SIND BANK	B08	2019	0	1467982	0	412563
33	PUNJAB NATIONAL BANK	B09	2019	8116	25135836	647511	14964814
34	STATE BANK OF INDIA	B10	2019	154499	417169584	26511681	117614529
35	UCO BANK	B11	2019	0	6099403	0	3357992
36	UNION BANK OF INDIA	B12	2019	4074	29827803	215859	4871284
37	BANK OF BARODA	B01	2018	5974	19238886	319728	12594592
38	BANK OF INDIA	B02	2018	28384	32004034	313409	9291844
39	BANK OF MAHARASHTRA	B03	2018	0	6884083	0	3717751
40	CANARA BANK	B04	2018	38577	22021803	498989	9297281
41	CENTRAL BANK OF INDIA	B05	2018	2624	11781029	146892	4510416
42	INDIAN BANK	B06	2018	2977	29630636	138944	5258684
43	INDIAN OVERSEAS BANK	B07	2018	849	11143329	97409	3631116
44	PUNJAB AND SIND BANK	B08	2018	0	1206993	0	342252
45	PUNJAB NATIONAL BANK	B09	2018	8661	23221197	603137	12016294
46	STATE BANK OF INDIA	B10	2018	141238	365769871	20229099	92932626
47	UCO BANK	B11	2018	0	5422126	0	2543424
48	UNION BANK OF INDIA	B12	2018	3596	25799223	186565	6143949
49	BANK OF BARODA	B01	2017	6968	15974728	353111	8352913
50	BANK OF INDIA	B02	2017	13543	28534271	206140	7811235
51	BANK OF MAHARASHTRA	B03	2017	0	5702200	0	2159703
52	CANARA BANK	B04	2017	34490	18209171	500973	8183650
53	CENTRAL BANK OF INDIA	B05	2017	3157	10239025	164267	3606883
54	INDIAN BANK	B06	2017	2906	26433889	143283	5227428
55	INDIAN OVERSEAS BANK	B07	2017	447	9311604	60610	2833906
56	PUNJAB AND SIND BANK	B08	2017	0	850029	0	315551
57	PUNJAB NATIONAL BANK	B09	2017	6907	22323433	335064	11862484
58	STATE BANK OF INDIA	B10	2017	92846	364553210	14605626	82859489
59	UCO BANK	B11	2017	0	4932776	0	2151536
60	UNION BANK OF INDIA	B12	2017	2552	18645663	151814	3160194
61	BANK OF BARODA	B01	2016	7242	17551603	221164	3155674
62	BANK OF INDIA	B02	2016	19223	25224835	146164	3251029
63	BANK OF MAHARASHTRA	B03	2016	402	6015948	81569	399771
64	CANARA BANK	B04	2016	39449	19342031	293812	3049679
65	CENTRAL BANK OF INDIA	B05	2016	5193	10051400	128129	1026840

66	INDIAN BANK	B06	2016	3602	20639392	109157	1669065
67	INDIAN OVERSEAS BANK	B07	2016	1204	7406595	27711	563207
68	PUNJAB AND SIND BANK	B08	2016	0	1139800	0	69406
69	PUNJAB NATIONAL BANK	B09	2016	7974	24001228	217546	3761854
70	STATE BANK OF INDIA	B10	2016	84905	367722234	10132120	34891679
71	UCO BANK	B11	2016	0	5205668	0	783507
72	UNION BANK OF INDIA	B12	2016	2230	16976861	102007	890594
73	BANK OF BARODA	B01	2015	2985	14667943	140514	2174710
74	BANK OF INDIA	B02	2015	14003	21124620	123304	2484550
75	BANK OF MAHARASHTRA	B03	2015	484	5203299	62965	397267
76	CANARA BANK	B04	2015	22725	15284197	174459	1883679
77	CENTRAL BANK OF INDIA	B05	2015	6875	8284632	102993	536727
78	INDIAN BANK	B06	2015	3078	14995520	95792	1376938
79	INDIAN OVERSEAS BANK	B07	2015	3689	9766165	30456	482447
80	PUNJAB AND SIND BANK	B08	2015	0	658432	0	23729
81	PUNJAB NATIONAL BANK	B09	2015	3175	21160658	172062	2563190
82	STATE BANK OF INDIA	B10	2015	75158	309907768	7621279	18663939
83	UCO BANK	B11	2015	0	4428184	0	572122
84	UNION BANK OF INDIA	B12	2015	1112	14277259	78818	765896
85	BANK OF BARODA	B01	2014	1780	11957979	112816	1348186
86	BANK OF INDIA	B02	2014	10579	16507202	115819	1549877
87	BANK OF MAHARASHTRA	B03	2014	432	4182923	39465	499233
88	CANARA BANK	B04	2014	10524	15357170	60393	1085958
89	CENTRAL BANK OF INDIA	B05	2014	1275	6524731	70937	348367
90	INDIAN BANK	B06	2014	3159	12693002	85136	934254
91	INDIAN OVERSEAS BANK	B07	2014	3102	8632471	27654	464548
92	PUNJAB AND SIND BANK	B08	2014	0	380086	0	6906
93	PUNJAB NATIONAL BANK	B09	2014	2430	20040903	165919	1912191
94	STATE BANK OF INDIA	B10	2014	52102	233020443	5725442	12655842
95	UCO BANK	B11	2014	0	3686517	0	417481
96	UNION BANK OF INDIA	B12	2014	1145	13139184	63884	799790
97	BANK OF BARODA	B01	2013	1361	9478057	92784	943652
98	BANK OF INDIA	B02	2013	10049	12520527	96856	1038362
99	BANK OF MAHARASHTRA	B03	2013	217	3187385	26670	324359
100	CANARA BANK	B04	2013	9528	12034730	56470	703940
101	CENTRAL BANK OF INDIA	B05	2013	497	2156634	50150	170967
102	INDIAN BANK	B06	2013	2795	11503514	65122	606331
103	INDIAN OVERSEAS BANK	B07	2013	2915	3964923	40546	379610
104	PUNJAB AND SIND BANK	B08	2013	0	150955	0	51
105	PUNJAB NATIONAL BANK	B09	2013	2270	18555300	147780	1586456
106	STATE BANK OF INDIA	B10	2013	34924	229577772	4713204	11093471

S.No.	Name of Bank	Code	Year				
107	UCO BANK	B11	2013	0	2722502	0	290712
108	UNION BANK OF INDIA	B12	2013	805	9796557	53974	591418
109	BANK OF BARODA	B01	2012	959	7735365	79224	578914
110	BANK OF INDIA	B02	2012	9309	10347443	87180	487396
111	BANK OF MAHARASHTRA	B03	2012	129	3116285	15209	200799
112	CANARA BANK	B04	2012	9368	7297065	55827	573726
113	CENTRAL BANK OF INDIA	B05	2012	136	8106511	49960	84313
114	INDIAN BANK	B06	2012	2409	10655284	52044	471307
115	INDIAN OVERSEAS BANK	B07	2012	3150	3679495	34676	281998
116	PUNJAB AND SIND BANK	B08	2012	0	69763	0	0
117	PUNJAB NATIONAL BANK	B09	2012	2428	40732553	114472	1279923
118	STATE BANK OF INDIA	B10	2012	29110	202303865	3517581	6910146
119	UCO BANK	B11	2012	0	2080836	0	150742
120	UNION BANK OF INDIA	B12	2012	845	7218895	44023	396613

Details of Depended Variables

S.No.	Name of Bank	Code	Year	Interest Earnings	Non-Int. Earnings	Net Interest Income	Operating Profit
S.No.	Name	Code	Year	I	NI	NII	OPP
1	BANK OF BARODA	B01	2021	70495.06	12364.44	28809.03	20629.81
2	BANK OF INDIA	B02	2021	40599.44	7441.49	14269.84	10872.22
3	BANK OF MAHARASHTRA	B03	2021	11868.54	2625.27	4897.47	3957.68
4	CANARA BANK	B04	2021	69239.78	15285.29	24062.16	20009.27
5	CENTRAL BANK OF INDIA	B05	2021	22730.23	3167.21	8245.04	4630.02
6	INDIAN BANK	B06	2021	39105.79	6079.25	15665.95	11395.65
7	INDIAN OVERSEAS BANK	B07	2021	16965.53	5559.02	5898.51	5895.81
8	PUNJAB AND SIND BANK	B08	2021	6973.91	902.80	2261.92	771.22
9	PUNJAB NATIONAL BANK	B09	2021	80749.77	12811.85	30476.98	22980.08
10	STATE BANK OF INDIA	B10	2021	265150.63	43496.37	110710.00	71554.15
11	UCO BANK	B11	2021	14446.15	3720.27	5479.70	5420.62
12	UNION BANK OF INDIA	B12	2021	68767.33	11336.85	24688.43	19259.29
13	BANK OF BARODA	B01	2020	75983.66	10317.32	27451.29	18896.22
14	BANK OF INDIA	B02	2020	42353.27	6713.07	15256.98	11518.65
15	BANK OF MAHARASHTRA	B03	2020	11495.45	1649.23	4278.80	2847.06
16	CANARA BANK	B04	2020	48934.99	7813.15	13123.91	9359.83
17	CENTRAL BANK OF INDIA	B05	2020	23562.47	3636.82	7628.85	4344.15

			2020				
18	INDIAN BANK	B06		21404.97	3312.46	7606.42	6498.04
19	INDIAN OVERSEAS BANK	B07	2020	17406.11	3359.68	5302.84	3533.68
20	PUNJAB AND SIND BANK	B08	2020	7929.53	897.40	2057.54	1096.91
21	PUNJAB NATIONAL BANK	B09	2020	53800.03	9274.13	17437.79	14738.55
22	STATE BANK OF INDIA	B10	2020	257323.59	45221.48	98084.83	68132.61
23	UCO BANK	B11	2020	15134.33	2871.21	5092.27	4835.60
24	UNION BANK OF INDIA	B12	2020	37231.12	5260.79	11436.75	9181.12
25	BANK OF BARODA	B01	2019	49770.61	6294.49	18480.31	13486.82
26	BANK OF INDIA	B02	2019	40767.81	4658.89	13657.67	8092.21
27	BANK OF MAHARASHTRA	B03	2019	10849.60	1547.45	3733.49	2197.61
28	CANARA BANK	B04	2019	46810.34	6574.96	14478.12	10590.87
29	CENTRAL BANK OF INDIA	B05	2019	22638.57	2412.94	6772.18	3126.49
30	INDIAN BANK	B06	2019	19184.81	1882.89	7018.09	4880.62
31	INDIAN OVERSEAS BANK	B07	2019	17631.26	4206.32	5279.13	5033.87
32	PUNJAB AND SIND BANK	B08	2019	8558.67	828.28	2279.70	1396.86
33	PUNJAB NATIONAL BANK	B09	2019	51310.25	7377.41	17156.31	12995.24
34	STATE BANK OF INDIA	B10	2019	242868.65	36774.89	88348.88	55436.03
35	UCO BANK	B11	2019	14330.63	1513.51	4311.15	2760.24
36	UNION BANK OF INDIA	B12	2019	34066.66	4473.95	10214.91	7521.23
37	BANK OF BARODA	B01	2018	43648.54	6657.15	15521.77	12005.56
38	BANK OF INDIA	B02	2018	38071.41	5733.76	10506.34	7138.93
39	BANK OF MAHARASHTRA	B03	2018	11096.41	1506.05	3389.73	2191.40
40	CANARA BANK	B04	2018	41252.09	6942.85	12163.33	9548.24
41	CENTRAL BANK OF INDIA	B05	2018	24035.52	2622.35	6517.01	2732.99
42	INDIAN BANK	B06	2018	17113.65	2405.84	6263.55	5000.99
43	INDIAN OVERSEAS BANK	B07	2018	17915.21	3746.44	5467.57	3629.08
44	PUNJAB AND SIND BANK	B08	2018	7948.75	581.20	2235.20	1144.71
45	PUNJAB NATIONAL BANK	B09	2018	47995.77	8880.87	14922.40	10294.20
46	STATE BANK OF INDIA	B10	2018	220499.32	44600.69	74853.72	59510.96
47	UCO BANK	B11	2018	14020.13	1121.00	3124.72	1334.24
48	UNION BANK OF INDIA	B12	2018	32748.00	4989.87	9304.66	7639.58
49	BANK OF BARODA	B01	2017	42199.93	6758.06	13513.41	10975.07
50	BANK OF INDIA	B02	2017	39290.85	6772.33	11826.12	9732.65
51	BANK OF MAHARASHTRA	B03	2017	12061.96	1508.07	3174.69	1827.07
52	CANARA BANK	B04	2017	41387.64	7554.40	9871.78	8913.89
53	CENTRAL BANK OF INDIA	B05	2017	24661.41	2875.64	6574.01	3088.63
54	INDIAN BANK	B06	2017	16039.75	2211.37	5146.05	4000.71
55	INDIAN OVERSEAS BANK	B07	2017	19718.60	3372.64	5189.58	3650.20
56	PUNJAB AND SIND BANK	B08	2017	8172.87	578.10	2159.33	1241.88
57	PUNJAB NATIONAL BANK	B09	2017	47275.99	8951.37	14993.17	14565.16
58	STATE BANK OF INDIA	B10	2017	223959.78	42747.00	75109.85	59571.61

59	UCO BANK	B11	2017	16325.80	2114.49	3816.78	2926.08
60	UNION BANK OF INDIA	B12	2017	32659.98	4964.60	8903.34	7430.09
61	BANK OF BARODA	B01	2016	44061.28	4998.86	12739.85	8815.58
62	BANK OF INDIA	B02	2016	41796.47	3652.54	11724.62	6035.62
63	BANK OF MAHARASHTRA	B03	2016	13052.99	1019.29	3878.70	2345.18
64	CANARA BANK	B04	2016	44022.14	4875.23	9763.36	7146.66
65	CENTRAL BANK OF INDIA	B05	2016	25887.90	1938.79	7065.63	2342.42
66	INDIAN BANK	B06	2016	16243.78	1781.42	4446.18	3032.09
67	INDIAN OVERSEAS BANK	B07	2016	23517.29	2528.26	5382.69	2885.46
68	PUNJAB AND SIND BANK	B08	2016	8744.34	478.49	2175.79	1269.90
69	PUNJAB NATIONAL BANK	B09	2016	47424.35	6000.05	15311.78	11339.38
70	STATE BANK OF INDIA	B10	2016	214971.72	33429.56	72387.56	53733.00
71	UCO BANK	B11	2016	18560.97	1596.31	4848.02	3603.39
72	UNION BANK OF INDIA	B12	2016	32198.80	3631.74	8313.10	5642.62
73	BANK OF BARODA	B01	2015	42963.56	4402.00	13187.23	9915.10
74	BANK OF INDIA	B02	2015	43464.71	4197.90	11378.46	7487.77
75	BANK OF MAHARASHTRA	B03	2015	12665.44	1005.98	3875.04	2355.09
76	CANARA BANK	B04	2015	43750.04	4550.25	9663.67	6950.37
77	CENTRAL BANK OF INDIA	B05	2015	26408.78	1894.23	7247.07	3559.12
78	INDIAN BANK	B06	2015	15852.94	1363.36	4461.29	3013.72
79	INDIAN OVERSEAS BANK	B07	2015	23938.33	2138.60	5383.96	3322.34
80	PUNJAB AND SIND BANK	B08	2015	8588.55	428.75	1679.19	775.45
81	PUNJAB NATIONAL BANK	B09	2015	46315.36	5890.73	16555.57	11954.75
82	STATE BANK OF INDIA	B10	2015	202086.23	27616.45	69316.27	48857.64
83	UCO BANK	B11	2015	19358.99	2003.54	5562.45	4910.22
84	UNION BANK OF INDIA	B12	2015	32083.96	3523.00	8443.90	5823.47
85	BANK OF BARODA	B01	2014	38939.71	4462.74	11965.35	9291.02
86	BANK OF INDIA	B02	2014	37910.10	4291.84	10830.53	8422.90
87	BANK OF MAHARASHTRA	B03	2014	11956.66	894.19	3508.93	2006.37
88	CANARA BANK	B04	2014	39547.61	3932.76	8944.45	6796.19
89	CENTRAL BANK OF INDIA	B05	2014	24427.55	1922.58	6494.39	3238.03
90	INDIAN BANK	B06	2014	15249.21	1371.68	4360.42	2900.60
91	INDIAN OVERSEAS BANK	B07	2014	22683.73	2169.34	5576.82	3997.24
92	PUNJAB AND SIND BANK	B08	2014	7972.71	427.28	1620.58	800.54
93	PUNJAB NATIONAL BANK	B09	2014	43223.25	4576.71	16145.97	11384.45
94	STATE BANK OF INDIA	B10	2014	184172.19	22707.51	62987.63	40477.32
95	UCO BANK	B11	2014	18229.92	1320.51	6059.09	4940.40
96	UNION BANK OF INDIA	B12	2014	29349.39	2821.54	7879.33	5218.11
97	BANK OF BARODA	B01	2013	35196.65	3630.62	11315.27	8999.15
98	BANK OF INDIA	B02	2013	31908.93	3766.04	9024.00	7458.50
99	BANK OF MAHARASHTRA	B03	2013	9613.43	912.00	3033.35	2148.71

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S.No.	Name of Bank	Code	Year	Net Profit (Net PAT)	Total Earnings	Fixed Assets	Total Assets
100	CANARA BANK	B04	2013	34077.94	3153.01	7878.99	5890.01
101	CENTRAL BANK OF INDIA	B05	2013	21860.65	1667.33	5737.57	3172.57
102	INDIAN BANK	B06	2013	13897.43	1283.15	4529.05	3061.35
103	INDIAN OVERSEAS BANK	B07	2013	20676.73	1972.90	5251.95	3817.01
104	PUNJAB AND SIND BANK	B08	2013	7340.12	394.22	1641.02	938.85
105	PUNJAB NATIONAL BANK	B09	2013	41885.82	4223.43	14849.00	10907.37
106	STATE BANK OF INDIA	B10	2013	163765.67	19746.18	57232.26	39806.88
107	UCO BANK	B11	2013	16751.71	952.17	4581.54	3357.09
108	UNION BANK OF INDIA	B12	2013	25124.70	2552.03	7542.84	5582.70
109	BANK OF BARODA	B01	2012	29673.72	3422.33	10317.01	8580.62
110	BANK OF INDIA	B02	2012	28480.67	3321.17	8313.43	6693.95
111	BANK OF MAHARASHTRA	B03	2012	7213.96	640.67	2517.09	1515.24
112	CANARA BANK	B04	2012	30850.62	2927.60	7689.31	5943.16
113	CENTRAL BANK OF INDIA	B05	2012	19149.50	1395.30	5168.64	2814.95
114	INDIAN BANK	B06	2012	12231.32	1232.16	4418.00	3463.17
115	INDIAN OVERSEAS BANK	B07	2012	17889.11	1681.04	5016.17	3534.15
116	PUNJAB AND SIND BANK	B08	2012	6474.50	417.46	1501.06	760.00
117	PUNJAB NATIONAL BANK	B09	2012	36476.13	4202.60	13414.44	10614.29
118	STATE BANK OF INDIA	B10	2012	143555.15	17823.06	54694.25	39787.45
119	UCO BANK	B11	2012	14632.37	965.56	3902.10	2811.42
120	UNION BANK OF INDIA	B12	2012	21028.45	2448.20	6793.07	5253.75

S.No.	Name of Bank	Code	Year	Net Profit (Net PAT)	Total Earnings	Fixed Assets	Total Assets
S.No.	Name	Code	Year	PAT	TE	FA	TA
1	BANK OF BARODA	B01	2021	828.96	82859.50	8016.25	1155364.77
2	BANK OF INDIA	B02	2021	2160.30	48040.93	8914.13	725856.45
3	BANK OF MAHARASHTRA	B03	2021	550.25	14493.81	1674.00	196665.01
4	CANARA BANK	B04	2021	2557.58	84525.08	11206.53	1153675.03
5	CENTRAL BANK OF INDIA	B05	2021	-887.58	25897.45	5132.42	369214.99
6	INDIAN BANK	B06	2021	3004.68	45185.04	7376.31	626005.02
7	INDIAN OVERSEAS BANK	B07	2021	831.47	22524.55	2918.78	274010.35

#	Bank	Code	Year				
8	PUNJAB AND SIND BANK	B08	2021	-2732.90	7876.72	1584.91	110481.89
9	PUNJAB NATIONAL BANK	B09	2021	2021.62	93561.62	11020.90	1260632.62
10	STATE BANK OF INDIA	B10	2021	20410.47	308647.01	38419.24	4534429.63
11	UCO BANK	B11	2021	167.03	18166.41	3218.23	253336.11
12	UNION BANK OF INDIA	B12	2021	2905.97	80104.19	7343.87	1071705.84
13	BANK OF BARODA	B01	2020	546.19	86300.98	8889.29	1157915.52
14	BANK OF INDIA	B02	2020	-2956.89	49066.34	8982.00	656995.48
15	BANK OF MAHARASHTRA	B03	2020	388.58	13144.67	1676.19	168867.18
16	CANARA BANK	B04	2020	-2235.72	56748.14	8276.29	723874.75
17	CENTRAL BANK OF INDIA	B05	2020	-1121.35	27199.29	4336.18	356249.10
18	INDIAN BANK	B06	2020	753.36	24717.43	3895.74	309468.17
19	INDIAN OVERSEAS BANK	B07	2020	-8527.40	20765.79	3127.34	260726.83
20	PUNJAB AND SIND BANK	B08	2020	-990.80	8826.92	1240.83	100503.81
21	PUNJAB NATIONAL BANK	B09	2020	336.19	63074.16	7239.07	830665.91
22	STATE BANK OF INDIA	B10	2020	14488.11	302545.07	38439.28	3951393.92
23	UCO BANK	B11	2020	-2436.83	18005.55	2840.37	235908.15
24	UNION BANK OF INDIA	B12	2020	-2897.78	42491.91	4762.52	550683.27
25	BANK OF BARODA	B01	2019	433.52	56065.10	6990.30	780987.40
26	BANK OF INDIA	B02	2019	-5546.90	45426.70	8920.04	625222.84
27	BANK OF MAHARASHTRA	B03	2019	-4783.88	12397.06	1775.53	164535.53
28	CANARA BANK	B04	2019	347.02	53385.30	8410.23	694766.69
29	CENTRAL BANK OF INDIA	B05	2019	-5641.48	25051.51	4310.24	330717.66
30	INDIAN BANK	B06	2019	321.95	21067.70	3961.40	280065.27
31	INDIAN OVERSEAS BANK	B07	2019	-3737.88	21837.58	3336.90	250008.36
32	PUNJAB AND SIND BANK	B08	2019	-543.48	9386.95	1230.38	108982.05
33	PUNJAB NATIONAL BANK	B09	2019	-9975.49	58687.66	6224.85	774949.46
34	STATE BANK OF INDIA	B10	2019	862.23	279643.54	39197.57	3680914.25
35	UCO BANK	B11	2019	-4321.08	15844.15	2822.31	230484.08
36	UNION BANK OF INDIA	B12	2019	-2947.45	38540.61	3762.29	494038.84
37	BANK OF BARODA	B01	2018	-2431.81	50305.69	5367.39	719999.77
38	BANK OF INDIA	B02	2018	-6043.71	43805.17	8265.29	609574.83
39	BANK OF MAHARASHTRA	B03	2018	-1145.65	12602.46	1516.68	156328.75
40	CANARA BANK	B04	2018	-4222.24	48194.94	8318.64	616886.10
41	CENTRAL BANK OF INDIA	B05	2018	-5104.90	26657.87	4343.38	326225.28
42	INDIAN BANK	B06	2018	1258.99	19519.48	3418.35	252715.82
43	INDIAN OVERSEAS BANK	B07	2018	-6299.49	21661.65	2893.43	247968.03
44	PUNJAB AND SIND BANK	B08	2018	-743.80	8529.95	1082.60	113759.24
45	PUNJAB NATIONAL BANK	B09	2018	-12282.82	56876.64	6349.33	765830.10
46	STATE BANK OF INDIA	B10	2018	-6547.45	265100.00	39992.25	3454752.00
47	UCO BANK	B11	2018	-4436.37	15141.13	2875.10	216056.18
48	UNION BANK OF INDIA	B12	2018	-5247.37	37737.87	3833.33	487380.09

49	BANK OF BARODA	B01	2017	1383.14	48957.99	5758.37	694875.42
50	BANK OF INDIA	B02	2017	-1558.31	46063.18	8461.86	626309.27
51	BANK OF MAHARASHTRA	B03	2017	-1372.51	13570.03	1586.08	159323.98
52	CANARA BANK	B04	2017	1121.92	48942.04	7168.32	583519.44
53	CENTRAL BANK OF INDIA	B05	2017	-2439.10	27537.05	4290.37	333401.94
54	INDIAN BANK	B06	2017	1405.68	18251.12	3442.60	218233.15
55	INDIAN OVERSEAS BANK	B07	2017	-3416.74	23091.23	3054.33	247167.49
56	PUNJAB AND SIND BANK	B08	2017	201.08	8750.97	1095.43	96643.44
57	PUNJAB NATIONAL BANK	B09	2017	1324.80	56227.36	6273.25	720330.55
58	STATE BANK OF INDIA	B10	2017	-1382.68	266706.78	49883.74	3323191.05
59	UCO BANK	B11	2017	-1850.67	18440.29	2849.48	231339.71
60	UNION BANK OF INDIA	B12	2017	555.21	37624.58	3894.42	452704.44
61	BANK OF BARODA	B01	2016	-5395.54	49060.14	6253.78	671376.48
62	BANK OF INDIA	B02	2016	-6089.21	45449.01	8480.31	609913.93
63	BANK OF MAHARASHTRA	B03	2016	100.68	14072.28	1694.42	160957.32
64	CANARA BANK	B04	2016	-2812.82	48897.36	7198.10	552960.78
65	CENTRAL BANK OF INDIA	B05	2016	-1418.19	27826.68	4359.29	305466.10
66	INDIAN BANK	B06	2016	711.38	18025.20	3511.07	203710.38
67	INDIAN OVERSEAS BANK	B07	2016	-2897.33	26045.55	3270.46	274436.76
68	PUNJAB AND SIND BANK	B08	2016	335.97	9222.83	1133.44	102581.42
69	PUNJAB NATIONAL BANK	B09	2016	-3974.40	53424.40	5222.73	667390.46
70	STATE BANK OF INDIA	B10	2016	11589.36	248401.28	14279.46	2961646.48
71	UCO BANK	B11	2016	-2799.26	20157.28	2884.64	244882.53
72	UNION BANK OF INDIA	B12	2016	1351.60	35830.54	3939.87	404695.90
73	BANK OF BARODA	B01	2015	3398.44	47365.55	2874.85	714988.55
74	BANK OF INDIA	B02	2015	1708.92	47662.61	5885.54	618697.76
75	BANK OF MAHARASHTRA	B03	2015	450.69	13671.42	1432.17	146018.79
76	CANARA BANK	B04	2015	2702.62	48300.29	6949.45	548000.56
77	CENTRAL BANK OF INDIA	B05	2015	606.45	28303.01	2833.16	311940.50
78	INDIAN BANK	B06	2015	1005.17	17216.30	2968.73	192835.97
79	INDIAN OVERSEAS BANK	B07	2015	-454.33	26076.93	2507.06	285636.98
80	PUNJAB AND SIND BANK	B08	2015	121.35	9017.30	994.83	97753.40
81	PUNJAB NATIONAL BANK	B09	2015	3061.58	52206.09	3551.48	603333.60
82	STATE BANK OF INDIA	B10	2015	16301.95	229702.68	12231.23	2606657.59
83	UCO BANK	B11	2015	1137.80	21362.54	1114.00	245916.91
84	UNION BANK OF INDIA	B12	2015	1781.64	35606.96	2681.95	381615.93
85	BANK OF BARODA	B01	2014	4541.08	43402.45	2734.12	659504.53
86	BANK OF INDIA	B02	2014	2729.27	42201.94	5786.06	573190.20
87	BANK OF MAHARASHTRA	B03	2014	385.97	12850.85	1446.01	136320.05
88	CANARA BANK	B04	2014	2438.19	43480.37	6641.56	491921.85
89	CENTRAL BANK OF INDIA	B05	2014	-1262.84	26350.13	2804.39	289496.22

90	INDIAN BANK	B06	2014	1158.95	16620.89	2932.18	187226.22
91	INDIAN OVERSEAS BANK	B07	2014	601.74	24853.08	2604.38	274898.67
92	PUNJAB AND SIND BANK	B08	2014	300.63	8399.99	1002.72	94509.15
93	PUNJAB NATIONAL BANK	B09	2014	3342.57	47799.97	3419.74	550419.92
94	STATE BANK OF INDIA	B10	2014	13668.57	206879.70	10396.25	2318496.82
95	UCO BANK	B11	2014	1510.54	19550.42	1061.76	239124.75
96	UNION BANK OF INDIA	B12	2014	1696.20	32170.93	2608.47	353780.90
97	BANK OF BARODA	B01	2013	4480.72	38827.28	2453.12	547135.44
98	BANK OF INDIA	B02	2013	2749.35	35674.97	2870.13	452602.72
99	BANK OF MAHARASHTRA	B03	2013	759.52	10525.43	1429.47	116952.81
100	CANARA BANK	B04	2013	2872.10	37230.94	2862.72	412342.61
101	CENTRAL BANK OF INDIA	B05	2013	1014.96	23527.98	2684.75	268129.55
102	INDIAN BANK	B06	2013	1581.14	15180.58	1690.51	162822.60
103	INDIAN OVERSEAS BANK	B07	2013	567.23	22649.63	1847.04	244656.03
104	PUNJAB AND SIND BANK	B08	2013	339.22	7734.34	844.13	80477.90
105	PUNJAB NATIONAL BANK	B09	2013	4747.67	46109.25	3357.68	478947.73
106	STATE BANK OF INDIA	B10	2013	17783.34	183511.85	9160.83	2065668.87
107	UCO BANK	B11	2013	618.20	17703.88	889.59	198651.40
108	UNION BANK OF INDIA	B12	2013	2157.93	27676.73	2479.01	312133.77
109	BANK OF BARODA	B01	2012	5006.96	33096.05	2341.50	447321.47
110	BANK OF INDIA	B02	2012	2677.52	31801.84	2771.59	384535.47
111	BANK OF MAHARASHTRA	B03	2012	430.83	7854.63	600.65	91137.39
112	CANARA BANK	B04	2012	3282.71	33778.22	2857.54	374160.19
113	CENTRAL BANK OF INDIA	B05	2012	533.04	20544.80	2473.91	229799.74
114	INDIAN BANK	B06	2012	1746.97	13463.48	1630.69	141419.20
115	INDIAN OVERSEAS BANK	B07	2012	1050.13	19570.15	1744.05	219637.13
116	PUNJAB AND SIND BANK	B08	2012	451.29	6891.96	808.38	72905.27
117	PUNJAB NATIONAL BANK	B09	2012	4884.20	40678.73	3168.86	458192.35
118	STATE BANK OF INDIA	B10	2012	15333.64	161378.21	7416.47	1771280.14
119	UCO BANK	B11	2012	1108.67	15597.93	804.75	180498.40
120	UNION BANK OF INDIA	B12	2012	1787.14	23476.66	2335.80	262211.44

Details for Control Variables

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S.No.	Name of Bank	Code	Year	Incorporation Year	Deposits	No. of Employees	Log of Age
S.No.	Name	Code	Year	INC_Y	D	EMP	AGE
1	BANK OF BARODA	B01	2021	1908	966996.93	82695.00	4.73
2	BANK OF INDIA	B02	2021	1906	627113.56	51459.00	4.74
3	BANK OF MAHARASHTRA	B03	2021	1935	174005.62	12387.00	4.45
4	CANARA BANK	B04	2021	1906	1010874.58	88450.00	4.74
5	CENTRAL BANK OF INDIA	B05	2021	1911	329972.95	32335.00	4.70
6	INDIAN BANK	B06	2021	1907	538071.11	41630.00	4.74
7	INDIAN OVERSEAS BANK	B07	2021	1937	240288.30	23571.00	4.43
8	PUNJAB AND SIND BANK	B08	2021	1908	96108.18	8832.00	4.73
9	PUNJAB NATIONAL BANK	B09	2021	1894	1106332.47	96241.00	4.84
10	STATE BANK OF INDIA	B10	2021	1955	3681277.08	245652.00	4.19
11	UCO BANK	B11	2021	1943	205919.39	22064.00	4.36
12	UNION BANK OF INDIA	B12	2021	1919	205919.39	78202.00	4.62
13	BANK OF BARODA	B01	2020	1908	945984.43	84692.00	4.72
14	BANK OF INDIA	B02	2020	1906	555504.98	49767.00	4.74
15	BANK OF MAHARASHTRA	B03	2020	1935	150066.40	12532.00	4.44
16	CANARA BANK	B04	2020	1906	625351.17	58632.00	4.74
17	CENTRAL BANK OF INDIA	B05	2020	1911	313763.16	33481.00	4.69
18	INDIAN BANK	B06	2020	1907	260225.90	18738.00	4.73
19	INDIAN OVERSEAS BANK	B07	2020	1937	222951.88	24880.00	4.42
20	PUNJAB AND SIND BANK	B08	2020	1908	89667.55	8891.00	4.72
21	PUNJAB NATIONAL BANK	B09	2020	1894	703846.32	63128.00	4.84
22	STATE BANK OF INDIA	B10	2020	1955	3241620.73	249448.00	4.17
23	UCO BANK	B11	2020	1943	193203.44	22490.00	4.34
24	UNION BANK OF INDIA	B12	2020	1919	450668.45	37365.00	4.62
25	BANK OF BARODA	B01	2019	1908	638689.72	55431.00	4.71
26	BANK OF INDIA	B02	2019	1906	520862.35	48807.00	4.73
27	BANK OF MAHARASHTRA	B03	2019	1935	140650.09	12913.00	4.43
28	CANARA BANK	B04	2019	1906	599033.27	58348.00	4.73
29	CENTRAL BANK OF INDIA	B05	2019	1911	299855.44	35675.00	4.68
30	INDIAN BANK	B06	2019	1907	242075.95	19527.00	4.72
31	INDIAN OVERSEAS BANK	B07	2019	1937	222534.08	26354.00	4.41
32	PUNJAB AND SIND BANK	B08	2019	1908	98557.60	8973.00	4.71
33	PUNJAB NATIONAL BANK	B09	2019	1894	676030.14	65116.00	4.83
34	STATE BANK OF INDIA	B10	2019	1955	2911386.01	257252.00	4.16

35	UCO BANK	B11	2019	1943	197906.78	23133.00	4.33
36	UNION BANK OF INDIA	B12	2019	1919	415915.27	37262.00	4.61
37	BANK OF BARODA	B01	2018	1908	591314.82	54915.00	4.70
38	BANK OF INDIA	B02	2018	1906	520854.38	48680.00	4.72
39	BANK OF MAHARASHTRA	B03	2018	1935	138981.18	12932.00	4.42
40	CANARA BANK	B04	2018	1906	524771.86	58853.00	4.72
41	CENTRAL BANK OF INDIA	B05	2018	1911	294838.86	36843.00	4.67
42	INDIAN BANK	B06	2018	1907	208294.22	19734.00	4.71
43	INDIAN OVERSEAS BANK	B07	2018	1937	216831.81	28086.00	4.39
44	PUNJAB AND SIND BANK	B08	2018	1908	101726.17	9320.00	4.70
45	PUNJAB NATIONAL BANK	B09	2018	1894	642226.19	69360.00	4.82
46	STATE BANK OF INDIA	B10	2018	1955	2706343.29	264041.00	4.14
47	UCO BANK	B11	2018	1943	181849.28	23943.00	4.32
48	UNION BANK OF INDIA	B12	2018	1919	408501.64	37589.00	4.60
49	BANK OF BARODA	B01	2017	1908	601675.17	51633.00	4.69
50	BANK OF INDIA	B02	2017	1906	540032.01	48129.00	4.71
51	BANK OF MAHARASHTRA	B03	2017	1935	139052.84	12974.00	4.41
52	CANARA BANK	B04	2017	1906	495275.24	55715.00	4.71
53	CENTRAL BANK OF INDIA	B05	2017	1911	296671.19	37132.00	4.66
54	INDIAN BANK	B06	2017	1907	182509.28	20861.00	4.70
55	INDIAN OVERSEAS BANK	B07	2017	1937	211342.63	29967.00	4.38
56	PUNJAB AND SIND BANK	B08	2017	1908	85540.16	9400.00	4.69
57	PUNJAB NATIONAL BANK	B09	2017	1894	621704.02	68986.00	4.81
58	STATE BANK OF INDIA	B10	2017	1955	2584616.81	279915.00	4.13
59	UCO BANK	B11	2017	1943	201284.51	24620.00	4.30
60	UNION BANK OF INDIA	B12	2017	1919	375899.01	36877.00	4.58
61	BANK OF BARODA	B01	2016	1908	574037.87	51837.00	4.68
62	BANK OF INDIA	B02	2016	1906	513004.52	49458.00	4.70
63	BANK OF MAHARASHTRA	B03	2016	1935	138989.82	13765.00	4.39
64	CANARA BANK	B04	2016	1906	479791.56	54008.00	4.70
65	CENTRAL BANK OF INDIA	B05	2016	1911	266184.19	37685.00	4.65
66	INDIAN BANK	B06	2016	1907	178285.84	20074.00	4.69
67	INDIAN OVERSEAS BANK	B07	2016	1937	224514.24	32020.00	4.37
68	PUNJAB AND SIND BANK	B08	2016	1908	91249.96	9403.00	4.68
69	PUNJAB NATIONAL BANK	B09	2016	1894	553051.13	65991.00	4.80
70	STATE BANK OF INDIA	B10	2016	1955	2240542.10	284163.00	4.11
71	UCO BANK	B11	2016	1943	207118.24	24724.00	4.29
72	UNION BANK OF INDIA	B12	2016	1919	342720.01	35473.00	4.57
73	BANK OF BARODA	B01	2015	1908	617559.52	49378.00	4.67
74	BANK OF INDIA	B02	2015	1906	531906.63	45301.00	4.69
75	BANK OF MAHARASHTRA	B03	2015	1935	122118.94	14189.00	4.38

76	CANARA BANK	B04	2015	1906	473840.10	53984.00	4.69
77	CENTRAL BANK OF INDIA	B05	2015	1911	255572.39	39039.00	4.64
78	INDIAN BANK	B06	2015	1907	169225.27	20222.00	4.68
79	INDIAN OVERSEAS BANK	B07	2015	1937	246048.72	32118.00	4.36
80	PUNJAB AND SIND BANK	B08	2015	1908	86714.72	9180.00	4.67
81	PUNJAB NATIONAL BANK	B09	2015	1894	501378.64	68290.00	4.80
82	STATE BANK OF INDIA	B10	2015	1955	2039756.84	282919.00	4.09
83	UCO BANK	B11	2015	1943	214336.71	23522.00	4.28
84	UNION BANK OF INDIA	B12	2015	1919	316869.92	35514.00	4.56
85	BANK OF BARODA	B01	2014	1908	568894.39	49617.00	4.66
86	BANK OF INDIA	B02	2014	1906	476974.05	43150.00	4.68
87	BANK OF MAHARASHTRA	B03	2014	1935	116803.09	14396.00	4.37
88	CANARA BANK	B04	2014	1906	420722.82	48794.00	4.68
89	CENTRAL BANK OF INDIA	B05	2014	1911	240068.99	40661.00	4.63
90	INDIAN BANK	B06	2014	1907	162274.82	19351.00	4.67
91	INDIAN OVERSEAS BANK	B07	2014	1937	227976.09	29922.00	4.34
92	PUNJAB AND SIND BANK	B08	2014	1908	84730.16	8870.00	4.66
93	PUNJAB NATIONAL BANK	B09	2014	1894	451396.75	60923.00	4.79
94	STATE BANK OF INDIA	B10	2014	1955	1828363.10	292439.00	4.08
95	UCO BANK	B11	2014	1943	199533.55	33806.00	4.26
96	UNION BANK OF INDIA	B12	2014	1919	297675.64	16499.00	4.55
97	BANK OF BARODA	B01	2013	1908	473883.34	49617.00	4.65
98	BANK OF INDIA	B02	2013	1906	381839.59	43150.00	4.67
99	BANK OF MAHARASHTRA	B03	2013	1935	94336.93	14396.00	4.36
100	CANARA BANK	B04	2013	1906	355855.99	48794.00	4.67
101	CENTRAL BANK OF INDIA	B05	2013	1911	226038.31	40661.00	4.62
102	INDIAN BANK	B06	2013	1907	141980.16	19351.00	4.66
103	INDIAN OVERSEAS BANK	B07	2013	1937	202135.35	29922.00	4.33
104	PUNJAB AND SIND BANK	B08	2013	1908	70641.50	8870.00	4.65
105	PUNJAB NATIONAL BANK	B09	2013	1894	391560.06	60923.00	4.78
106	STATE BANK OF INDIA	B10	2013	1955	1618444.90	292439.00	4.06
107	UCO BANK	B11	2013	1943	173431.05	23075.00	4.25
108	UNION BANK OF INDIA	B12	2013	1919	263761.57	33806.00	4.54
109	BANK OF BARODA	B01	2012	1908	384871.11	43108.00	4.64
110	BANK OF INDIA	B02	2012	1906	318216.03	42146.00	4.66
111	BANK OF MAHARASHTRA	B03	2012	1935	76528.65	13620.00	4.34
112	CANARA BANK	B04	2012	1906	327053.73	42693.00	4.66
113	CENTRAL BANK OF INDIA	B05	2012	1911	196173.33	37113.00	4.62
114	INDIAN BANK	B06	2012	1907	120803.80	18793.00	4.65
115	INDIAN OVERSEAS BANK	B07	2012	1937	178434.18	28280.00	4.32
116	PUNJAB AND SIND BANK	B08	2012	1908	63123.98	8533.00	4.64

S.No.	Name of Bank	Code	Year					
117	PUNJAB NATIONAL BANK	B09	2012	1894		379588.48	58898.00	4.77
118	STATE BANK OF INDIA	B10	2012	1955		1405024.10	295413.00	4.04
119	UCO BANK	B11	2012	1943		154003.49	24109.00	4.23
120	UNION BANK OF INDIA	B12	2012	1919		222868.95	31798.00	4.53

Details of Number of Branches

S.No.	Name of Bank	Code	Year	No. of Branches - Rural	No. of Branches - Semi-Urban	No. of Branches - Urban	No. of Branches - Metropolitan	No. of Branches - Total
S.No.	Name	Code	Year	BR_R	BR_SU	BR_U	BR_MP	BR_TTL
1	BANK OF BARODA	B01	2021	2849	2084	1487	1794	8214
2	BANK OF INDIA	B02	2021	1834	1449	810	932	5025
3	BANK OF MAHARASHTRA	B03	2021	611	459	374	471	1915
4	CANARA BANK	B04	2021	3070	3138	2117	2133	10458
5	CENTRAL BANK OF INDIA	B05	2021	1602	1331	813	863	4609
6	INDIAN BANK	B06	2021	1940	1584	1263	1215	6002
7	INDIAN OVERSEAS BANK	B07	2021	902	960	652	687	3201
8	PUNJAB AND SIND BANK	B08	2021	570	278	357	326	1531
9	PUNJAB NATIONAL BANK	B09	2021	3902	2678	2259	1929	10768
10	STATE BANK OF INDIA	B10	2021	7916	6501	3982	3834	22233
11	UCO BANK	B11	2021	1074	817	610	555	3056
12	UNION BANK OF INDIA	B12	2021	2556	2724	1979	2073	9332
13	BANK OF BARODA	B01	2020	2,929	2,516	1,875	2,162	9,482
14	BANK OF INDIA	B02	2020	1,833	1,449	810	932	5,024
15	BANK OF MAHARASHTRA	B03	2020	611	427	333	462	1,833
16	CANARA BANK	B04	2020	1,823	2,003	1,244	1,290	6,360
17	CENTRAL BANK OF INDIA	B05	2020	1,604	1,335	823	890	4,652
18	INDIAN BANK	B06	2020	742	832	630	620	2,824
19	INDIAN OVERSEAS BANK	B07	2020	908	960	672	714	3,254
20	PUNJAB AND SIND BANK	B08	2020	569	277	356	324	1,526
21	PUNJAB NATIONAL BANK	B09	2020	2,587	1,718	1,215	1,041	6,561
22	STATE BANK OF INDIA	B10	2020	7,892	6,444	3,935	3,890	22,161
23	UCO BANK	B11	2020	1,073	817	610	555	3,055
24	UNION BANK OF INDIA	B12	2020	1,246	1,296	850	889	4,281

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25	BANK OF BARODA	B01	2019	1,843	1,540	968	1,201	5,552
26	BANK OF INDIA	B02	2019	1,837	1,449	809	934	5,029
27	BANK OF MAHARASHTRA	B03	2019	609	427	333	463	1,832
28	CANARA BANK	B04	2019	1,820	1,999	1,223	1,299	6,341
29	CENTRAL BANK OF INDIA	B05	2019	1,604	1,341	833	883	4,661
30	INDIAN BANK	B06	2019	740	823	630	626	2,819
31	INDIAN OVERSEAS BANK	B07	2019	911	961	672	718	3,262
32	PUNJAB AND SIND BANK	B08	2019	566	277	351	324	1,518
33	PUNJAB NATIONAL BANK	B09	2019	2,588	1,712	1,218	1,049	6,567
34	STATE BANK OF INDIA	B10	2019	7,825	6,421	3,929	3,882	22,057
35	UCO BANK	B11	2019	1,073	819	610	558	3,060
36	UNION BANK OF INDIA	B12	2019	1,250	1,297	848	892	4,287
37	BANK OF BARODA	B01	2018	1,831	1,531	938	1,167	5,467
38	BANK OF INDIA	B02	2018	1,837	1,449	821	958	5,065
39	BANK OF MAHARASHTRA	B03	2018	609	429	337	471	1,846
40	CANARA BANK	B04	2018	1,809	1,990	1,219	1,301	6,319
41	CENTRAL BANK OF INDIA	B05	2018	1,605	1,347	838	899	4,689
42	INDIAN BANK	B06	2018	728	785	612	616	2,741
43	INDIAN OVERSEAS BANK	B07	2018	918	987	681	728	3,314
44	PUNJAB AND SIND BANK	B08	2018	564	276	350	324	1,514
45	PUNJAB NATIONAL BANK	B09	2018	2,570	1,714	1,220	1,059	6,563
46	STATE BANK OF INDIA	B10	2018	7,821	6,513	4,058	4,025	22,417
47	UCO BANK	B11	2018	1,073	819	611	559	3,062
48	UNION BANK OF INDIA	B12	2018	1,253	1,297	853	892	4,295
49	BANK OF BARODA	B01	2017	1,809	1,518	929	1,166	5,422
50	BANK OF INDIA	B02	2017	1,833	1,449	820	962	5,064
51	BANK OF MAHARASHTRA	B03	2017	611	436	351	499	1,897
52	CANARA BANK	B04	2017	1,773	1,935	1,191	1,283	6,182
53	CENTRAL BANK OF INDIA	B05	2017	1,605	1,349	853	913	4,720
54	INDIAN BANK	B06	2017	707	735	576	591	2,609
55	INDIAN OVERSEAS BANK	B07	2017	919	997	696	748	3,360
56	PUNJAB AND SIND BANK	B08	2017	557	274	345	324	1,500
57	PUNJAB NATIONAL BANK	B09	2017	2,536	1,698	1,209	1,061	6,504
58	STATE BANK OF INDIA	B10	2017	7934	7102	4435	4651	24122
59	UCO BANK	B11	2017	1070	817	611	559	3057
60	UNION BANK OF INDIA	B12	2017	1244	1287	851	890	4272
61	BANK OF BARODA	B01	2016	1,789	1,477	912	1,152	5,330
62	BANK OF INDIA	B02	2016	1,789	1,414	802	958	4,963
63	BANK OF MAHARASHTRA	B03	2016	610	436	350	499	1,895

64	CANARA BANK	B04	2016	1,713	1,853	1,126	1,235	5,927
65	CENTRAL BANK OF INDIA	B05	2016	1,599	1,350	848	914	4,711
66	INDIAN BANK	B06	2016	674	705	563	567	2,509
67	INDIAN OVERSEAS BANK	B07	2016	916	996	699	776	3,387
68	PUNJAB AND SIND BANK	B08	2016	552	266	337	326	1,481
69	PUNJAB NATIONAL BANK	B09	2016	2,472	1,656	1,193	1,041	6,362
70	STATE BANK OF INDIA	B10	2016	7760	7029	4298	4587	23674
71	UCO BANK	B11	2016	1054	810	609	563	3036
72	UNION BANK OF INDIA	B12	2016	1216	1263	839	878	4196
73	BANK OF BARODA	B01	2015	1744	1429	884	1133	5190
74	BANK OF INDIA	B02	2015	1720	1379	787	949	4835
75	BANK OF MAHARASHTRA	B03	2015	602	433	348	497	1880
76	CANARA BANK	B04	2015	1656	1793	1096	1214	5759
77	CENTRAL BANK OF INDIA	B05	2015	1593	1339	841	904	4677
78	INDIAN BANK	B06	2015	629	671	522	537	2359
79	INDIAN OVERSEAS BANK	B07	2015	908	983	692	788	3371
80	PUNJAB AND SIND BANK	B08	2015	542	259	325	330	1456
81	PUNJAB NATIONAL BANK	B09	2015	2405	1595	1168	1008	6176
82	STATE BANK OF INDIA	B10	2015	7520	6897	4150	4403	22970
83	UCO BANK	B11	2015	1025	797	595	560	2977
84	UNION BANK OF INDIA	B12	2015	1187	1214	816	860	4077
85	BANK OF BARODA	B01	2014	1622	1310	824	1093	4849
86	BANK OF INDIA	B02	2014	1601	1318	754	922	4595
87	BANK OF MAHARASHTRA	B03	2014	594	423	345	492	1854
88	CANARA BANK	B04	2014	1319	1490	951	1062	4822
89	CENTRAL BANK OF INDIA	B05	2014	1554	1303	823	886	4566
90	INDIAN BANK	B06	2014	583	633	483	502	2,201
91	INDIAN OVERSEAS BANK	B07	2014	873	941	669	773	3256
92	PUNJAB AND SIND BANK	B08	2014	472	242	298	318	1330
93	PUNJAB NATIONAL BANK	B09	2014	2251	1491	1111	962	5815
94	STATE BANK OF INDIA	B10	2014	7150	6708	3956	4250	22064
95	UCO BANK	B11	2014	989	739	566	557	2851
96	UNION BANK OF INDIA	B12	2014	1134	1138	761	833	3866
97	BANK OF BARODA	B01	2013	1308	1182	747	1013	4250
98	BANK OF INDIA	B02	2013	1456	1203	712	865	4236
99	BANK OF MAHARASHTRA	B03	2013	542	356	319	475	1692
100	CANARA BANK	B04	2013	965	1058	812	950	3785
101	CENTRAL BANK OF INDIA	B05	2013	1407	1209	801	877	4294
102	INDIAN BANK	B06	2013	506	590	469	471	2036

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103	INDIAN OVERSEAS BANK	B07	2013	732	829	619	711	2891
104	PUNJAB AND SIND BANK	B08	2013	360	202	264	304	1130
105	PUNJAB NATIONAL BANK	B09	2013	2108	1394	1050	933	5485
106	STATE BANK OF INDIA	B10	2013	6588	6287	3602	3941	20418
107	UCO BANK	B11	2013	887	613	525	545	2570
108	UNION BANK OF INDIA	B12	2013	970	1006	739	791	3506
109	BANK OF BARODA	B01	2012	1165	1046	701	967	3879
110	BANK OF INDIA	B02	2012	1354	1103	663	820	3940
111	BANK OF MAHARASHTRA	B03	2012	506	304	287	456	1553
112	CANARA BANK	B04	2012	901	1024	794	928	3647
113	CENTRAL BANK OF INDIA	B05	2012	1345	1067	763	835	4010
114	INDIAN BANK	B06	2012	455	553	451	451	1910
115	INDIAN OVERSEAS BANK	B07	2012	631	757	561	664	2613
116	PUNJAB AND SIND BANK	B08	2012	304	176	250	298	1028
117	PUNJAB NATIONAL BANK	B09	2012	2030	1332	1025	916	5303
118	STATE BANK OF INDIA	B10	2012	6186	5919	3391	3758	19254
119	UCO BANK	B11	2012	792	536	489	530	2347
120	UNION BANK OF INDIA	B12	2012	883	867	697	748	3195

Details of Misc. Normalization

S.No.	Name of Bank	Code	Deposits/Total Assets	Interest Earnings to Total Earnings	Non-Int. Earnings to Total Earnings	Net Interest Income to Total Earnings	Operating Profit to Total Earnings	Net Profit (Net PAT) to Total Earnings	Total Earnings to Total Assets
S.No.	Name	Code	D_TA	I_TE	NI_TE	NII_TE	OPP_TE	PAT_TE	TE_TA
1	BANK OF BARODA	B01	0.8370	0.8508	0.1492	0.3477	0.2490	0.0100	0.0717
2	BANK OF INDIA	B02	0.8640	0.8451	0.1549	0.2970	0.2263	0.0450	0.0662
3	BANK OF MAHARASHTRA	B03	0.8848	0.8189	0.1811	0.3379	0.2731	0.0380	0.0737
4	CANARA BANK	B04	0.8762	0.8192	0.1808	0.2847	0.2367	0.0303	0.0733
5	CENTRAL BANK OF INDIA	B05	0.8937	0.8777	0.1223	0.3184	0.1788	-0.0343	0.0701

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6	INDIAN BANK	B06	0.8595	0.8655	0.1345	0.3467	0.2522	0.0665	0.0722
7	INDIAN OVERSEAS BANK	B07	0.8769	0.7532	0.2468	0.2619	0.2618	0.0369	0.0822
8	PUNJAB AND SIND BANK	B08	0.8699	0.8854	0.1146	0.2872	0.0979	-0.3470	0.0713
9	PUNJAB NATIONAL BANK	B09	0.8776	0.8631	0.1369	0.3257	0.2456	0.0216	0.0742
10	STATE BANK OF INDIA	B10	0.8119	0.8591	0.1409	0.3587	0.2318	0.0661	0.0681
11	UCO BANK	B11	0.8128	0.7952	0.2048	0.3016	0.2984	0.0092	0.0717
12	UNION BANK OF INDIA	B12	0.1921	0.8585	0.1415	0.3082	0.2404	0.0363	0.0747
13	BANK OF BARODA	B01	0.8170	0.8804	0.1196	0.3181	0.2190	0.0063	0.0745
14	BANK OF INDIA	B02	0.8455	0.8632	0.1368	0.3109	0.2348	-0.0603	0.0747
15	BANK OF MAHARASHTRA	B03	0.8887	0.8745	0.1255	0.3255	0.2166	0.0296	0.0778
16	CANARA BANK	B04	0.8639	0.8623	0.1377	0.2313	0.1649	-0.0394	0.0784
17	CENTRAL BANK OF INDIA	B05	0.8807	0.8663	0.1337	0.2805	0.1597	-0.0412	0.0763
18	INDIAN BANK	B06	0.8409	0.8660	0.1340	0.3077	0.2629	0.0305	0.0799
19	INDIAN OVERSEAS BANK	B07	0.8551	0.8382	0.1618	0.2554	0.1702	-0.4106	0.0796
20	PUNJAB AND SIND BANK	B08	0.8922	0.8983	0.1017	0.2331	0.1243	-0.1122	0.0878
21	PUNJAB NATIONAL BANK	B09	0.8473	0.8530	0.1470	0.2765	0.2337	0.0053	0.0759
22	STATE BANK OF INDIA	B10	0.8204	0.8505	0.1495	0.3242	0.2252	0.0479	0.0766
23	UCO BANK	B11	0.8190	0.8405	0.1595	0.2828	0.2686	-0.1353	0.0763
24	UNION BANK OF INDIA	B12	0.8184	0.8762	0.1238	0.2692	0.2161	-0.0682	0.0772
25	BANK OF BARODA	B01	0.8178	0.8877	0.1123	0.3296	0.2406	0.0077	0.0718
26	BANK OF INDIA	B02	0.8331	0.8974	0.1026	0.3007	0.1781	-0.1221	0.0727
27	BANK OF MAHARASHTRA	B03	0.8548	0.8752	0.1248	0.3012	0.1773	-0.3859	0.0753
28	CANARA BANK	B04	0.8622	0.8768	0.1232	0.2712	0.1984	0.0065	0.0768
29	CENTRAL BANK OF INDIA	B05	0.9067	0.9037	0.0963	0.2703	0.1248	-0.2252	0.0757
30	INDIAN BANK	B06	0.8644	0.9106	0.0894	0.3331	0.2317	0.0153	0.0752
31	INDIAN OVERSEAS BANK	B07	0.8901	0.8074	0.1926	0.2417	0.2305	-0.1712	0.0873
32	PUNJAB AND SIND BANK	B08	0.9043	0.9118	0.0882	0.2429	0.1488	-0.0579	0.0861
33	PUNJAB NATIONAL BANK	B09	0.8724	0.8743	0.1257	0.2923	0.2214	-0.1700	0.0757
34	STATE BANK OF INDIA	B10	0.7909	0.8685	0.1315	0.3159	0.1982	0.0031	0.0760
35	UCO BANK	B11	0.8587	0.9045	0.0955	0.2721	0.1742	-0.2727	0.0687
36	UNION BANK OF INDIA	B12	0.8419	0.8839	0.1161	0.2650	0.1952	-0.0765	0.0780
37	BANK OF BARODA	B01	0.8213	0.8677	0.1323	0.3085	0.2387	-0.0483	0.0699
38	BANK OF INDIA	B02	0.8545	0.8691	0.1309	0.2398	0.1630	-0.1380	0.0719
39	BANK OF MAHARASHTRA	B03	0.8890	0.8805	0.1195	0.2690	0.1739	-0.0909	0.0806
40	CANARA BANK	B04	0.8507	0.8559	0.1441	0.2524	0.1981	-0.0876	0.0781
41	CENTRAL BANK OF INDIA	B05	0.9038	0.9016	0.0984	0.2445	0.1025	-0.1915	0.0817
42	INDIAN BANK	B06	0.8242	0.8767	0.1233	0.3209	0.2562	0.0645	0.0772
43	INDIAN OVERSEAS BANK	B07	0.8744	0.8270	0.1730	0.2524	0.1675	-0.2908	0.0874
44	PUNJAB AND SIND BANK	B08	0.8942	0.9319	0.0681	0.2620	0.1342	-0.0872	0.0750
45	PUNJAB NATIONAL BANK	B09	0.8386	0.8439	0.1561	0.2624	0.1810	-0.2160	0.0743

46	STATE BANK OF INDIA	B10	0.7834	0.8318	0.1682	0.2824	0.2245	-0.0247	0.0767
47	UCO BANK	B11	0.8417	0.9260	0.0740	0.2064	0.0881	-0.2930	0.0701
48	UNION BANK OF INDIA	B12	0.8382	0.8678	0.1322	0.2466	0.2024	-0.1390	0.0774
49	BANK OF BARODA	B01	0.8659	0.8620	0.1380	0.2760	0.2242	0.0283	0.0705
50	BANK OF INDIA	B02	0.8622	0.8530	0.1470	0.2567	0.2113	-0.0338	0.0735
51	BANK OF MAHARASHTRA	B03	0.8728	0.8889	0.1111	0.2339	0.1346	-0.1011	0.0852
52	CANARA BANK	B04	0.8488	0.8456	0.1544	0.2017	0.1821	0.0229	0.0839
53	CENTRAL BANK OF INDIA	B05	0.8898	0.8956	0.1044	0.2387	0.1122	-0.0886	0.0826
54	INDIAN BANK	B06	0.8363	0.8788	0.1212	0.2820	0.2192	0.0770	0.0836
55	INDIAN OVERSEAS BANK	B07	0.8551	0.8539	0.1461	0.2247	0.1581	-0.1480	0.0934
56	PUNJAB AND SIND BANK	B08	0.8851	0.9339	0.0661	0.2468	0.1419	0.0230	0.0905
57	PUNJAB NATIONAL BANK	B09	0.8631	0.8408	0.1592	0.2667	0.2590	0.0236	0.0781
58	STATE BANK OF INDIA	B10	0.7778	0.8397	0.1603	0.2816	0.2234	-0.0052	0.0803
59	UCO BANK	B11	0.8701	0.8853	0.1147	0.2070	0.1587	-0.1004	0.0797
60	UNION BANK OF INDIA	B12	0.8303	0.8680	0.1320	0.2366	0.1975	0.0148	0.0831
61	BANK OF BARODA	B01	0.8550	0.8981	0.1019	0.2597	0.1797	-0.1100	0.0731
62	BANK OF INDIA	B02	0.8411	0.9196	0.0804	0.2580	0.1328	-0.1340	0.0745
63	BANK OF MAHARASHTRA	B03	0.8635	0.9276	0.0724	0.2756	0.1667	0.0072	0.0874
64	CANARA BANK	B04	0.8677	0.9003	0.0997	0.1997	0.1462	-0.0575	0.0884
65	CENTRAL BANK OF INDIA	B05	0.8714	0.9303	0.0697	0.2539	0.0842	-0.0510	0.0911
66	INDIAN BANK	B06	0.8752	0.9012	0.0988	0.2467	0.1682	0.0395	0.0885
67	INDIAN OVERSEAS BANK	B07	0.8181	0.9029	0.0971	0.2067	0.1108	-0.1112	0.0949
68	PUNJAB AND SIND BANK	B08	0.8895	0.9481	0.0519	0.2359	0.1377	0.0364	0.0899
69	PUNJAB NATIONAL BANK	B09	0.8287	0.8877	0.1123	0.2866	0.2123	-0.0744	0.0800
70	STATE BANK OF INDIA	B10	0.7565	0.8654	0.1346	0.2914	0.2163	0.0467	0.0839
71	UCO BANK	B11	0.8458	0.9208	0.0792	0.2405	0.1788	-0.1389	0.0823
72	UNION BANK OF INDIA	B12	0.8469	0.8986	0.1014	0.2320	0.1575	0.0377	0.0885
73	BANK OF BARODA	B01	0.8637	0.9071	0.0929	0.2784	0.2093	0.0717	0.0662
74	BANK OF INDIA	B02	0.8597	0.9119	0.0881	0.2387	0.1571	0.0359	0.0770
75	BANK OF MAHARASHTRA	B03	0.8363	0.9264	0.0736	0.2834	0.1723	0.0330	0.0936
76	CANARA BANK	B04	0.8647	0.9058	0.0942	0.2001	0.1439	0.0560	0.0881
77	CENTRAL BANK OF INDIA	B05	0.8193	0.9331	0.0669	0.2561	0.1258	0.0214	0.0907
78	INDIAN BANK	B06	0.8776	0.9208	0.0792	0.2591	0.1751	0.0584	0.0893
79	INDIAN OVERSEAS BANK	B07	0.8614	0.9180	0.0820	0.2065	0.1274	-0.0174	0.0913
80	PUNJAB AND SIND BANK	B08	0.8871	0.9525	0.0475	0.1862	0.0860	0.0135	0.0922
81	PUNJAB NATIONAL BANK	B09	0.8310	0.8872	0.1128	0.3171	0.2290	0.0586	0.0865
82	STATE BANK OF INDIA	B10	0.7825	0.8798	0.1202	0.3018	0.2127	0.0710	0.0881
83	UCO BANK	B11	0.8716	0.9062	0.0938	0.2604	0.2299	0.0533	0.0869
84	UNION BANK OF INDIA	B12	0.8303	0.9011	0.0989	0.2371	0.1635	0.0500	0.0933
85	BANK OF BARODA	B01	0.8626	0.8972	0.1028	0.2757	0.2141	0.1046	0.0658

86	BANK OF INDIA	B02	0.8321	0.8983	0.1017	0.2566	0.1996	0.0647	0.0736
87	BANK OF MAHARASHTRA	B03	0.8568	0.9304	0.0696	0.2731	0.1561	0.0300	0.0943
88	CANARA BANK	B04	0.8553	0.9096	0.0904	0.2057	0.1563	0.0561	0.0884
89	CENTRAL BANK OF INDIA	B05	0.8293	0.9270	0.0730	0.2465	0.1229	-0.0479	0.0910
90	INDIAN BANK	B06	0.8667	0.9175	0.0825	0.2623	0.1745	0.0697	0.0888
91	INDIAN OVERSEAS BANK	B07	0.8293	0.9127	0.0873	0.2244	0.1608	0.0242	0.0904
92	PUNJAB AND SIND BANK	B08	0.8965	0.9491	0.0509	0.1929	0.0953	0.0358	0.0889
93	PUNJAB NATIONAL BANK	B09	0.8201	0.9043	0.0957	0.3378	0.2382	0.0699	0.0868
94	STATE BANK OF INDIA	B10	0.7886	0.8902	0.1098	0.3045	0.1957	0.0661	0.0892
95	UCO BANK	B11	0.8344	0.9325	0.0675	0.3099	0.2527	0.0773	0.0818
96	UNION BANK OF INDIA	B12	0.8414	0.9123	0.0877	0.2449	0.1622	0.0527	0.0909
97	BANK OF BARODA	B01	0.8661	0.9065	0.0935	0.2914	0.2318	0.1154	0.0710
98	BANK OF INDIA	B02	0.8437	0.8944	0.1056	0.2530	0.2091	0.0771	0.0788
99	BANK OF MAHARASHTRA	B03	0.8066	0.9134	0.0866	0.2882	0.2041	0.0722	0.0900
100	CANARA BANK	B04	0.8630	0.9153	0.0847	0.2116	0.1582	0.0771	0.0903
101	CENTRAL BANK OF INDIA	B05	0.8430	0.9291	0.0709	0.2439	0.1348	0.0431	0.0877
102	INDIAN BANK	B06	0.8720	0.9155	0.0845	0.2983	0.2017	0.1042	0.0932
103	INDIAN OVERSEAS BANK	B07	0.8262	0.9129	0.0871	0.2319	0.1685	0.0250	0.0926
104	PUNJAB AND SIND BANK	B08	0.8778	0.9490	0.0510	0.2122	0.1214	0.0439	0.0961
105	PUNJAB NATIONAL BANK	B09	0.8175	0.9084	0.0916	0.3220	0.2366	0.1030	0.0963
106	STATE BANK OF INDIA	B10	0.7835	0.8924	0.1076	0.3119	0.2169	0.0969	0.0888
107	UCO BANK	B11	0.8730	0.9462	0.0538	0.2588	0.1896	0.0349	0.0891
108	UNION BANK OF INDIA	B12	0.8450	0.9078	0.0922	0.2725	0.2017	0.0780	0.0887
109	BANK OF BARODA	B01	0.8604	0.8966	0.1034	0.3117	0.2593	0.1513	0.0740
110	BANK OF INDIA	B02	0.8275	0.8956	0.1044	0.2614	0.2105	0.0842	0.0827
111	BANK OF MAHARASHTRA	B03	0.8397	0.9184	0.0816	0.3205	0.1929	0.0549	0.0862
112	CANARA BANK	B04	0.8741	0.9133	0.0867	0.2276	0.1759	0.0972	0.0903
113	CENTRAL BANK OF INDIA	B05	0.8537	0.9321	0.0679	0.2516	0.1370	0.0259	0.0894
114	INDIAN BANK	B06	0.8542	0.9085	0.0915	0.3281	0.2572	0.1298	0.0952
115	INDIAN OVERSEAS BANK	B07	0.8124	0.9141	0.0859	0.2563	0.1806	0.0537	0.0891
116	PUNJAB AND SIND BANK	B08	0.8658	0.9394	0.0606	0.2178	0.1103	0.0655	0.0945
117	PUNJAB NATIONAL BANK	B09	0.8284	0.8967	0.1033	0.3298	0.2609	0.1201	0.0888
118	STATE BANK OF INDIA	B10	0.7932	0.8896	0.1104	0.3389	0.2465	0.0950	0.0911
119	UCO BANK	B11	0.8532	0.9381	0.0619	0.2502	0.1802	0.0711	0.0864
120	UNION BANK OF INDIA	B12	0.8500	0.8957	0.1043	0.2894	0.2238	0.0761	0.0895

Details of per Branch Data

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S.No.	Name of Bank	Code	Interest Earnings per Branch	Non-Int. Earnings per Branch	Net Interest Income per Branch	Operating Profit per Branch	Net Profit (Net PAT) per Branch
S.No.	Name	Code	I_BR	NI_BR	NII_BR	OPP_BR	PAT_BR
1	BANK OF BARODA	B01	8.5823	1.5053	3.5073	2.5115	0.1009
2	BANK OF INDIA	B02	8.0795	1.4809	2.8398	2.1636	0.4299
3	BANK OF MAHARASHTRA	B03	6.1977	1.3709	2.5574	2.0667	0.2873
4	CANARA BANK	B04	6.6207	1.4616	2.3008	1.9133	0.2446
5	CENTRAL BANK OF INDIA	B05	4.9317	0.6872	1.7889	1.0046	-0.1926
6	INDIAN BANK	B06	6.5155	1.0129	2.6101	1.8986	0.5006
7	INDIAN OVERSEAS BANK	B07	5.3001	1.7367	1.8427	1.8419	0.2598
8	PUNJAB AND SIND BANK	B08	4.5551	0.5897	1.4774	0.5037	-1.7850
9	PUNJAB NATIONAL BANK	B09	7.4990	1.1898	2.8303	2.1341	0.1877
10	STATE BANK OF INDIA	B10	11.9260	1.9564	4.9795	3.2184	0.9180
11	UCO BANK	B11	4.7271	1.2174	1.7931	1.7738	0.0547
12	UNION BANK OF INDIA	B12	7.3690	1.2148	2.6456	2.0638	0.3114
13	BANK OF BARODA	B01	8.0135	1.0881	2.8951	1.9929	0.0576
14	BANK OF INDIA	B02	8.4302	1.3362	3.0368	2.2927	-0.5886
15	BANK OF MAHARASHTRA	B03	6.2714	0.8997	2.3343	1.5532	0.2120
16	CANARA BANK	B04	7.6942	1.2285	2.0635	1.4717	-0.3515
17	CENTRAL BANK OF INDIA	B05	5.0650	0.7818	1.6399	0.9338	-0.2410
18	INDIAN BANK	B06	7.5797	1.1730	2.6935	2.3010	0.2668
19	INDIAN OVERSEAS BANK	B07	5.3491	1.0325	1.6296	1.0859	-2.6206
20	PUNJAB AND SIND BANK	B08	5.1963	0.5881	1.3483	0.7188	-0.6493
21	PUNJAB NATIONAL BANK	B09	8.2000	1.4135	2.6578	2.2464	0.0512
22	STATE BANK OF INDIA	B10	11.6116	2.0406	4.4260	3.0744	0.6538
23	UCO BANK	B11	4.9540	0.9398	1.6669	1.5828	-0.7977
24	UNION BANK OF INDIA	B12	8.6968	1.2289	2.6715	2.1446	-0.6769
25	BANK OF BARODA	B01	8.9644	1.1337	3.3286	2.4292	0.0781
26	BANK OF INDIA	B02	8.1065	0.9264	2.7158	1.6091	-1.1030
27	BANK OF MAHARASHTRA	B03	5.9223	0.8447	2.0379	1.1996	-2.6113
28	CANARA BANK	B04	7.3822	1.0369	2.2833	1.6702	0.0547
29	CENTRAL BANK OF INDIA	B05	4.8570	0.5177	1.4529	0.6708	-1.2104
30	INDIAN BANK	B06	6.8055	0.6679	2.4896	1.7313	0.1142
31	INDIAN OVERSEAS BANK	B07	5.4050	1.2895	1.6184	1.5432	-1.1459
32	PUNJAB AND SIND BANK	B08	5.6381	0.5456	1.5018	0.9202	-0.3580
33	PUNJAB NATIONAL BANK	B09	7.8133	1.1234	2.6125	1.9789	-1.5190
34	STATE BANK OF INDIA	B10	11.0110	1.6673	4.0055	2.5133	0.0391

35	UCO BANK	B11	4.6832	0.4946	1.4089	0.9020	-1.4121
36	UNION BANK OF INDIA	B12	7.9465	1.0436	2.3828	1.7544	-0.6875
37	BANK OF BARODA	B01	7.9840	1.2177	2.8392	2.1960	-0.4448
38	BANK OF INDIA	B02	7.5166	1.1320	2.0743	1.4095	-1.1932
39	BANK OF MAHARASHTRA	B03	6.0111	0.8158	1.8363	1.1871	-0.6206
40	CANARA BANK	B04	6.5283	1.0987	1.9249	1.5110	-0.6682
41	CENTRAL BANK OF INDIA	B05	5.1259	0.5593	1.3899	0.5829	-1.0887
42	INDIAN BANK	B06	6.2436	0.8777	2.2851	1.8245	0.4593
43	INDIAN OVERSEAS BANK	B07	5.4059	1.1305	1.6498	1.0951	-1.9009
44	PUNJAB AND SIND BANK	B08	5.2502	0.3839	1.4764	0.7561	-0.4913
45	PUNJAB NATIONAL BANK	B09	7.3131	1.3532	2.2737	1.5685	-1.8715
46	STATE BANK OF INDIA	B10	9.8363	1.9896	3.3391	2.6547	-0.2921
47	UCO BANK	B11	4.5787	0.3661	1.0205	0.4357	-1.4488
48	UNION BANK OF INDIA	B12	7.6247	1.1618	2.1664	1.7787	-1.2217
49	BANK OF BARODA	B01	7.7831	1.2464	2.4923	2.0242	0.2551
50	BANK OF INDIA	B02	7.7589	1.3373	2.3353	1.9219	-0.3077
51	BANK OF MAHARASHTRA	B03	6.3584	0.7950	1.6735	0.9631	-0.7235
52	CANARA BANK	B04	6.6949	1.2220	1.5969	1.4419	0.1815
53	CENTRAL BANK OF INDIA	B05	5.2249	0.6092	1.3928	0.6544	-0.5168
54	INDIAN BANK	B06	6.1479	0.8476	1.9724	1.5334	0.5388
55	INDIAN OVERSEAS BANK	B07	5.8686	1.0038	1.5445	1.0864	-1.0169
56	PUNJAB AND SIND BANK	B08	5.4486	0.3854	1.4396	0.8279	0.1341
57	PUNJAB NATIONAL BANK	B09	7.2688	1.3763	2.3052	2.2394	0.2037
58	STATE BANK OF INDIA	B10	9.2845	1.7721	3.1137	2.4696	-0.0573
59	UCO BANK	B11	5.3405	0.6917	1.2485	0.9572	-0.6054
60	UNION BANK OF INDIA	B12	7.6451	1.1621	2.0841	1.7393	0.1300
61	BANK OF BARODA	B01	8.2667	0.9379	2.3902	1.6540	-1.0123
62	BANK OF INDIA	B02	8.4216	0.7360	2.3624	1.2161	-1.2269
63	BANK OF MAHARASHTRA	B03	6.8881	0.5379	2.0468	1.2376	0.0531
64	CANARA BANK	B04	7.4274	0.8225	1.6473	1.2058	-0.4746
65	CENTRAL BANK OF INDIA	B05	5.4952	0.4115	1.4998	0.4972	-0.3010
66	INDIAN BANK	B06	6.4742	0.7100	1.7721	1.2085	0.2835
67	INDIAN OVERSEAS BANK	B07	6.9434	0.7465	1.5892	0.8519	-0.8554
68	PUNJAB AND SIND BANK	B08	5.9043	0.3231	1.4691	0.8575	0.2269
69	PUNJAB NATIONAL BANK	B09	7.4543	0.9431	2.4068	1.7824	-0.6247
70	STATE BANK OF INDIA	B10	9.0805	1.4121	3.0577	2.2697	0.4895
71	UCO BANK	B11	6.1136	0.5258	1.5968	1.1869	-0.9220
72	UNION BANK OF INDIA	B12	7.6737	0.8655	1.9812	1.3448	0.3221
73	BANK OF BARODA	B01	8.2781	0.8482	2.5409	1.9104	0.6548
74	BANK OF INDIA	B02	8.9896	0.8682	2.3534	1.5487	0.3534
75	BANK OF MAHARASHTRA	B03	6.7369	0.5351	2.0612	1.2527	0.2397

76	CANARA BANK	B04	7.5968	0.7901	1.6780	1.2069	0.4693
77	CENTRAL BANK OF INDIA	B05	5.6465	0.4050	1.5495	0.7610	0.1297
78	INDIAN BANK	B06	6.7202	0.5779	1.8912	1.2775	0.4261
79	INDIAN OVERSEAS BANK	B07	7.1013	0.6344	1.5971	0.9856	-0.1348
80	PUNJAB AND SIND BANK	B08	5.8987	0.2945	1.1533	0.5326	0.0833
81	PUNJAB NATIONAL BANK	B09	7.4992	0.9538	2.6806	1.9357	0.4957
82	STATE BANK OF INDIA	B10	8.7978	1.2023	3.0177	2.1270	0.7097
83	UCO BANK	B11	6.5029	0.6730	1.8685	1.6494	0.3822
84	UNION BANK OF INDIA	B12	7.8695	0.8641	2.0711	1.4284	0.4370
85	BANK OF BARODA	B01	8.0305	0.9203	2.4676	1.9161	0.9365
86	BANK OF INDIA	B02	8.2503	0.9340	2.3570	1.8331	0.5940
87	BANK OF MAHARASHTRA	B03	6.4491	0.4823	1.8926	1.0822	0.2082
88	CANARA BANK	B04	8.2015	0.8156	1.8549	1.4094	0.5056
89	CENTRAL BANK OF INDIA	B05	5.3499	0.4211	1.4223	0.7092	-0.2766
90	INDIAN BANK	B06	6.9283	0.6232	1.9811	1.3179	0.5266
91	INDIAN OVERSEAS BANK	B07	6.9667	0.6663	1.7128	1.2277	0.1848
92	PUNJAB AND SIND BANK	B08	5.9945	0.3213	1.2185	0.6019	0.2260
93	PUNJAB NATIONAL BANK	B09	7.4331	0.7871	2.7766	1.9578	0.5748
94	STATE BANK OF INDIA	B10	8.3472	1.0292	2.8548	1.8345	0.6195
95	UCO BANK	B11	6.3942	0.4632	2.1252	1.7329	0.5298
96	UNION BANK OF INDIA	B12	7.5917	0.7298	2.0381	1.3497	0.4387
97	BANK OF BARODA	B01	8.2816	0.8543	2.6624	2.1174	1.0543
98	BANK OF INDIA	B02	7.5328	0.8891	2.1303	1.7607	0.6490
99	BANK OF MAHARASHTRA	B03	5.6817	0.5390	1.7928	1.2699	0.4489
100	CANARA BANK	B04	9.0034	0.8330	2.0816	1.5561	0.7588
101	CENTRAL BANK OF INDIA	B05	5.0910	0.3883	1.3362	0.7388	0.2364
102	INDIAN BANK	B06	6.8258	0.6302	2.2245	1.5036	0.7766
103	INDIAN OVERSEAS BANK	B07	7.1521	0.6824	1.8167	1.3203	0.1962
104	PUNJAB AND SIND BANK	B08	6.4957	0.3489	1.4522	0.8308	0.3002
105	PUNJAB NATIONAL BANK	B09	7.6364	0.7700	2.7072	1.9886	0.8656
106	STATE BANK OF INDIA	B10	8.0207	0.9671	2.8030	1.9496	0.8710
107	UCO BANK	B11	6.5182	0.3705	1.7827	1.3063	0.2405
108	UNION BANK OF INDIA	B12	7.1662	0.7279	2.1514	1.5923	0.6155
109	BANK OF BARODA	B01	7.6498	0.8823	2.6597	2.2121	1.2908
110	BANK OF INDIA	B02	7.2286	0.8429	2.1100	1.6990	0.6796
111	BANK OF MAHARASHTRA	B03	4.6452	0.4125	1.6208	0.9757	0.2774
112	CANARA BANK	B04	8.4592	0.8027	2.1084	1.6296	0.9001
113	CENTRAL BANK OF INDIA	B05	4.7754	0.3480	1.2889	0.7020	0.1329
114	INDIAN BANK	B06	6.4038	0.6451	2.3131	1.8132	0.9146
115	INDIAN OVERSEAS BANK	B07	6.8462	0.6433	1.9197	1.3525	0.4019
116	PUNJAB AND SIND BANK	B08	6.2982	0.4061	1.4602	0.7393	0.4390

117	PUNJAB NATIONAL BANK	B09	6.8784	0.7925	2.5296	2.0016	0.9210
118	STATE BANK OF INDIA	B10	7.4559	0.9257	2.8407	2.0665	0.7964
119	UCO BANK	B11	6.2345	0.4114	1.6626	1.1979	0.4724
120	UNION BANK OF INDIA	B12	6.5817	0.7663	2.1262	1.6444	0.5594

S.No.	Name of Bank	Code	Total Earnings per Branch	Fixed Assets per Branch	Total Assets per Branch	Deposits per Branch	Employees per Branch
S.No.	Name	Code	TE_BR	FA_BR	TA_BR	D_BR	EMP_BR
1	BANK OF BARODA	B01	10.0876	0.9759	140.6580	117.7255	10.0676
2	BANK OF INDIA	B02	9.5604	1.7740	144.4490	124.7987	10.2406
3	BANK OF MAHARASHTRA	B03	7.5686	0.8742	102.6971	90.8646	6.4684
4	CANARA BANK	B04	8.0823	1.0716	110.3151	96.6604	8.4576
5	CENTRAL BANK OF INDIA	B05	5.6189	1.1136	80.1074	71.5932	7.0156
6	INDIAN BANK	B06	7.5283	1.2290	104.2994	89.6486	6.9360
7	INDIAN OVERSEAS BANK	B07	7.0367	0.9118	85.6015	75.0666	7.3636
8	PUNJAB AND SIND BANK	B08	5.1448	1.0352	72.1632	62.7748	5.7688
9	PUNJAB NATIONAL BANK	B09	8.6889	1.0235	117.0721	102.7426	8.9377
10	STATE BANK OF INDIA	B10	13.8824	1.7280	203.9504	165.5772	11.0490
11	UCO BANK	B11	5.9445	1.0531	82.8979	67.3820	7.2199
12	UNION BANK OF INDIA	B12	8.5838	0.7870	114.8420	22.0659	8.3800
13	BANK OF BARODA	B01	9.1016	0.9375	122.1172	99.7663	8.9319
14	BANK OF INDIA	B02	9.7664	1.7878	130.7714	110.5703	9.9059
15	BANK OF MAHARASHTRA	B03	7.1711	0.9145	92.1261	81.8693	6.8369
16	CANARA BANK	B04	8.9227	1.3013	113.8168	98.3257	9.2189
17	CENTRAL BANK OF INDIA	B05	5.8468	0.9321	76.5798	67.4469	7.1971
18	INDIAN BANK	B06	8.7526	1.3795	109.5850	92.1480	6.6353
19	INDIAN OVERSEAS BANK	B07	6.3816	0.9611	80.1250	68.5163	7.6460
20	PUNJAB AND SIND BANK	B08	5.7844	0.8131	65.8609	58.7599	5.8263
21	PUNJAB NATIONAL BANK	B09	9.6135	1.1033	126.6066	107.2773	9.6217
22	STATE BANK OF INDIA	B10	13.6521	1.7345	178.3040	146.2759	11.2562
23	UCO BANK	B11	5.8938	0.9297	77.2203	63.2417	7.3617
24	UNION BANK OF INDIA	B12	9.9257	1.1125	128.6343	105.2718	8.7281
25	BANK OF BARODA	B01	10.0982	1.2591	140.6678	115.0378	9.9840
26	BANK OF INDIA	B02	9.0329	1.7737	124.3235	103.5718	9.7051

27	BANK OF MAHARASHTRA	B03	6.7670	0.9692	89.8120	76.7741		7.0486
28	CANARA BANK	B04	8.4191	1.3263	109.5674	94.4698		9.2017
29	CENTRAL BANK OF INDIA	B05	5.3747	0.9247	70.9542	64.3329		7.6539
30	INDIAN BANK	B06	7.4735	1.4053	99.3492	85.8730		6.9269
31	INDIAN OVERSEAS BANK	B07	6.6945	1.0230	76.6427	68.2201		8.0791
32	PUNJAB AND SIND BANK	B08	6.1838	0.8105	71.7932	64.9260		5.9111
33	PUNJAB NATIONAL BANK	B09	8.9368	0.9479	118.0066	102.9435		9.9156
34	STATE BANK OF INDIA	B10	12.6782	1.7771	166.8819	131.9937		11.6631
35	UCO BANK	B11	5.1778	0.9223	75.3216	64.6754		7.5598
36	UNION BANK OF INDIA	B12	8.9901	0.8776	115.2412	97.0178		8.6919
37	BANK OF BARODA	B01	9.2017	0.9818	131.6992	108.1608		10.0448
38	BANK OF INDIA	B02	8.6486	1.6318	120.3504	102.8340		9.6111
39	BANK OF MAHARASHTRA	B03	6.8269	0.8216	84.6851	75.2877		7.0054
40	CANARA BANK	B04	7.6270	1.3164	97.6240	83.0467		9.3137
41	CENTRAL BANK OF INDIA	B05	5.6852	0.9263	69.5725	62.8788		7.8573
42	INDIAN BANK	B06	7.1213	1.2471	92.1984	75.9921		7.1996
43	INDIAN OVERSEAS BANK	B07	6.5364	0.8731	74.8244	65.4290		8.4750
44	PUNJAB AND SIND BANK	B08	5.6341	0.7151	75.1382	67.1903		6.1559
45	PUNJAB NATIONAL BANK	B09	8.6663	0.9674	116.6890	97.8556		10.5683
46	STATE BANK OF INDIA	B10	11.8258	1.7840	154.1130	120.7273		11.7786
47	UCO BANK	B11	4.9448	0.9390	70.5605	59.3891		7.8194
48	UNION BANK OF INDIA	B12	8.7865	0.8925	113.4762	95.1110		8.7518
49	BANK OF BARODA	B01	9.0295	1.0620	128.1585	110.9692		9.5229
50	BANK OF INDIA	B02	9.0962	1.6710	123.6788	106.6414		9.5041
51	BANK OF MAHARASHTRA	B03	7.1534	0.8361	83.9873	73.3014		6.8392
52	CANARA BANK	B04	7.9169	1.1595	94.3901	80.1157		9.0125
53	CENTRAL BANK OF INDIA	B05	5.8341	0.9090	70.6360	62.8541		7.8669
54	INDIAN BANK	B06	6.9954	1.3195	83.6463	69.9537		7.9958
55	INDIAN OVERSEAS BANK	B07	6.8724	0.9090	73.5618	62.8996		8.9188
56	PUNJAB AND SIND BANK	B08	5.8340	0.7303	64.4290	57.0268		6.2667
57	PUNJAB NATIONAL BANK	B09	8.6450	0.9645	110.7519	95.5879		10.6067
58	STATE BANK OF INDIA	B10	11.0566	2.0680	137.7660	107.1477		11.6041
59	UCO BANK	B11	6.0322	0.9321	75.6754	65.8438		8.0536
60	UNION BANK OF INDIA	B12	8.8073	0.9116	105.9701	87.9913		8.6323
61	BANK OF BARODA	B01	9.2045	1.1733	125.9618	107.6994		9.7255
62	BANK OF INDIA	B02	9.1576	1.7087	122.8922	103.3658		9.9653
63	BANK OF MAHARASHTRA	B03	7.4260	0.8942	84.9379	73.3456		7.2639
64	CANARA BANK	B04	8.2499	1.2145	93.2952	80.9502		9.1122
65	CENTRAL BANK OF INDIA	B05	5.9067	0.9253	64.8410	56.5027		7.9994
66	INDIAN BANK	B06	7.1842	1.3994	81.1919	71.0585		8.0008
67	INDIAN OVERSEAS BANK	B07	7.6899	0.9656	81.0265	66.2871		9.4538

68	PUNJAB AND SIND BANK	B08	6.2274	0.7653	69.2650	61.6138	6.3491
69	PUNJAB NATIONAL BANK	B09	8.3974	0.8209	104.9026	86.9304	10.3727
70	STATE BANK OF INDIA	B10	10.4926	0.6032	125.1012	94.6415	12.0032
71	UCO BANK	B11	6.6394	0.9501	80.6596	68.2208	8.1436
72	UNION BANK OF INDIA	B12	8.5392	0.9390	96.4480	81.6778	8.4540
73	BANK OF BARODA	B01	9.1263	0.5539	137.7627	118.9903	9.5141
74	BANK OF INDIA	B02	9.8578	1.2173	127.9623	110.0117	9.3694
75	BANK OF MAHARASHTRA	B03	7.2720	0.7618	77.6696	64.9569	7.5473
76	CANARA BANK	B04	8.3869	1.2067	95.1555	82.2782	9.3738
77	CENTRAL BANK OF INDIA	B05	6.0515	0.6058	66.6967	54.6445	8.3470
78	INDIAN BANK	B06	7.2981	1.2585	81.7448	71.7360	8.5723
79	INDIAN OVERSEAS BANK	B07	7.7357	0.7437	84.7336	72.9898	9.5277
80	PUNJAB AND SIND BANK	B08	6.1932	0.6833	67.1383	59.5568	6.3049
81	PUNJAB NATIONAL BANK	B09	8.4531	0.5750	97.6900	81.1818	11.0573
82	STATE BANK OF INDIA	B10	10.0001	0.5325	113.4810	88.8009	12.3169
83	UCO BANK	B11	7.1759	0.3742	82.6056	71.9976	7.9012
84	UNION BANK OF INDIA	B12	8.7336	0.6578	93.6021	77.7213	8.7108
85	BANK OF BARODA	B01	8.9508	0.5639	136.0084	117.3220	10.2324
86	BANK OF INDIA	B02	9.1843	1.2592	124.7422	103.8028	9.3906
87	BANK OF MAHARASHTRA	B03	6.9314	0.7799	73.5275	63.0006	7.7648
88	CANARA BANK	B04	9.0171	1.3773	102.0161	87.2507	10.1190
89	CENTRAL BANK OF INDIA	B05	5.7709	0.6142	63.4026	52.5775	8.9052
90	INDIAN BANK	B06	7.5515	1.3322	85.0642	73.7278	8.7919
91	INDIAN OVERSEAS BANK	B07	7.6330	0.7999	84.4283	70.0172	9.1898
92	PUNJAB AND SIND BANK	B08	6.3158	0.7539	71.0595	63.7069	6.6692
93	PUNJAB NATIONAL BANK	B09	8.2201	0.5881	94.6552	77.6263	10.4769
94	STATE BANK OF INDIA	B10	9.3763	0.4712	105.0805	82.8663	13.2541
95	UCO BANK	B11	6.8574	0.3724	83.8740	69.9872	11.8576
96	UNION BANK OF INDIA	B12	8.3215	0.6747	91.5108	76.9984	4.2677
97	BANK OF BARODA	B01	9.1358	0.5772	128.7378	111.5020	11.6746
98	BANK OF INDIA	B02	8.4219	0.6776	106.8467	90.1415	10.1865
99	BANK OF MAHARASHTRA	B03	6.2207	0.8448	69.1210	55.7547	8.5083
100	CANARA BANK	B04	9.8364	0.7563	108.9412	94.0174	12.8914
101	CENTRAL BANK OF INDIA	B05	5.4793	0.6252	62.4428	52.6405	9.4693
102	INDIAN BANK	B06	7.4561	0.8303	79.9718	69.7349	9.5044
103	INDIAN OVERSEAS BANK	B07	7.8345	0.6389	84.6268	69.9188	10.3501
104	PUNJAB AND SIND BANK	B08	6.8445	0.7470	71.2194	62.5146	7.8496
105	PUNJAB NATIONAL BANK	B09	8.4064	0.6122	87.3196	71.3874	11.1072
106	STATE BANK OF INDIA	B10	8.9877	0.4487	101.1690	79.2656	14.3226
107	UCO BANK	B11	6.8887	0.3461	77.2963	67.4829	8.9786
108	UNION BANK OF INDIA	B12	7.8941	0.7071	89.0285	75.2315	9.6423

S.No	Name of Bank	Code	Year					
109	BANK OF BARODA	B01		8.5321	0.6036	115.3188	99.2192	11.1132
110	BANK OF INDIA	B02		8.0715	0.7034	97.5978	80.7655	10.6970
111	BANK OF MAHARASHTRA	B03		5.0577	0.3868	58.6847	49.2779	8.7701
112	CANARA BANK	B04		9.2619	0.7835	102.5940	89.6775	11.7063
113	CENTRAL BANK OF INDIA	B05		5.1234	0.6169	57.3067	48.9210	9.2551
114	INDIAN BANK	B06		7.0489	0.8538	74.0415	63.2481	9.8393
115	INDIAN OVERSEAS BANK	B07		7.4895	0.6675	84.0555	68.2871	10.8228
116	PUNJAB AND SIND BANK	B08		6.7042	0.7864	70.9195	61.4046	8.3006
117	PUNJAB NATIONAL BANK	B09		7.6709	0.5976	86.4025	71.5800	11.1065
118	STATE BANK OF INDIA	B10		8.3815	0.3852	91.9954	72.9731	15.3429
119	UCO BANK	B11		6.6459	0.3429	76.9060	65.6172	10.2723
120	UNION BANK OF INDIA	B12		7.3479	0.7311	82.0693	69.7555	9.9524

Independent Variables per Branch

S.No.	Name of Bank	Code	Year	Number of ATMs- On-site per Branch	Number of ATMs- Off-site per Branch	Total Number of ATMs per Branch	Number of POS terminals- On-line per Branch	No .of outstanding cards - Debit Cards per Branch
S.No.	Name	Code	Year	ATM_ON_BR	ATM_OFF_BR	N_ATM_BR	N_POS_BR	N_DC_BR
1	BANK OF BARODA	B01	2021	1.05	0.36	1.42	6.02	7961.94
2	BANK OF INDIA	B02	2021	0.48	0.63	1.10	10.61	8300.06
3	BANK OF MAHARASHTRA	B03	2021	0.79	0.23	1.02	1.53	5033.40
4	CANARA BANK	B04	2021	0.87	0.41	1.29	3.57	3909.22
5	CENTRAL BANK OF INDIA	B05	2021	0.60	0.19	0.79	0.87	5760.28
6	INDIAN BANK	B06	2021	0.71	0.11	0.82	2.01	4209.79
7	INDIAN OVERSEAS BANK	B07	2021	0.85	0.13	0.98	3.18	6002.18
8	PUNJAB AND SIND BANK	B08	2021	0.70	0.02	0.72	0.71	2088.85
9	PUNJAB NATIONAL BANK	B09	2021	0.80	0.48	1.28	4.48	4123.61
10	STATE BANK OF INDIA	B10	2021	1.16	1.66	2.82	33.61	13192.68
11	UCO BANK	B11	2021	0.70	0.07	0.77	3.08	3314.21
12	UNION BANK OF INDIA	B12	2021	0.97	0.41	1.39	33.59	4731.24
13	BANK OF BARODA	B01	2020	0.99	0.40	1.39	6.32	5699.72
14	BANK OF INDIA	B02	2020	0.48	0.66	1.14	9.63	7974.28
15	BANK OF MAHARASHTRA	B03	2020	0.75	0.30	1.05	1.37	4170.03
16	CANARA BANK	B04	2020	0.74	0.63	1.38	3.91	3831.75
17	CENTRAL BANK OF INDIA	B05	2020	0.59	0.19	0.78	0.78	5180.56
18	INDIAN BANK	B06	2020	1.19	0.25	1.44	3.74	5215.23
19	INDIAN OVERSEAS BANK	B07	2020	0.82	0.11	0.93	6.07	5508.55

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20	PUNJAB AND SIND BANK	B08	2020	0.67	0.02	0.69	0.59	1805.54
21	PUNJAB NATIONAL BANK	B09	2020	0.83	0.57	1.40	12.24	3719.49
22	STATE BANK OF INDIA	B10	2020	1.16	1.49	2.64	30.36	12550.59
23	UCO BANK	B11	2020	0.67	0.95	1.63	2.70	2756.96
24	UNION BANK OF INDIA	B12	2020	0.93	0.23	1.16	12.90	4760.26
25	BANK OF BARODA	B01	2019	1.14	0.58	1.72	11.39	7554.18
26	BANK OF INDIA	B02	2019	0.52	0.70	1.22	13.00	11874.54
27	BANK OF MAHARASHTRA	B03	2019	0.71	0.30	1.01	1.69	2890.17
28	CANARA BANK	B04	2019	0.75	0.65	1.40	3.37	4438.90
29	CENTRAL BANK OF INDIA	B05	2019	0.63	0.22	0.85	0.73	4197.12
30	INDIAN BANK	B06	2019	1.13	0.25	1.38	3.90	5051.58
31	INDIAN OVERSEAS BANK	B07	2019	0.91	0.15	1.06	6.05	5048.93
32	PUNJAB AND SIND BANK	B08	2019	0.76	0.03	0.79	0.70	1392.30
33	PUNJAB NATIONAL BANK	B09	2019	0.81	0.60	1.41	9.88	11209.59
34	STATE BANK OF INDIA	B10	2019	1.16	1.49	2.65	26.09	14338.45
35	UCO BANK	B11	2019	0.66	0.11	0.77	1.50	2198.96
36	UNION BANK OF INDIA	B12	2019	0.90	0.65	1.55	11.87	3872.90
37	BANK OF BARODA	B01	2018	1.15	0.63	1.78	14.13	9502.05
38	BANK OF INDIA	B02	2018	0.66	0.81	1.47	16.98	10484.86
39	BANK OF MAHARASHTRA	B03	2018	0.71	0.30	1.01	1.75	3788.75
40	CANARA BANK	B04	2018	0.81	0.68	1.49	2.91	6804.37
41	CENTRAL BANK OF INDIA	B05	2018	0.73	0.31	1.04	0.79	6194.71
42	INDIAN BANK	B06	2018	1.00	0.24	1.24	4.26	6659.03
43	INDIAN OVERSEAS BANK	B07	2018	0.83	0.24	1.07	3.82	5433.63
44	PUNJAB AND SIND BANK	B08	2018	0.72	0.10	0.82	0.57	1845.46
45	PUNJAB NATIONAL BANK	B09	2018	0.83	0.64	1.47	7.66	9441.29
46	STATE BANK OF INDIA	B10	2018	1.19	1.47	2.66	27.20	12422.17
47	UCO BANK	B11	2018	0.74	0.17	0.90	1.90	3403.15
48	UNION BANK OF INDIA	B12	2018	1.06	0.72	1.78	6.13	5091.43
49	BANK OF BARODA	B01	2017	1.16	0.78	1.94	15.81	7972.83
50	BANK OF INDIA	B02	2017	0.69	0.84	1.52	3.42	9310.64
51	BANK OF MAHARASHTRA	B03	2017	0.68	0.31	0.99	0.49	3402.21
52	CANARA BANK	B04	2017	0.87	0.83	1.70	1.57	5360.23
53	CENTRAL BANK OF INDIA	B05	2017	0.74	0.38	1.12	0.39	5155.60
54	INDIAN BANK	B06	2017	1.00	0.28	1.29	3.23	6740.48
55	INDIAN OVERSEAS BANK	B07	2017	0.81	0.29	1.09	3.75	4762.30
56	PUNJAB AND SIND BANK	B08	2017	0.70	0.14	0.84	0.00	1741.46
57	PUNJAB NATIONAL BANK	B09	2017	0.91	0.73	1.64	5.97	8496.14
58	STATE BANK OF INDIA	B10	2017	1.23	1.23	2.46	23.05	10851.00
59	UCO BANK	B11	2017	0.72	0.19	0.91	1.68	3378.07
60	UNION BANK OF INDIA	B12	2017	1.05	0.71	1.76	12.15	4575.40

61	BANK OF BARODA	B01	2016	1.15	0.75	1.90	6.61	6033.90
62	BANK OF INDIA	B02	2016	0.68	0.89	1.57	1.07	7107.17
63	BANK OF MAHARASHTRA	B03	2016	0.68	0.30	0.98	0.00	3017.91
64	CANARA BANK	B04	2016	0.89	0.67	1.56	0.80	5390.50
65	CENTRAL BANK OF INDIA	B05	2016	0.74	0.38	1.12	0.36	4150.68
66	INDIAN BANK	B06	2016	0.85	0.26	1.11	0.11	5882.63
67	INDIAN OVERSEAS BANK	B07	2016	0.80	0.32	1.12	0.13	3516.58
68	PUNJAB AND SIND BANK	B08	2016	0.73	0.18	0.91	0.00	1522.78
69	PUNJAB NATIONAL BANK	B09	2016	0.80	0.68	1.49	2.15	6917.95
70	STATE BANK OF INDIA	B10	2016	1.13	1.35	2.48	13.67	10212.81
71	UCO BANK	B11	2016	0.66	0.18	0.84	0.00	2809.04
72	UNION BANK OF INDIA	B12	2016	1.04	0.60	1.64	6.59	3981.72
73	BANK OF BARODA	B01	2015	0.93	0.62	1.55	2.63	4883.62
74	BANK OF INDIA	B02	2015	0.65	0.75	1.40	0.87	5662.75
75	BANK OF MAHARASHTRA	B03	2015	0.72	0.27	0.98	0.00	2860.43
76	CANARA BANK	B04	2015	0.89	0.59	1.48	0.58	4422.97
77	CENTRAL BANK OF INDIA	B05	2015	0.67	0.36	1.03	0.36	3281.06
78	INDIAN BANK	B06	2015	0.74	0.25	0.99	0.00	6771.30
79	INDIAN OVERSEAS BANK	B07	2015	0.75	0.31	1.06	0.17	2721.37
80	PUNJAB AND SIND BANK	B08	2015	0.70	0.17	0.87	0.00	1287.71
81	PUNJAB NATIONAL BANK	B09	2015	0.74	0.61	1.35	1.95	5658.38
82	STATE BANK OF INDIA	B10	2015	0.99	1.37	2.36	9.39	8965.03
83	UCO BANK	B11	2015	0.51	0.19	0.70	0.00	2109.73
84	UNION BANK OF INDIA	B12	2015	1.00	0.73	1.72	4.15	4770.39
85	BANK OF BARODA	B01	2014	0.86	0.43	1.29	2.27	2999.55
86	BANK OF INDIA	B02	2014	0.51	0.41	0.92	0.61	3683.12
87	BANK OF MAHARASHTRA	B03	2014	0.76	0.23	0.99	0.01	2438.63
88	CANARA BANK	B04	2014	0.84	0.47	1.31	0.22	3137.66
89	CENTRAL BANK OF INDIA	B05	2014	0.44	0.36	0.79	0.31	1579.68
90	INDIAN BANK	B06	2014	0.73	0.23	0.96	0.00	5175.40
91	INDIAN OVERSEAS BANK	B07	2014	0.49	0.28	0.78	0.16	1616.48
92	PUNJAB AND SIND BANK	B08	2014	0.64	0.12	0.76	0.00	363.79
93	PUNJAB NATIONAL BANK	B09	2014	0.60	0.59	1.19	1.89	4298.08
94	STATE BANK OF INDIA	B10	2014	1.04	0.93	1.97	6.16	5539.48
95	UCO BANK	B11	2014	0.51	0.22	0.73	0.00	1484.29
96	UNION BANK OF INDIA	B12	2014	0.88	0.78	1.66	1.68	3172.80
97	BANK OF BARODA	B01	2013	0.42	0.20	0.62	1.29	2411.43
98	BANK OF INDIA	B02	2013	0.26	0.24	0.50	0.45	3211.23
99	BANK OF MAHARASHTRA	B03	2013	0.26	0.15	0.41	0.05	2023.80
100	CANARA BANK	B04	2013	0.47	0.46	0.93	0.28	2523.84
101	CENTRAL BANK OF INDIA	B05	2013	0.32	0.27	0.59	0.00	976.64

			2013					
102	INDIAN BANK	B06		0.47	0.18	0.65	0.00	4396.99
103	INDIAN OVERSEAS BANK	B07	2013	0.40	0.25	0.65	0.15	1499.33
104	PUNJAB AND SIND BANK	B08	2013	0.13	0.03	0.16	0.00	166.55
105	PUNJAB NATIONAL BANK	B09	2013	0.56	0.59	1.15	1.62	3766.40
106	STATE BANK OF INDIA	B10	2013	0.92	0.68	1.60	3.21	6681.17
107	UCO BANK	B11	2013	0.33	0.18	0.51	0.00	1037.48
108	UNION BANK OF INDIA	B12	2013	0.71	0.61	1.31	0.85	2715.53
109	BANK OF BARODA	B01	2012	0.35	0.16	0.52	1.11	2054.20
110	BANK OF INDIA	B02	2012	0.22	0.21	0.43	0.49	2625.27
111	BANK OF MAHARASHTRA	B03	2012	0.23	0.09	0.32	0.05	1605.15
112	CANARA BANK	B04	2012	0.42	0.37	0.78	0.28	1972.14
113	CENTRAL BANK OF INDIA	B05	2012	0.23	0.19	0.42	0.00	1162.85
114	INDIAN BANK	B06	2012	0.48	0.19	0.67	0.00	3874.32
115	INDIAN OVERSEAS BANK	B07	2012	0.35	0.21	0.55	0.24	1326.39
116	PUNJAB AND SIND BANK	B08	2012	0.10	0.02	0.11	0.00	73.45
117	PUNJAB NATIONAL BANK	B09	2012	0.58	0.56	1.13	0.07	3188.55
118	STATE BANK OF INDIA	B10	2012	0.82	0.59	1.41	0.00	5817.12
119	UCO BANK	B11	2012	0.23	0.13	0.37	0.00	766.97
120	UNION BANK OF INDIA	B12	2012	0.67	0.51	1.19	0.84	2365.05

S.No.	Name of Bank	Code	Year	No .of outstanding cards - Credit Cards per Branch	No. of Transactions- Credit Card- Actuals at ATM per Branch	No. of Transactions- Debit Card- Actuals at ATM per Branch	No. of Transactions- Credit Card- Actuals at POS per Branch
S.No.	Name	Code	Year	N_CC_BR	ATM_T_CC_BR	ATM_T_DC_BR	POS_T_CC_BR
1	BANK OF BARODA	B01	2021	78.47	1.32	3683.38	182.29
2	BANK OF INDIA	B02	2021	33.64	2.17	4087.27	55.95
3	BANK OF MAHARASHTRA	B03	2021	23.11	0.13	3821.21	14.90
4	CANARA BANK	B04	2021	73.90	5.27	3268.77	94.53
5	CENTRAL BANK OF INDIA	B05	2021	0.00	0.00	2556.23	0.00
6	INDIAN BANK	B06	2021	22.22	0.81	3630.87	31.35
7	INDIAN OVERSEAS BANK	B07	2021	19.09	0.20	4412.71	22.72
8	PUNJAB AND SIND BANK	B08	2021	0.00	0.00	1062.38	0.00
9	PUNJAB NATIONAL BANK	B09	2021	28.40	0.39	3061.98	56.18
10	STATE BANK OF INDIA	B10	2021	531.71	4.49	8970.97	1679.05
11	UCO BANK	B11	2021	0.00	0.00	2232.70	0.00
12	UNION BANK OF INDIA	B12	2021	50.50	0.86	5181.45	74.78

			Year				
13	BANK OF BARODA	B01	2020	49.34	1.37	2741.90	103.31
14	BANK OF INDIA	B02	2020	32.69	2.80	3525.32	77.17
15	BANK OF MAHARASHTRA	B03	2020	0.00	0.00	3651.56	0.00
16	CANARA BANK	B04	2020	84.48	8.13	3613.69	116.59
17	CENTRAL BANK OF INDIA	B05	2020	18.80	0.25	2306.18	25.20
18	INDIAN BANK	B06	2020	36.57	1.33	7893.97	55.11
19	INDIAN OVERSEAS BANK	B07	2020	18.47	0.25	3675.11	25.29
20	PUNJAB AND SIND BANK	B08	2020	0.00	0.00	939.13	0.00
21	PUNJAB NATIONAL BANK	B09	2020	52.84	0.54	3318.73	82.22
22	STATE BANK OF INDIA	B10	2020	475.95	5.68	7711.25	1409.27
23	UCO BANK	B11	2020	0.00	0.00	1878.23	0.00
24	UNION BANK OF INDIA	B12	2020	10.33	0.67	5716.16	43.26
25	BANK OF BARODA	B01	2019	41.66	1.75	3850.91	117.44
26	BANK OF INDIA	B02	2019	36.64	4.45	8332.13	64.92
27	BANK OF MAHARASHTRA	B03	2019	0.00	0.00	4247.30	0.00
28	CANARA BANK	B04	2019	58.25	8.46	3701.67	119.02
29	CENTRAL BANK OF INDIA	B05	2019	19.92	0.48	2514.61	34.87
30	INDIAN BANK	B06	2019	30.98	1.03	13689.73	51.19
31	INDIAN OVERSEAS BANK	B07	2019	17.79	0.28	4402.74	29.21
32	PUNJAB AND SIND BANK	B08	2019	0.00	0.00	967.05	0.00
33	PUNJAB NATIONAL BANK	B09	2019	50.88	1.24	3827.60	98.60
34	STATE BANK OF INDIA	B10	2019	375.00	7.00	18913.25	1201.96
35	UCO BANK	B11	2019	0.00	0.00	1993.27	0.00
36	UNION BANK OF INDIA	B12	2019	10.84	0.95	6957.73	50.35
37	BANK OF BARODA	B01	2018	22.97	1.09	3519.09	58.48
38	BANK OF INDIA	B02	2018	41.23	5.60	6318.66	61.88
39	BANK OF MAHARASHTRA	B03	2018	0.00	0.00	3729.19	0.00
40	CANARA BANK	B04	2018	35.34	6.10	3485.01	78.97
41	CENTRAL BANK OF INDIA	B05	2018	21.86	0.56	2512.48	31.33
42	INDIAN BANK	B06	2018	31.53	1.09	10810.16	50.69
43	INDIAN OVERSEAS BANK	B07	2018	16.04	0.26	3362.50	29.39
44	PUNJAB AND SIND BANK	B08	2018	0.00	0.00	797.22	0.00
45	PUNJAB NATIONAL BANK	B09	2018	48.70	1.32	3538.20	91.90
46	STATE BANK OF INDIA	B10	2018	279.18	6.30	16316.63	902.40
47	UCO BANK	B11	2018	0.00	0.00	1770.78	0.00
48	UNION BANK OF INDIA	B12	2018	50.81	0.84	6006.80	43.44
49	BANK OF BARODA	B01	2017	24.27	1.29	2946.28	65.13
50	BANK OF INDIA	B02	2017	28.80	2.67	5634.73	40.71
51	BANK OF MAHARASHTRA	B03	2017	0.00	0.00	3005.90	0.00
52	CANARA BANK	B04	2017	34.82	5.58	2945.51	81.04
53	CENTRAL BANK OF INDIA	B05	2017	22.57	0.67	2169.28	34.80

54	INDIAN BANK	B06	2017	30.75	1.11	10131.81	54.92
55	INDIAN OVERSEAS BANK	B07	2017	12.89	0.13	2771.31	18.04
56	PUNJAB AND SIND BANK	B08	2017	0.00	0.00	566.69	0.00
57	PUNJAB NATIONAL BANK	B09	2017	39.05	1.06	3432.26	51.52
58	STATE BANK OF INDIA	B10	2017	189.41	3.85	15112.89	605.49
59	UCO BANK	B11	2017	0.00	0.00	1613.60	0.00
60	UNION BANK OF INDIA	B12	2017	42.82	0.60	4364.62	35.54
61	BANK OF BARODA	B01	2016	21.30	1.36	3292.98	41.49
62	BANK OF INDIA	B02	2016	29.23	3.87	5082.58	29.45
63	BANK OF MAHARASHTRA	B03	2016	26.43	0.21	3174.64	43.04
64	CANARA BANK	B04	2016	33.81	6.66	3263.38	49.57
65	CENTRAL BANK OF INDIA	B05	2016	24.29	1.10	2133.60	27.20
66	INDIAN BANK	B06	2016	29.14	1.44	8226.14	43.51
67	INDIAN OVERSEAS BANK	B07	2016	12.36	0.36	2186.77	8.18
68	PUNJAB AND SIND BANK	B08	2016	0.00	0.00	769.62	0.00
69	PUNJAB NATIONAL BANK	B09	2016	30.55	1.25	3772.59	34.19
70	STATE BANK OF INDIA	B10	2016	152.91	3.59	15532.75	427.99
71	UCO BANK	B11	2016	0.00	0.00	1714.65	0.00
72	UNION BANK OF INDIA	B12	2016	33.89	0.53	4045.96	24.31
73	BANK OF BARODA	B01	2015	15.90	0.58	2826.19	27.07
74	BANK OF INDIA	B02	2015	27.20	2.90	4369.10	25.50
75	BANK OF MAHARASHTRA	B03	2015	21.19	0.26	2767.71	33.49
76	CANARA BANK	B04	2015	21.86	3.95	2653.97	30.29
77	CENTRAL BANK OF INDIA	B05	2015	23.24	1.47	1771.36	22.02
78	INDIAN BANK	B06	2015	29.06	1.30	6356.73	40.61
79	INDIAN OVERSEAS BANK	B07	2015	14.55	1.09	2897.11	9.03
80	PUNJAB AND SIND BANK	B08	2015	0.00	0.00	452.22	0.00
81	PUNJAB NATIONAL BANK	B09	2015	23.26	0.51	3426.27	27.86
82	STATE BANK OF INDIA	B10	2015	137.49	3.27	13491.85	331.79
83	UCO BANK	B11	2015	0.00	0.00	1487.47	0.00
84	UNION BANK OF INDIA	B12	2015	20.64	0.27	3501.90	19.33
85	BANK OF BARODA	B01	2014	15.58	0.37	2466.07	23.27
86	BANK OF INDIA	B02	2014	28.38	2.30	3592.43	25.21
87	BANK OF MAHARASHTRA	B03	2014	14.60	0.23	2256.16	21.29
88	CANARA BANK	B04	2014	14.13	2.18	3184.81	12.52
89	CENTRAL BANK OF INDIA	B05	2014	11.45	0.28	1428.98	15.54
90	INDIAN BANK	B06	2014	28.69	1.44	5766.93	38.68
91	INDIAN OVERSEAS BANK	B07	2014	14.67	0.95	2651.25	8.49
92	PUNJAB AND SIND BANK	B08	2014	0.00	0.00	285.78	0.00
93	PUNJAB NATIONAL BANK	B09	2014	21.77	0.42	3446.41	28.53
94	STATE BANK OF INDIA	B10	2014	129.54	2.36	10561.12	259.49

S.No.	Name of Bank	Code	Year				
95	UCO BANK	B11	2014	0.00	0.00	1293.06	0.00
96	UNION BANK OF INDIA	B12	2014	15.57	0.30	3398.65	16.52
97	BANK OF BARODA	B01	2013	18.87	0.32	2230.13	21.83
98	BANK OF INDIA	B02	2013	28.58	2.37	2955.74	22.86
99	BANK OF MAHARASHTRA	B03	2013	9.99	0.13	1883.80	15.76
100	CANARA BANK	B04	2013	16.13	2.52	3179.59	14.92
101	CENTRAL BANK OF INDIA	B05	2013	12.72	0.12	502.24	11.68
102	INDIAN BANK	B06	2013	25.59	1.37	5650.06	31.99
103	INDIAN OVERSEAS BANK	B07	2013	15.28	1.01	1371.47	14.02
104	PUNJAB AND SIND BANK	B08	2013	0.00	0.00	133.59	0.00
105	PUNJAB NATIONAL BANK	B09	2013	21.11	0.41	3382.92	26.94
106	STATE BANK OF INDIA	B10	2013	126.01	1.71	11243.89	230.84
107	UCO BANK	B11	2013	0.00	0.00	1059.34	0.00
108	UNION BANK OF INDIA	B12	2013	13.29	0.23	2794.23	15.39
109	BANK OF BARODA	B01	2012	17.92	0.25	1994.16	20.42
110	BANK OF INDIA	B02	2012	30.49	2.36	2626.25	22.13
111	BANK OF MAHARASHTRA	B03	2012	16.96	0.08	2006.62	9.79
112	CANARA BANK	B04	2012	15.79	2.57	2000.84	15.31
113	CENTRAL BANK OF INDIA	B05	2012	13.89	0.03	2021.57	12.46
114	INDIAN BANK	B06	2012	22.75	1.26	5578.68	27.25
115	INDIAN OVERSEAS BANK	B07	2012	13.23	1.21	1408.15	13.27
116	PUNJAB AND SIND BANK	B08	2012	0.00	0.00	67.86	0.00
117	PUNJAB NATIONAL BANK	B09	2012	19.42	0.46	7681.04	21.59
118	STATE BANK OF INDIA	B10	2012	115.57	1.51	10507.11	182.69
119	UCO BANK	B11	2012	0.00	0.00	886.59	0.00
120	UNION BANK OF INDIA	B12	2012	13.21	0.26	2259.44	13.78

Details of Growth of Variable

S.No.	Name of Bank	Code	Year	Growth of Interest Earnings	Growth of Non-Int. Earnings	Growth of Net Interest Income	Growth of Operating Profit	Growth of Net Profit (Net PAT)
S.No.	Name	Code	Year	I_G	NI_G	NII_G	OPP_G	PAT_G
1	BANK OF BARODA	B01	2021	-0.0722	0.1984	0.0495	0.0917	0.5177
2	BANK OF INDIA	B02	2021	-0.0414	0.1085	-0.0647	-0.0561	-1.7306
3	BANK OF MAHARASHTRA	B03	2021	0.0325	0.5918	0.1446	0.3901	0.4161
4	CANARA BANK	B04	2021	0.4149	0.9564	0.8335	1.1378	-2.1440
5	CENTRAL BANK OF INDIA	B05	2021	-0.0353	-0.1291	0.0808	0.0658	-0.2085

6	INDIAN BANK	B06	2021	0.8269	0.8353	1.0596	0.7537	2.9884
7	INDIAN OVERSEAS BANK	B07	2021	-0.0253	0.6546	0.1123	0.6685	-1.0975
8	PUNJAB AND SIND BANK	B08	2021	-0.1205	0.0060	0.0993	-0.2969	1.7583
9	PUNJAB NATIONAL BANK	B09	2021	0.5009	0.3815	0.7478	0.5592	5.0132
10	STATE BANK OF INDIA	B10	2021	0.0304	-0.0381	0.1287	0.0502	0.4088
11	UCO BANK	B11	2021	-0.0455	0.2957	0.0761	0.1210	-1.0685
12	UNION BANK OF INDIA	B12	2021	0.8470	1.1550	1.1587	1.0977	-2.0028
13	BANK OF BARODA	B01	2020	0.5267	0.6391	0.4854	0.4011	0.2599
14	BANK OF INDIA	B02	2020	0.0389	0.4409	0.1171	0.4234	-0.4669
15	BANK OF MAHARASHTRA	B03	2020	0.0595	0.0658	0.1461	0.2955	-1.0812
16	CANARA BANK	B04	2020	0.0454	0.1883	-0.0935	-0.1162	-7.4427
17	CENTRAL BANK OF INDIA	B05	2020	0.0408	0.5072	0.1265	0.3895	-0.8012
18	INDIAN BANK	B06	2020	0.1157	0.7592	0.0838	0.3314	1.3400
19	INDIAN OVERSEAS BANK	B07	2020	-0.0128	-0.2013	0.0045	-0.2980	1.2813
20	PUNJAB AND SIND BANK	B08	2020	-0.0735	0.0834	-0.0974	-0.2147	0.8231
21	PUNJAB NATIONAL BANK	B09	2020	0.0485	0.2571	0.0164	0.1341	-1.0337
22	STATE BANK OF INDIA	B10	2020	0.0595	0.2297	0.1102	0.2290	15.8031
23	UCO BANK	B11	2020	0.0561	0.8971	0.1812	0.7519	-0.4361
24	UNION BANK OF INDIA	B12	2020	0.0929	0.1759	0.1196	0.2207	-0.0169
25	BANK OF BARODA	B01	2019	0.1403	-0.0545	0.1906	0.1234	-1.1783
26	BANK OF INDIA	B02	2019	0.0708	-0.1875	0.2999	0.1335	-0.0822
27	BANK OF MAHARASHTRA	B03	2019	-0.0222	0.0275	0.1014	0.0028	3.1757
28	CANARA BANK	B04	2019	0.1347	-0.0530	0.1903	0.1092	-1.0822
29	CENTRAL BANK OF INDIA	B05	2019	-0.0581	-0.0799	0.0392	0.1440	0.1051
30	INDIAN BANK	B06	2019	0.1210	-0.2174	0.1205	-0.0241	-0.7443
31	INDIAN OVERSEAS BANK	B07	2019	-0.0158	0.1228	-0.0345	0.3871	-0.4066
32	PUNJAB AND SIND BANK	B08	2019	0.0767	0.4251	0.0199	0.2203	-0.2693
33	PUNJAB NATIONAL BANK	B09	2019	0.0691	-0.1693	0.1497	0.2624	-0.1879
34	STATE BANK OF INDIA	B10	2019	0.1014	-0.1755	0.1803	-0.0685	-1.1317
35	UCO BANK	B11	2019	0.0221	0.3501	0.3797	1.0688	-0.0260
36	UNION BANK OF INDIA	B12	2019	0.0403	-0.1034	0.0978	-0.0155	-0.4383
37	BANK OF BARODA	B01	2018	0.0343	-0.0149	0.1486	0.0939	-2.7582
38	BANK OF INDIA	B02	2018	-0.0310	-0.1534	-0.1116	-0.2665	2.8784
39	BANK OF MAHARASHTRA	B03	2018	-0.0800	-0.0013	0.0677	0.1994	-0.1653
40	CANARA BANK	B04	2018	-0.0033	-0.0810	0.2321	0.0712	-4.7634
41	CENTRAL BANK OF INDIA	B05	2018	-0.0254	-0.0881	-0.0087	-0.1151	1.0929
42	INDIAN BANK	B06	2018	0.0670	0.0879	0.2172	0.2500	-0.1044
43	INDIAN OVERSEAS BANK	B07	2018	-0.0915	0.1108	0.0536	-0.0058	0.8437
44	PUNJAB AND SIND BANK	B08	2018	-0.0274	0.0054	0.0351	-0.0782	-4.6989
45	PUNJAB NATIONAL BANK	B09	2018	0.0152	-0.0079	-0.0047	-0.2932	-10.2714
46	STATE BANK OF INDIA	B10	2018	-0.0155	0.0434	-0.0034	-0.0010	3.7353

47	UCO BANK	B11	2018	-0.1412	-0.4698	-0.1813	-0.5440	1.3972
48	UNION BANK OF INDIA	B12	2018	0.0027	0.0051	0.0451	0.0282	-10.4511
49	BANK OF BARODA	B01	2017	-0.0422	0.3519	0.0607	0.2450	-1.2563
50	BANK OF INDIA	B02	2017	-0.0599	0.8541	0.0087	0.6125	-0.7441
51	BANK OF MAHARASHTRA	B03	2017	-0.0759	0.4795	-0.1815	-0.2209	-14.6317
52	CANARA BANK	B04	2017	-0.0598	0.5495	0.0111	0.2473	-1.3989
53	CENTRAL BANK OF INDIA	B05	2017	-0.0474	0.4832	-0.0696	0.3186	0.7199
54	INDIAN BANK	B06	2017	-0.0126	0.2414	0.1574	0.3195	0.9760
55	INDIAN OVERSEAS BANK	B07	2017	-0.1615	0.3340	-0.0359	0.2650	0.1793
56	PUNJAB AND SIND BANK	B08	2017	-0.0654	0.2082	-0.0076	-0.0221	-0.4015
57	PUNJAB NATIONAL BANK	B09	2017	-0.0031	0.4919	-0.0208	0.2845	-1.3333
58	STATE BANK OF INDIA	B10	2017	0.0418	0.2787	0.0376	0.1087	-1.1193
59	UCO BANK	B11	2017	-0.1204	0.3246	-0.2127	-0.1880	-0.3389
60	UNION BANK OF INDIA	B12	2017	0.0143	0.3670	0.0710	0.3168	-0.5892
61	BANK OF BARODA	B01	2016	0.0256	0.1356	-0.0339	-0.1109	-2.5877
62	BANK OF INDIA	B02	2016	-0.0384	-0.1299	0.0304	-0.1939	-4.5632
63	BANK OF MAHARASHTRA	B03	2016	0.0306	0.0132	0.0009	-0.0042	-0.7766
64	CANARA BANK	B04	2016	0.0062	0.0714	0.0103	0.0282	-2.0408
65	CENTRAL BANK OF INDIA	B05	2016	-0.0197	0.0235	-0.0250	-0.3419	-3.3385
66	INDIAN BANK	B06	2016	0.0247	0.3066	-0.0034	0.0061	-0.2923
67	INDIAN OVERSEAS BANK	B07	2016	-0.0176	0.1822	-0.0002	-0.1315	5.3772
68	PUNJAB AND SIND BANK	B08	2016	0.0181	0.1160	0.2957	0.6376	1.7687
69	PUNJAB NATIONAL BANK	B09	2016	0.0239	0.0186	-0.0751	-0.0515	-2.2982
70	STATE BANK OF INDIA	B10	2016	0.0638	0.2105	0.0443	0.0998	-0.2891
71	UCO BANK	B11	2016	-0.0412	-0.2033	-0.1284	-0.2661	-3.4602
72	UNION BANK OF INDIA	B12	2016	0.0036	0.0309	-0.0155	-0.0311	-0.2414
73	BANK OF BARODA	B01	2015	0.1033	-0.0136	0.1021	0.0672	-0.2516
74	BANK OF INDIA	B02	2015	0.1465	-0.0219	0.0506	-0.1110	-0.3739
75	BANK OF MAHARASHTRA	B03	2015	0.0593	0.1250	0.1043	0.1738	0.1677
76	CANARA BANK	B04	2015	0.1063	0.1570	0.0804	0.0227	0.1085
77	CENTRAL BANK OF INDIA	B05	2015	0.0811	-0.0147	0.1159	0.0992	-1.4802
78	INDIAN BANK	B06	2015	0.0396	-0.0061	0.0231	0.0390	-0.1327
79	INDIAN OVERSEAS BANK	B07	2015	0.0553	-0.0142	-0.0346	-0.1688	-1.7550
80	PUNJAB AND SIND BANK	B08	2015	0.0772	0.0034	0.0362	-0.0313	-0.5963
81	PUNJAB NATIONAL BANK	B09	2015	0.0715	0.2871	0.0254	0.0501	-0.0841
82	STATE BANK OF INDIA	B10	2015	0.0973	0.2162	0.1005	0.2070	0.1927
83	UCO BANK	B11	2015	0.0619	0.5173	-0.0820	-0.0061	-0.2468
84	UNION BANK OF INDIA	B12	2015	0.0932	0.2486	0.0717	0.1160	0.0504
85	BANK OF BARODA	B01	2014	0.1063	0.2292	0.0575	0.0324	0.0135
86	BANK OF INDIA	B02	2014	0.1881	0.1396	0.2002	0.1293	-0.0073
87	BANK OF MAHARASHTRA	B03	2014	0.2437	-0.0195	0.1568	-0.0662	-0.4918

S.No.	Name of Bank	Code	Year					
88	CANARA BANK	B04	2014	0.1605	0.2473	0.1352	0.1539	-0.1511
89	CENTRAL BANK OF INDIA	B05	2014	0.1174	0.1531	0.1319	0.0206	-2.2442
90	INDIAN BANK	B06	2014	0.0973	0.0690	-0.0372	-0.0525	-0.2670
91	INDIAN OVERSEAS BANK	B07	2014	0.0971	0.0996	0.0619	0.0472	0.0608
92	PUNJAB AND SIND BANK	B08	2014	0.0862	0.0839	-0.0125	-0.1473	-0.1138
93	PUNJAB NATIONAL BANK	B09	2014	0.0319	0.0836	0.0873	0.0437	-0.2960
94	STATE BANK OF INDIA	B10	2014	0.1246	0.1500	0.1006	0.0168	-0.2314
95	UCO BANK	B11	2014	0.0882	0.3868	0.3225	0.4716	1.4435
96	UNION BANK OF INDIA	B12	2014	0.1681	0.1056	0.0446	-0.0653	-0.2140
97	BANK OF BARODA	B01	2013	0.1861	0.0609	0.0968	0.0488	-0.1051
98	BANK OF INDIA	B02	2013	0.1204	0.1339	0.0855	0.1142	0.0268
99	BANK OF MAHARASHTRA	B03	2013	0.3326	0.4235	0.2051	0.4181	0.7629
100	CANARA BANK	B04	2013	0.1046	0.0770	0.0247	-0.0089	-0.1251
101	CENTRAL BANK OF INDIA	B05	2013	0.1416	0.1950	0.1101	0.1270	0.9041
102	INDIAN BANK	B06	2013	0.1362	0.0414	0.0251	-0.1160	-0.0949
103	INDIAN OVERSEAS BANK	B07	2013	0.1558	0.1736	0.0470	0.0800	-0.4598
104	PUNJAB AND SIND BANK	B08	2013	0.1337	-0.0557	0.0932	0.2353	-0.2483
105	PUNJAB NATIONAL BANK	B09	2013	0.1483	0.0050	0.1069	0.0276	-0.0280
106	STATE BANK OF INDIA	B10	2013	0.1408	0.1079	0.0464	0.0005	0.1598
107	UCO BANK	B11	2013	0.1448	-0.0139	0.1741	0.1941	-0.4424
108	UNION BANK OF INDIA	B12	2013	0.1948	0.0424	0.1104	0.0626	0.2075

S.No.	Name of Bank	Code	Year	Growth of Total Earnings	Growth of Deposits	Growth of Deposits/Total Assets	Growth of Interest Earnings to Total Earnings	Growth of Non-Int. Earnings to Total Earnings
S.No.	Name	Code	Year	TE_G	D_G	D_TA_G	I_TE_G	NI_TE_G
1	BANK OF BARODA	B01	2021	-0.0399	0.0222	0.0245	-0.0337	0.2482
2	BANK OF INDIA	B02	2021	-0.0209	0.1289	0.0218	-0.0209	0.1322
3	BANK OF MAHARASHTRA	B03	2021	0.1026	0.1595	-0.0044	-0.0636	0.4436
4	CANARA BANK	B04	2021	0.4895	0.6165	0.0143	-0.0500	0.3134
5	CENTRAL BANK OF INDIA	B05	2021	-0.0479	0.0517	0.0147	0.0132	-0.0853
6	INDIAN BANK	B06	2021	0.8281	1.0677	0.0222	-0.0006	0.0039
7	INDIAN OVERSEAS BANK	B07	2021	0.0847	0.0778	0.0255	-0.1014	0.5254
8	PUNJAB AND SIND BANK	B08	2021	-0.1076	0.0718	-0.0250	-0.0144	0.1274
9	PUNJAB NATIONAL BANK	B09	2021	0.4834	0.5718	0.0357	0.0118	-0.0687
10	STATE BANK OF INDIA	B10	2021	0.0202	0.1356	-0.0104	0.0100	-0.0572
11	UCO BANK	B11	2021	0.0089	0.0658	-0.0075	-0.0539	0.2842

12	UNION BANK OF INDIA	B12	2021	0.8852	-0.5431	-0.7652	-0.0202	0.1431
13	BANK OF BARODA	B01	2020	0.5393	0.4811	-0.0010	-0.0082	0.0648
14	BANK OF INDIA	B02	2020	0.0801	0.0665	0.0149	-0.0382	0.3340
15	BANK OF MAHARASHTRA	B03	2020	0.0603	0.0669	0.0396	-0.0007	0.0052
16	CANARA BANK	B04	2020	0.0630	0.0439	0.0020	-0.0166	0.1179
17	CENTRAL BANK OF INDIA	B05	2020	0.0857	0.0464	-0.0286	-0.0414	0.3882
18	INDIAN BANK	B06	2020	0.1732	0.0750	-0.0272	-0.0490	0.4995
19	INDIAN OVERSEAS BANK	B07	2020	-0.0491	0.0019	-0.0393	0.0382	-0.1601
20	PUNJAB AND SIND BANK	B08	2020	-0.0597	-0.0902	-0.0135	-0.0147	0.1522
21	PUNJAB NATIONAL BANK	B09	2020	0.0747	0.0411	-0.0287	-0.0244	0.1697
22	STATE BANK OF INDIA	B10	2020	0.0819	0.1134	0.0372	-0.0207	0.1366
23	UCO BANK	B11	2020	0.1364	-0.0238	-0.0462	-0.0707	0.6693
24	UNION BANK OF INDIA	B12	2020	0.1025	0.0836	-0.0279	-0.0087	0.0665
25	BANK OF BARODA	B01	2019	0.1145	0.0801	-0.0042	0.0231	-0.1516
26	BANK OF INDIA	B02	2019	0.0370	0.0000	-0.0250	0.0326	-0.2165
27	BANK OF MAHARASHTRA	B03	2019	-0.0163	0.0120	-0.0385	-0.0060	0.0445
28	CANARA BANK	B04	2019	0.1077	0.1415	0.0136	0.0244	-0.1451
29	CENTRAL BANK OF INDIA	B05	2019	-0.0603	0.0170	0.0032	0.0023	-0.0209
30	INDIAN BANK	B06	2019	0.0793	0.1622	0.0487	0.0386	-0.2749
31	INDIAN OVERSEAS BANK	B07	2019	0.0081	0.0263	0.0179	-0.0238	0.1137
32	PUNJAB AND SIND BANK	B08	2019	0.1005	-0.0311	0.0113	-0.0216	0.2950
33	PUNJAB NATIONAL BANK	B09	2019	0.0318	0.0526	0.0402	0.0361	-0.1949
34	STATE BANK OF INDIA	B10	2019	0.0549	0.0758	0.0097	0.0442	-0.2183
35	UCO BANK	B11	2019	0.0464	0.0883	0.0202	-0.0232	0.2902
36	UNION BANK OF INDIA	B12	2019	0.0213	0.0181	0.0044	0.0186	-0.1221
37	BANK OF BARODA	B01	2018	0.0275	-0.0172	-0.0515	0.0066	-0.0413
38	BANK OF INDIA	B02	2018	-0.0490	-0.0355	-0.0090	0.0189	-0.1097
39	BANK OF MAHARASHTRA	B03	2018	-0.0713	-0.0005	0.0186	-0.0094	0.0753
40	CANARA BANK	B04	2018	-0.0153	0.0596	0.0022	0.0122	-0.0667
41	CENTRAL BANK OF INDIA	B05	2018	-0.0319	-0.0062	0.0157	0.0068	-0.0580
42	INDIAN BANK	B06	2018	0.0695	0.1413	-0.0144	-0.0024	0.0172
43	INDIAN OVERSEAS BANK	B07	2018	-0.0619	0.0260	0.0227	-0.0315	0.1841
44	PUNJAB AND SIND BANK	B08	2018	-0.0253	0.1892	0.0103	-0.0022	0.0314
45	PUNJAB NATIONAL BANK	B09	2018	0.0115	0.0330	-0.0284	0.0036	-0.0192
46	STATE BANK OF INDIA	B10	2018	-0.0060	0.0471	0.0072	-0.0095	0.0497
47	UCO BANK	B11	2018	-0.1789	-0.0966	-0.0326	0.0459	-0.3543
48	UNION BANK OF INDIA	B12	2018	0.0030	0.0867	0.0094	-0.0003	0.0021
49	BANK OF BARODA	B01	2017	-0.0021	0.0481	0.0127	-0.0402	0.3547
50	BANK OF INDIA	B02	2017	0.0135	0.0527	0.0251	-0.0725	0.8294
51	BANK OF MAHARASHTRA	B03	2017	-0.0357	0.0005	0.0107	-0.0417	0.5343
52	CANARA BANK	B04	2017	0.0009	0.0323	-0.0218	-0.0607	0.5481

53	CENTRAL BANK OF INDIA	B05	2017	-0.0104	0.1145	0.0211	-0.0374	0.4988
54	INDIAN BANK	B06	2017	0.0125	0.0237	-0.0444	-0.0248	0.2260
55	INDIAN OVERSEAS BANK	B07	2017	-0.1134	-0.0587	0.0452	-0.0543	0.5046
56	PUNJAB AND SIND BANK	B08	2017	-0.0512	-0.0626	-0.0050	-0.0150	0.2733
57	PUNJAB NATIONAL BANK	B09	2017	0.0525	0.1241	0.0415	-0.0528	0.4175
58	STATE BANK OF INDIA	B10	2017	0.0737	0.1536	0.0281	-0.0297	0.1910
59	UCO BANK	B11	2017	-0.0852	-0.0282	0.0287	-0.0385	0.4480
60	UNION BANK OF INDIA	B12	2017	0.0501	0.0968	-0.0195	-0.0340	0.3018
61	BANK OF BARODA	B01	2016	0.0358	-0.0705	-0.0101	-0.0099	0.0964
62	BANK OF INDIA	B02	2016	-0.0464	-0.0355	-0.0216	0.0085	-0.0875
63	BANK OF MAHARASHTRA	B03	2016	0.0293	0.1382	0.0325	0.0012	-0.0156
64	CANARA BANK	B04	2016	0.0124	0.0126	0.0035	-0.0061	0.0583
65	CENTRAL BANK OF INDIA	B05	2016	-0.0168	0.0415	0.0636	-0.0029	0.0410
66	INDIAN BANK	B06	2016	0.0470	0.0535	-0.0027	-0.0213	0.2480
67	INDIAN OVERSEAS BANK	B07	2016	-0.0012	-0.0875	-0.0503	-0.0164	0.1836
68	PUNJAB AND SIND BANK	B08	2016	0.0228	0.0523	0.0028	-0.0045	0.0911
69	PUNJAB NATIONAL BANK	B09	2016	0.0233	0.1031	-0.0028	0.0006	-0.0047
70	STATE BANK OF INDIA	B10	2016	0.0814	0.0984	-0.0332	-0.0163	0.1194
71	UCO BANK	B11	2016	-0.0564	-0.0337	-0.0296	0.0161	-0.1556
72	UNION BANK OF INDIA	B12	2016	0.0063	0.0816	0.0199	-0.0027	0.0244
73	BANK OF BARODA	B01	2015	0.0913	0.0855	0.0013	0.0110	-0.0961
74	BANK OF INDIA	B02	2015	0.1294	0.1152	0.0331	0.0152	-0.1339
75	BANK OF MAHARASHTRA	B03	2015	0.0639	0.0455	-0.0239	-0.0043	0.0575
76	CANARA BANK	B04	2015	0.1109	0.1263	0.0110	-0.0041	0.0416
77	CENTRAL BANK OF INDIA	B05	2015	0.0741	0.0646	-0.0120	0.0065	-0.0827
78	INDIAN BANK	B06	2015	0.0358	0.0428	0.0125	0.0036	-0.0404
79	INDIAN OVERSEAS BANK	B07	2015	0.0492	0.0793	0.0387	0.0058	-0.0604
80	PUNJAB AND SIND BANK	B08	2015	0.0735	0.0234	-0.0105	0.0035	-0.0652
81	PUNJAB NATIONAL BANK	B09	2015	0.0922	0.1107	0.0133	-0.0189	0.1785
82	STATE BANK OF INDIA	B10	2015	0.1103	0.1156	-0.0077	-0.0118	0.0953
83	UCO BANK	B11	2015	0.0927	0.0742	0.0445	-0.0281	0.3885
84	UNION BANK OF INDIA	B12	2015	0.1068	0.0645	-0.0132	-0.0123	0.1281
85	BANK OF BARODA	B01	2014	0.1178	0.2005	-0.0041	-0.0103	0.0996
86	BANK OF INDIA	B02	2014	0.1830	0.2491	-0.0136	0.0043	-0.0366
87	BANK OF MAHARASHTRA	B03	2014	0.2209	0.2381	0.0622	0.0187	-0.1969
88	CANARA BANK	B04	2014	0.1679	0.1823	-0.0090	-0.0063	0.0680
89	CENTRAL BANK OF INDIA	B05	2014	0.1199	0.0621	-0.0163	-0.0023	0.0296
90	INDIAN BANK	B06	2014	0.0949	0.1429	-0.0060	0.0022	-0.0236
91	INDIAN OVERSEAS BANK	B07	2014	0.0973	0.1278	0.0038	-0.0002	0.0021
92	PUNJAB AND SIND BANK	B08	2014	0.0861	0.1994	0.0214	0.0001	-0.0020
93	PUNJAB NATIONAL BANK	B09	2014	0.0367	0.1528	0.0031	-0.0046	0.0453

S.No.	Name of Bank	Code	Year					
94	STATE BANK OF INDIA	B10	2014	0.1273	0.1297	0.0065	-0.0024	0.0201
95	UCO BANK	B11	2014	0.1043	0.1505	-0.0442	-0.0145	0.2559
96	UNION BANK OF INDIA	B12	2014	0.1624	0.1286	-0.0043	0.0050	-0.0488
97	BANK OF BARODA	B01	2013	0.1732	0.2313	0.0067	0.0110	-0.0957
98	BANK OF INDIA	B02	2013	0.1218	0.1999	0.0195	-0.0013	0.0108
99	BANK OF MAHARASHTRA	B03	2013	0.3400	0.2327	-0.0394	-0.0055	0.0623
100	CANARA BANK	B04	2013	0.1022	0.0881	-0.0127	0.0022	-0.0229
101	CENTRAL BANK OF INDIA	B05	2013	0.1452	0.1522	-0.0125	-0.0032	0.0434
102	INDIAN BANK	B06	2013	0.1275	0.1753	0.0208	0.0077	-0.0764
103	INDIAN OVERSEAS BANK	B07	2013	0.1574	0.1328	0.0170	-0.0013	0.0141
104	PUNJAB AND SIND BANK	B08	2013	0.1222	0.1191	0.0138	0.0102	-0.1585
105	PUNJAB NATIONAL BANK	B09	2013	0.1335	0.0315	-0.0132	0.0131	-0.1134
106	STATE BANK OF INDIA	B10	2013	0.1372	0.1519	-0.0123	0.0032	-0.0257
107	UCO BANK	B11	2013	0.1350	0.1262	0.0232	0.0087	-0.1312
108	UNION BANK OF INDIA	B12	2013	0.1789	0.1835	-0.0058	0.0135	-0.1158

S.No.	Name of Bank	Code	Year	Growth of Net Interest Income to Total Earnings	Growth of Operating Profit to Total Earnings	Growth of Net Profit (Net PAT) to Total Earnings	Growth of Net Profit (Net PAT) to Total Assets	Growth of Total Earnings to Total Assets
S.No.	Name	Code	Year	NII_TE_G	OPP_TE_G	PAT_TE_G	PAT_TA_G	TE_TA_G
1	BANK OF BARODA	B01	2021	0.0930	0.1371	0.5808	0.5211	-0.0378
2	BANK OF INDIA	B02	2021	-0.0447	-0.0360	-1.7462	-1.6613	-0.1138
3	BANK OF MAHARASHTRA	B03	2021	0.0380	0.2607	0.2842	0.2159	-0.0532
4	CANARA BANK	B04	2021	0.2309	0.4353	-1.7680	-1.7178	-0.0654
5	CENTRAL BANK OF INDIA	B05	2021	0.1351	0.1194	-0.1687	-0.2363	-0.0813
6	INDIAN BANK	B06	2021	0.1266	-0.0407	1.1818	0.9717	-0.0963
7	INDIAN OVERSEAS BANK	B07	2021	0.0255	0.5382	-1.0899	-1.0928	0.0321
8	PUNJAB AND SIND BANK	B08	2021	0.2319	-0.2121	2.0910	1.5092	-0.1882
9	PUNJAB NATIONAL BANK	B09	2021	0.1782	0.0511	3.0538	2.9623	-0.0226
10	STATE BANK OF INDIA	B10	2021	0.1064	0.0295	0.3809	0.2276	-0.1110
11	UCO BANK	B11	2021	0.0666	0.1111	-1.0679	-1.0638	-0.0605
12	UNION BANK OF INDIA	B12	2021	0.1451	0.1127	-1.5320	-1.5153	-0.0313
13	BANK OF BARODA	B01	2020	-0.0350	-0.0898	-0.1815	-0.1502	0.0382
14	BANK OF INDIA	B02	2020	0.0342	0.3178	-0.5065	-0.4927	0.0279
15	BANK OF MAHARASHTRA	B03	2020	0.0809	0.2218	-1.0766	-1.0791	0.0331
16	CANARA BANK	B04	2020	-0.1473	-0.1686	-7.0609	-7.1836	0.0202
17	CENTRAL BANK OF INDIA	B05	2020	0.0375	0.2797	-0.8169	-0.8155	0.0079

18	INDIAN BANK	B06	2020	-0.0762	0.1348	0.9945	1.1176	0.0618
19	INDIAN OVERSEAS BANK	B07	2020	0.0563	-0.2618	1.3991	1.1876	-0.0882
20	PUNJAB AND SIND BANK	B08	2020	-0.0402	-0.1649	0.9387	0.9769	0.0197
21	PUNJAB NATIONAL BANK	B09	2020	-0.0543	0.0553	-1.0314	-1.0314	0.0027
22	STATE BANK OF INDIA	B10	2020	0.0262	0.1360	14.5311	14.6529	0.0078
23	UCO BANK	B11	2020	0.0394	0.5416	-0.5038	-0.4490	0.1103
24	UNION BANK OF INDIA	B12	2020	0.0155	0.1072	-0.1083	-0.1180	-0.0109
25	BANK OF BARODA	B01	2019	0.0683	0.0080	-1.1600	-1.1644	0.0275
26	BANK OF INDIA	B02	2019	0.2535	0.0931	-0.1150	-0.1052	0.0111
27	BANK OF MAHARASHTRA	B03	2019	0.1197	0.0195	3.2449	2.9674	-0.0654
28	CANARA BANK	B04	2019	0.0746	0.0014	-1.0742	-1.0730	-0.0165
29	CENTRAL BANK OF INDIA	B05	2019	0.1058	0.2173	0.1760	0.0901	-0.0730
30	INDIAN BANK	B06	2019	0.0381	-0.0958	-0.7631	-0.7693	-0.0261
31	INDIAN OVERSEAS BANK	B07	2019	-0.0422	0.3759	-0.4114	-0.4115	-0.0001
32	PUNJAB AND SIND BANK	B08	2019	-0.0732	0.1089	-0.3360	-0.2373	0.1487
33	PUNJAB NATIONAL BANK	B09	2019	0.1142	0.2234	-0.2129	-0.1974	0.0197
34	STATE BANK OF INDIA	B10	2019	0.1189	-0.1169	-1.1248	-1.1236	-0.0100
35	UCO BANK	B11	2019	0.3185	0.9770	-0.0692	-0.0870	-0.0191
36	UNION BANK OF INDIA	B12	2019	0.0750	-0.0360	-0.4500	-0.4459	0.0075
37	BANK OF BARODA	B01	2018	0.1178	0.0646	-2.7111	-2.6968	-0.0083
38	BANK OF INDIA	B02	2018	-0.0658	-0.2287	3.0783	2.9848	-0.0229
39	BANK OF MAHARASHTRA	B03	2018	0.1497	0.2915	-0.1012	-0.1493	-0.0535
40	CANARA BANK	B04	2018	0.2512	0.0878	-4.8217	-4.5598	-0.0685
41	CENTRAL BANK OF INDIA	B05	2018	0.0240	-0.0860	1.1620	1.1390	-0.0106
42	INDIAN BANK	B06	2018	0.1381	0.1688	-0.1626	-0.2266	-0.0764
43	INDIAN OVERSEAS BANK	B07	2018	0.1231	0.0598	0.9654	0.8378	-0.0649
44	PUNJAB AND SIND BANK	B08	2018	0.0620	-0.0544	-4.7948	-4.1424	-0.1719
45	PUNJAB NATIONAL BANK	B09	2018	-0.0161	-0.3013	-10.1656	-9.7206	-0.0486
46	STATE BANK OF INDIA	B10	2018	0.0026	0.0050	3.7640	3.5550	-0.0439
47	UCO BANK	B11	2018	-0.0029	-0.4447	1.9195	1.5667	-0.1208
48	UNION BANK OF INDIA	B12	2018	0.0419	0.0251	-10.4227	-9.7787	-0.0684
49	BANK OF BARODA	B01	2017	0.0629	0.2476	-1.2569	-1.2477	-0.0358
50	BANK OF INDIA	B02	2017	-0.0048	0.5910	-0.7475	-0.7508	-0.0130
51	BANK OF MAHARASHTRA	B03	2017	-0.1512	-0.1921	-15.1362	-14.7715	-0.0258
52	CANARA BANK	B04	2017	0.0102	0.2461	-1.3985	-1.3780	-0.0515
53	CENTRAL BANK OF INDIA	B05	2017	-0.0598	0.3324	0.7380	0.5758	-0.0933
54	INDIAN BANK	B06	2017	0.1431	0.3031	0.9515	0.8445	-0.0548
55	INDIAN OVERSEAS BANK	B07	2017	0.0875	0.4269	0.3301	0.3094	-0.0156
56	PUNJAB AND SIND BANK	B08	2017	0.0460	0.0307	-0.3692	-0.3647	0.0071
57	PUNJAB NATIONAL BANK	B09	2017	-0.0696	0.2204	-1.3167	-1.3088	-0.0249
58	STATE BANK OF INDIA	B10	2017	-0.0336	0.0326	-1.1111	-1.1063	-0.0431

59	UCO BANK	B11	2017	-0.1394	-0.1124	-0.2773	-0.3002	-0.0316
60	UNION BANK OF INDIA	B12	2017	0.0199	0.2540	-0.6088	-0.6328	-0.0613
61	BANK OF BARODA	B01	2016	-0.0673	-0.1416	-2.5328	-2.6908	0.1031
62	BANK OF INDIA	B02	2016	0.0806	-0.1547	-4.7367	-4.6145	-0.0327
63	BANK OF MAHARASHTRA	B03	2016	-0.0276	-0.0326	-0.7830	-0.7973	-0.0662
64	CANARA BANK	B04	2016	-0.0020	0.0157	-2.0281	-2.0314	0.0033
65	CENTRAL BANK OF INDIA	B05	2016	-0.0083	-0.3306	-3.3785	-3.3881	0.0040
66	INDIAN BANK	B06	2016	-0.0481	-0.0391	-0.3240	-0.3301	-0.0089
67	INDIAN OVERSEAS BANK	B07	2016	0.0010	-0.1305	5.3849	5.6375	0.0396
68	PUNJAB AND SIND BANK	B08	2016	0.2669	0.6011	1.7070	1.6384	-0.0253
69	PUNJAB NATIONAL BANK	B09	2016	-0.0962	-0.0731	-2.2685	-2.1736	-0.0749
70	STATE BANK OF INDIA	B10	2016	-0.0343	0.0170	-0.3426	-0.3743	-0.0482
71	UCO BANK	B11	2016	-0.0763	-0.2223	-3.6073	-3.4706	-0.0524
72	UNION BANK OF INDIA	B12	2016	-0.0216	-0.0371	-0.2461	-0.2846	-0.0511
73	BANK OF BARODA	B01	2015	0.0099	-0.0221	-0.3142	-0.3097	0.0066
74	BANK OF INDIA	B02	2015	-0.0698	-0.2129	-0.4456	-0.4199	0.0463
75	BANK OF MAHARASHTRA	B03	2015	0.0381	0.1034	0.0976	0.0901	-0.0068
76	CANARA BANK	B04	2015	-0.0274	-0.0794	-0.0022	-0.0050	-0.0028
77	CENTRAL BANK OF INDIA	B05	2015	0.0389	0.0233	-1.4471	-1.4457	-0.0032
78	INDIAN BANK	B06	2015	-0.0123	0.0031	-0.1627	-0.1579	0.0057
79	INDIAN OVERSEAS BANK	B07	2015	-0.0799	-0.2079	-1.7196	-1.7266	0.0098
80	PUNJAB AND SIND BANK	B08	2015	-0.0348	-0.0977	-0.6240	-0.6097	0.0379
81	PUNJAB NATIONAL BANK	B09	2015	-0.0612	-0.0385	-0.1614	-0.1644	-0.0036
82	STATE BANK OF INDIA	B10	2015	-0.0089	0.0871	0.0742	0.0608	-0.0124
83	UCO BANK	B11	2015	-0.1598	-0.0904	-0.3107	-0.2676	0.0625
84	UNION BANK OF INDIA	B12	2015	-0.0318	0.0083	-0.0510	-0.0262	0.0261
85	BANK OF BARODA	B01	2014	-0.0540	-0.0764	-0.0934	-0.1592	-0.0726
86	BANK OF INDIA	B02	2014	0.0146	-0.0454	-0.1608	-0.2161	-0.0659
87	BANK OF MAHARASHTRA	B03	2014	-0.0525	-0.2352	-0.5838	-0.5640	0.0475
88	CANARA BANK	B04	2014	-0.0279	-0.0120	-0.2731	-0.2884	-0.0211
89	CENTRAL BANK OF INDIA	B05	2014	0.0107	-0.0887	-2.1110	-2.1524	0.0373
90	INDIAN BANK	B06	2014	-0.1207	-0.1346	-0.3305	-0.3626	-0.0478
91	INDIAN OVERSEAS BANK	B07	2014	-0.0323	-0.0456	-0.0332	-0.0559	-0.0234
92	PUNJAB AND SIND BANK	B08	2014	-0.0907	-0.2149	-0.1840	-0.2453	-0.0752
93	PUNJAB NATIONAL BANK	B09	2014	0.0489	0.0068	-0.3209	-0.3874	-0.0979
94	STATE BANK OF INDIA	B10	2014	-0.0238	-0.0980	-0.3182	-0.3152	0.0044
95	UCO BANK	B11	2014	0.1976	0.3326	1.2127	1.0299	-0.0826
96	UNION BANK OF INDIA	B12	2014	-0.1013	-0.1959	-0.3238	-0.3065	0.0255
97	BANK OF BARODA	B01	2013	-0.0651	-0.1060	-0.2372	-0.2684	-0.0409
98	BANK OF INDIA	B02	2013	-0.0324	-0.0068	-0.0847	-0.1276	-0.0469
99	BANK OF MAHARASHTRA	B03	2013	-0.1007	0.0582	0.3156	0.3738	0.0442

S.No.	Name	Code	Year					
100	CANARA BANK	B04	2013	-0.0704	-0.1009	-0.2062	-0.2061	0.0002
101	CENTRAL BANK OF INDIA	B05	2013	-0.0307	-0.0159	0.6627	0.6319	-0.0185
102	INDIAN BANK	B06	2013	-0.0908	-0.2160	-0.1973	-0.2139	-0.0207
103	INDIAN OVERSEAS BANK	B07	2013	-0.0953	-0.0668	-0.5333	-0.5151	0.0390
104	PUNJAB AND SIND BANK	B08	2013	-0.0258	0.1008	-0.3302	-0.3191	0.0166
105	PUNJAB NATIONAL BANK	B09	2013	-0.0234	-0.0934	-0.1424	-0.0701	0.0844
106	STATE BANK OF INDIA	B10	2013	-0.0798	-0.1202	0.0199	-0.0055	-0.0249
107	UCO BANK	B11	2013	0.0345	0.0520	-0.5087	-0.4934	0.0313
108	UNION BANK OF INDIA	B12	2013	-0.0581	-0.0986	0.0242	0.0144	-0.0096

S.No.	Name of Bank	Code	Year	Growth of Interest Earnings per Branch	Growth of Non-Int. Earnings per Branch	Growth of Net Interest Income per Branch	Growth of Operating Profit per Branch
S.No.	Name	Code	Year	I_BR_G	NI_BR_G	NII_BR_G	OPP_BR_G
1	BANK OF BARODA	B01	2021	0.0710	0.3834	0.2115	0.2603
2	BANK OF INDIA	B02	2021	-0.0416	0.1083	-0.0649	-0.0563
3	BANK OF MAHARASHTRA	B03	2021	-0.0118	0.5237	0.0956	0.3306
4	CANARA BANK	B04	2021	-0.1395	0.1898	0.1150	0.3001
5	CENTRAL BANK OF INDIA	B05	2021	-0.0263	-0.1210	0.0909	0.0758
6	INDIAN BANK	B06	2021	-0.1404	-0.1365	-0.0310	-0.1749
7	INDIAN OVERSEAS BANK	B07	2021	-0.0092	0.6820	0.1307	0.6961
8	PUNJAB AND SIND BANK	B08	2021	-0.1234	0.0027	0.0957	-0.2992
9	PUNJAB NATIONAL BANK	B09	2021	-0.0855	-0.1583	0.0649	-0.0500
10	STATE BANK OF INDIA	B10	2021	0.0271	-0.0413	0.1251	0.0468
11	UCO BANK	B11	2021	-0.0458	0.2953	0.0757	0.1206
12	UNION BANK OF INDIA	B12	2021	-0.1527	-0.0114	-0.0097	-0.0377
13	BANK OF BARODA	B01	2020	-0.1061	-0.0403	-0.1302	-0.1796
14	BANK OF INDIA	B02	2020	0.0399	0.4424	0.1182	0.4248
15	BANK OF MAHARASHTRA	B03	2020	0.0589	0.0652	0.1454	0.2948
16	CANARA BANK	B04	2020	0.0423	0.1848	-0.0962	-0.1189
17	CENTRAL BANK OF INDIA	B05	2020	0.0428	0.5101	0.1287	0.3922
18	INDIAN BANK	B06	2020	0.1137	0.7561	0.0819	0.3290
19	INDIAN OVERSEAS BANK	B07	2020	-0.0103	-0.1993	0.0070	-0.2963
20	PUNJAB AND SIND BANK	B08	2020	-0.0784	0.0778	-0.1022	-0.2188
21	PUNJAB NATIONAL BANK	B09	2020	0.0495	0.2582	0.0173	0.1352
22	STATE BANK OF INDIA	B10	2020	0.0545	0.2239	0.1050	0.2233

23	UCO BANK	B11	2020	0.0578	0.9002	0.1831	0.7547
24	UNION BANK OF INDIA	B12	2020	0.0944	0.1775	0.1212	0.2224
25	BANK OF BARODA	B01	2019	0.1228	-0.0690	0.1724	0.1062
26	BANK OF INDIA	B02	2019	0.0785	-0.1816	0.3093	0.1416
27	BANK OF MAHARASHTRA	B03	2019	-0.0148	0.0353	0.1098	0.0105
28	CANARA BANK	B04	2019	0.1308	-0.0563	0.1862	0.1053
29	CENTRAL BANK OF INDIA	B05	2019	-0.0525	-0.0743	0.0454	0.1509
30	INDIAN BANK	B06	2019	0.0900	-0.2390	0.0895	-0.0511
31	INDIAN OVERSEAS BANK	B07	2019	-0.0002	0.1407	-0.0191	0.4092
32	PUNJAB AND SIND BANK	B08	2019	0.0739	0.4214	0.0172	0.2171
33	PUNJAB NATIONAL BANK	B09	2019	0.0684	-0.1698	0.1490	0.2616
34	STATE BANK OF INDIA	B10	2019	0.1194	-0.1620	0.1996	-0.0533
35	UCO BANK	B11	2019	0.0228	0.3510	0.3806	1.0701
36	UNION BANK OF INDIA	B12	2019	0.0422	-0.1017	0.0999	-0.0137
37	BANK OF BARODA	B01	2018	0.0258	-0.0230	0.1392	0.0849
38	BANK OF INDIA	B02	2018	-0.0312	-0.1535	-0.1118	-0.2666
39	BANK OF MAHARASHTRA	B03	2018	-0.0546	0.0263	0.0972	0.2325
40	CANARA BANK	B04	2018	-0.0249	-0.1009	0.2054	0.0479
41	CENTRAL BANK OF INDIA	B05	2018	-0.0189	-0.0821	-0.0021	-0.1093
42	INDIAN BANK	B06	2018	0.0156	0.0355	0.1585	0.1898
43	INDIAN OVERSEAS BANK	B07	2018	-0.0788	0.1263	0.0682	0.0080
44	PUNJAB AND SIND BANK	B08	2018	-0.0364	-0.0039	0.0256	-0.0868
45	PUNJAB NATIONAL BANK	B09	2018	0.0061	-0.0168	-0.0137	-0.2996
46	STATE BANK OF INDIA	B10	2018	0.0594	0.1227	0.0724	0.0750
47	UCO BANK	B11	2018	-0.1426	-0.4707	-0.1827	-0.5448
48	UNION BANK OF INDIA	B12	2018	-0.0027	-0.0003	0.0395	0.0227
49	BANK OF BARODA	B01	2017	-0.0585	0.3290	0.0427	0.2238
50	BANK OF INDIA	B02	2017	-0.0787	0.8172	-0.0115	0.5804
51	BANK OF MAHARASHTRA	B03	2017	-0.0769	0.4780	-0.1824	-0.2217
52	CANARA BANK	B04	2017	-0.0986	0.4856	-0.0306	0.1958
53	CENTRAL BANK OF INDIA	B05	2017	-0.0492	0.4804	-0.0714	0.3160
54	INDIAN BANK	B06	2017	-0.0504	0.1938	0.1130	0.2689
55	INDIAN OVERSEAS BANK	B07	2017	-0.1548	0.3447	-0.0281	0.2752
56	PUNJAB AND SIND BANK	B08	2017	-0.0772	0.1929	-0.0201	-0.0344
57	PUNJAB NATIONAL BANK	B09	2017	-0.0249	0.4593	-0.0422	0.2564
58	STATE BANK OF INDIA	B10	2017	0.0225	0.2550	0.0183	0.0881
59	UCO BANK	B11	2017	-0.1265	0.3155	-0.2181	-0.1935
60	UNION BANK OF INDIA	B12	2017	-0.0037	0.3427	0.0519	0.2934
61	BANK OF BARODA	B01	2016	-0.0014	0.1058	-0.0593	-0.1342
62	BANK OF INDIA	B02	2016	-0.0632	-0.1524	0.0038	-0.2147
63	BANK OF MAHARASHTRA	B03	2016	0.0224	0.0052	-0.0070	-0.0121

64	CANARA BANK	B04	2016	-0.0223	0.0411	-0.0183	-0.0009
65	CENTRAL BANK OF INDIA	B05	2016	-0.0268	0.0161	-0.0321	-0.3466
66	INDIAN BANK	B06	2016	-0.0366	0.2285	-0.0630	-0.0541
67	INDIAN OVERSEAS BANK	B07	2016	-0.0222	0.1766	-0.0050	-0.1356
68	PUNJAB AND SIND BANK	B08	2016	0.0010	0.0972	0.2739	0.6100
69	PUNJAB NATIONAL BANK	B09	2016	-0.0060	-0.0112	-0.1022	-0.0792
70	STATE BANK OF INDIA	B10	2016	0.0321	0.1745	0.0133	0.0671
71	UCO BANK	B11	2016	-0.0599	-0.2187	-0.1454	-0.2804
72	UNION BANK OF INDIA	B12	2016	-0.0249	0.0016	-0.0434	-0.0585
73	BANK OF BARODA	B01	2015	0.0308	-0.0784	0.0297	-0.0029
74	BANK OF INDIA	B02	2015	0.0896	-0.0704	-0.0016	-0.1551
75	BANK OF MAHARASHTRA	B03	2015	0.0446	0.1095	0.0891	0.1576
76	CANARA BANK	B04	2015	-0.0737	-0.0312	-0.0954	-0.1437
77	CENTRAL BANK OF INDIA	B05	2015	0.0554	-0.0381	0.0894	0.0731
78	INDIAN BANK	B06	2015	-0.0300	-0.0726	-0.0454	-0.0306
79	INDIAN OVERSEAS BANK	B07	2015	0.0193	-0.0478	-0.0675	-0.1972
80	PUNJAB AND SIND BANK	B08	2015	-0.0160	-0.0834	-0.0535	-0.1152
81	PUNJAB NATIONAL BANK	B09	2015	0.0089	0.2119	-0.0346	-0.0113
82	STATE BANK OF INDIA	B10	2015	0.0540	0.1682	0.0571	0.1594
83	UCO BANK	B11	2015	0.0170	0.4530	-0.1208	-0.0482
84	UNION BANK OF INDIA	B12	2015	0.0366	0.1840	0.0162	0.0583
85	BANK OF BARODA	B01	2014	-0.0303	0.0774	-0.0732	-0.0951
86	BANK OF INDIA	B02	2014	0.0952	0.0506	0.1064	0.0411
87	BANK OF MAHARASHTRA	B03	2014	0.1351	-0.1052	0.0557	-0.1478
88	CANARA BANK	B04	2014	-0.0891	-0.0209	-0.1089	-0.0943
89	CENTRAL BANK OF INDIA	B05	2014	0.0509	0.0844	0.0645	-0.0402
90	INDIAN BANK	B06	2014	0.0150	-0.0111	-0.1094	-0.1235
91	INDIAN OVERSEAS BANK	B07	2014	-0.0259	-0.0237	-0.0572	-0.0702
92	PUNJAB AND SIND BANK	B08	2014	-0.0772	-0.0791	-0.1610	-0.2755
93	PUNJAB NATIONAL BANK	B09	2014	-0.0266	0.0222	0.0256	-0.0155
94	STATE BANK OF INDIA	B10	2014	0.0407	0.0642	0.0185	-0.0590
95	UCO BANK	B11	2014	-0.0190	0.2501	0.1922	0.3266
96	UNION BANK OF INDIA	B12	2014	0.0594	0.0027	-0.0527	-0.1523
97	BANK OF BARODA	B01	2013	0.0826	-0.0317	0.0010	-0.0428
98	BANK OF INDIA	B02	2013	0.0421	0.0547	0.0096	0.0364
99	BANK OF MAHARASHTRA	B03	2013	0.2231	0.3066	0.1061	0.3016
100	CANARA BANK	B04	2013	0.0643	0.0377	-0.0127	-0.0451
101	CENTRAL BANK OF INDIA	B05	2013	0.0661	0.1159	0.0367	0.0525
102	INDIAN BANK	B06	2013	0.0659	-0.0231	-0.0383	-0.1707
103	INDIAN OVERSEAS BANK	B07	2013	0.0447	0.0608	-0.0537	-0.0238
104	PUNJAB AND SIND BANK	B08	2013	0.0314	-0.1409	-0.0054	0.1238

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S.No.	Name of Bank	Code	Year					
105	PUNJAB NATIONAL BANK	B09	2013	0.1102	-0.0284	0.0702	-0.0065
106	STATE BANK OF INDIA	B10	2013	0.0758	0.0447	-0.0133	-0.0565
107	UCO BANK	B11	2013	0.0455	-0.0994	0.0722	0.0905
108	UNION BANK OF INDIA	B12	2013	0.0888	-0.0501	0.0119	-0.0316

S.No.	Name of Bank	Code	Year	Growth of Net Profit (Net PAT) per Branch	Growth of Total Earnings per Branch	Growth of Fixed Assets per Branch	Growth of Total Assets per Branch	Growth of Deposits per Branch
S.No.	Name	Code	Year	PAT_BR_G	TE_BR_G	FA_BR_G	TA_BR_G	D_BR_G
1	BANK OF BARODA	B01	2021	0.7520	0.1083	0.0410	0.1518	0.1800
2	BANK OF INDIA	B02	2021	-1.7305	-0.0211	-0.0078	0.1046	0.1287
3	BANK OF MAHARASHTRA	B03	2021	0.3554	0.0554	-0.0441	0.1147	0.1099
4	CANARA BANK	B04	2021	-1.6957	-0.0942	-0.1765	-0.0308	-0.0169
5	CENTRAL BANK OF INDIA	B05	2021	-0.2011	-0.0390	0.1947	0.0461	0.0615
6	INDIAN BANK	B06	2021	0.8766	-0.1399	-0.1091	-0.0482	-0.0271
7	INDIAN OVERSEAS BANK	B07	2021	-1.0991	0.1027	-0.0512	0.0683	0.0956
8	PUNJAB AND SIND BANK	B08	2021	1.7493	-0.1106	0.2731	0.0957	0.0683
9	PUNJAB NATIONAL BANK	B09	2021	2.6639	-0.0962	-0.0724	-0.0753	-0.0423
10	STATE BANK OF INDIA	B10	2021	0.4042	0.0169	-0.0038	0.1438	0.1320
11	UCO BANK	B11	2021	-1.0685	0.0086	0.1327	0.0735	0.0655
12	UNION BANK OF INDIA	B12	2021	-1.4600	-0.1352	-0.2926	-0.1072	-0.7904
13	BANK OF BARODA	B01	2020	-0.2623	-0.0987	-0.2554	-0.1319	-0.1328
14	BANK OF INDIA	B02	2020	-0.4664	0.0812	0.0079	0.0519	0.0676
15	BANK OF MAHARASHTRA	B03	2020	-1.0812	0.0597	-0.0565	0.0258	0.0664
16	CANARA BANK	B04	2020	-7.4235	0.0598	-0.0189	0.0388	0.0408
17	CENTRAL BANK OF INDIA	B05	2020	-0.8008	0.0878	0.0080	0.0793	0.0484
18	INDIAN BANK	B06	2020	1.3358	0.1712	-0.0183	0.1030	0.0731
19	INDIAN OVERSEAS BANK	B07	2020	1.2870	-0.0467	-0.0605	0.0454	0.0043
20	PUNJAB AND SIND BANK	B08	2020	0.8135	-0.0646	0.0032	-0.0826	-0.0950
21	PUNJAB NATIONAL BANK	B09	2020	-1.0337	0.0757	0.1640	0.0729	0.0421
22	STATE BANK OF INDIA	B10	2020	15.7242	0.0768	-0.0239	0.0684	0.1082
23	UCO BANK	B11	2020	-0.4351	0.1383	0.0080	0.0252	-0.0222
24	UNION BANK OF INDIA	B12	2020	-0.0155	0.1041	0.2676	0.1162	0.0851
25	BANK OF BARODA	B01	2019	-1.1755	0.0974	0.2824	0.0681	0.0636
26	BANK OF INDIA	B02	2019	-0.0756	0.0444	0.0869	0.0330	0.0072
27	BANK OF MAHARASHTRA	B03	2019	3.2076	-0.0088	0.1796	0.0605	0.0197

28	CANARA BANK	B04	2019	-1.0819	0.1039	0.0075	0.1223	0.1376
29	CENTRAL BANK OF INDIA	B05	2019	0.1118	-0.0546	-0.0017	0.0199	0.0231
30	INDIAN BANK	B06	2019	-0.7514	0.0495	0.1268	0.0776	0.1300
31	INDIAN OVERSEAS BANK	B07	2019	-0.3972	0.0242	0.1717	0.0243	0.0427
32	PUNJAB AND SIND BANK	B08	2019	-0.2712	0.0976	0.1335	-0.0445	-0.0337
33	PUNJAB NATIONAL BANK	B09	2019	-0.1883	0.0312	-0.0202	0.0113	0.0520
34	STATE BANK OF INDIA	B10	2019	-1.1338	0.0721	-0.0039	0.0829	0.0933
35	UCO BANK	B11	2019	-0.0254	0.0471	-0.0177	0.0675	0.0890
36	UNION BANK OF INDIA	B12	2019	-0.4373	0.0232	-0.0167	0.0156	0.0200
37	BANK OF BARODA	B01	2018	-2.7437	0.0191	-0.0756	0.0276	-0.0253
38	BANK OF INDIA	B02	2018	2.8776	-0.0492	-0.0234	-0.0269	-0.0357
39	BANK OF MAHARASHTRA	B03	2018	-0.1422	-0.0456	-0.0173	0.0083	0.0271
40	CANARA BANK	B04	2018	-4.6818	-0.0366	0.1353	0.0343	0.0366
41	CENTRAL BANK OF INDIA	B05	2018	1.1068	-0.0255	0.0190	-0.0151	0.0004
42	INDIAN BANK	B06	2018	-0.1475	0.0180	-0.0549	0.1022	0.0863
43	INDIAN OVERSEAS BANK	B07	2018	0.8693	-0.0489	-0.0395	0.0172	0.0402
44	PUNJAB AND SIND BANK	B08	2018	-4.6647	-0.0343	-0.0209	0.1662	0.1782
45	PUNJAB NATIONAL BANK	B09	2018	-10.1881	0.0025	0.0030	0.0536	0.0237
46	STATE BANK OF INDIA	B10	2018	4.0955	0.0696	-0.1373	0.1187	0.1267
47	UCO BANK	B11	2018	1.3933	-0.1803	0.0073	-0.0676	-0.0980
48	UNION BANK OF INDIA	B12	2018	-10.4005	-0.0024	-0.0210	0.0708	0.0809
49	BANK OF BARODA	B01	2017	-1.2520	-0.0190	-0.0948	0.0174	0.0304
50	BANK OF INDIA	B02	2017	-0.7492	-0.0067	-0.0221	0.0064	0.0317
51	BANK OF MAHARASHTRA	B03	2017	-14.6173	-0.0367	-0.0649	-0.0112	-0.0006
52	CANARA BANK	B04	2017	-1.3824	-0.0404	-0.0452	0.0117	-0.0103
53	CENTRAL BANK OF INDIA	B05	2017	0.7166	-0.0123	-0.0177	0.0894	0.1124
54	INDIAN BANK	B06	2017	0.9002	-0.0263	-0.0571	0.0302	-0.0155
55	INDIAN OVERSEAS BANK	B07	2017	0.1887	-0.1063	-0.0586	-0.0921	-0.0511
56	PUNJAB AND SIND BANK	B08	2017	-0.4091	-0.0632	-0.0458	-0.0698	-0.0744
57	PUNJAB NATIONAL BANK	B09	2017	-1.3261	0.0295	0.1749	0.0558	0.0996
58	STATE BANK OF INDIA	B10	2017	-1.1171	0.0538	2.4285	0.1012	0.1321
59	UCO BANK	B11	2017	-0.3434	-0.0915	-0.0190	-0.0618	-0.0348
60	UNION BANK OF INDIA	B12	2017	-0.5965	0.0314	-0.0291	0.0987	0.0773
61	BANK OF BARODA	B01	2016	-2.5460	0.0086	1.1182	-0.0857	-0.0949
62	BANK OF INDIA	B02	2016	-4.4713	-0.0710	0.4037	-0.0396	-0.0604
63	BANK OF MAHARASHTRA	B03	2016	-0.7784	0.0212	0.1737	0.0936	0.1291
64	CANARA BANK	B04	2016	-2.0113	-0.0163	0.0064	-0.0195	-0.0161
65	CENTRAL BANK OF INDIA	B05	2016	-3.3216	-0.0239	0.5276	-0.0278	0.0340
66	INDIAN BANK	B06	2016	-0.3346	-0.0156	0.1120	-0.0068	-0.0094
67	INDIAN OVERSEAS BANK	B07	2016	5.3471	-0.0059	0.2983	-0.0438	-0.0918
68	PUNJAB AND SIND BANK	B08	2016	1.7219	0.0055	0.1201	0.0317	0.0345

69	PUNJAB NATIONAL BANK	B09	2016	-2.2602	-0.0066	0.4276	0.0738	0.0708
70	STATE BANK OF INDIA	B10	2016	-0.3102	0.0492	0.1327	0.1024	0.0658
71	UCO BANK	B11	2016	-3.4124	-0.0748	1.5391	-0.0236	-0.0525
72	UNION BANK OF INDIA	B12	2016	-0.2629	-0.0223	0.4274	0.0304	0.0509
73	BANK OF BARODA	B01	2015	-0.3008	0.0196	-0.0176	0.0129	0.0142
74	BANK OF INDIA	B02	2015	-0.4049	0.0733	-0.0333	0.0258	0.0598
75	BANK OF MAHARASHTRA	B03	2015	0.1515	0.0491	-0.0233	0.0563	0.0311
76	CANARA BANK	B04	2015	-0.0719	-0.0699	-0.1239	-0.0673	-0.0570
77	CENTRAL BANK OF INDIA	B05	2015	-1.4688	0.0486	-0.0137	0.0520	0.0393
78	INDIAN BANK	B06	2015	-0.1908	-0.0336	-0.0553	-0.0390	-0.0270
79	INDIAN OVERSEAS BANK	B07	2015	-1.7293	0.0134	-0.0702	0.0036	0.0425
80	PUNJAB AND SIND BANK	B08	2015	-0.6313	-0.0194	-0.0937	-0.0552	-0.0651
81	PUNJAB NATIONAL BANK	B09	2015	-0.1376	0.0283	-0.0222	0.0321	0.0458
82	STATE BANK OF INDIA	B10	2015	0.1456	0.0665	0.1301	0.0799	0.0716
83	UCO BANK	B11	2015	-0.2786	0.0464	0.0048	-0.0151	0.0287
84	UNION BANK OF INDIA	B12	2015	-0.0040	0.0495	-0.0250	0.0229	0.0094
85	BANK OF BARODA	B01	2014	-0.1117	-0.0203	-0.0231	0.0565	0.0522
86	BANK OF INDIA	B02	2014	-0.0849	0.0905	0.8585	0.1675	0.1516
87	BANK OF MAHARASHTRA	B03	2014	-0.5362	0.1142	-0.0768	0.0638	0.1300
88	CANARA BANK	B04	2014	-0.3336	-0.0833	0.8211	-0.0636	-0.0720
89	CENTRAL BANK OF INDIA	B05	2014	-2.1701	0.0532	-0.0177	0.0154	-0.0012
90	INDIAN BANK	B06	2014	-0.3220	0.0128	0.6045	0.0637	0.0573
91	INDIAN OVERSEAS BANK	B07	2014	-0.0581	-0.0257	0.2520	-0.0023	0.0014
92	PUNJAB AND SIND BANK	B08	2014	-0.2470	-0.0773	0.0092	-0.0022	0.0191
93	PUNJAB NATIONAL BANK	B09	2014	-0.3359	-0.0222	-0.0393	0.0840	0.0874
94	STATE BANK OF INDIA	B10	2014	-0.2887	0.0432	0.0502	0.0387	0.0454
95	UCO BANK	B11	2014	1.2026	-0.0045	0.0759	0.0851	0.0371
96	UNION BANK OF INDIA	B12	2014	-0.2872	0.0541	-0.0458	0.0279	0.0235
97	BANK OF BARODA	B01	2013	-0.1832	0.0708	-0.0438	0.1164	0.1238
98	BANK OF INDIA	B02	2013	-0.0449	0.0434	-0.0368	0.0948	0.1161
99	BANK OF MAHARASHTRA	B03	2013	0.6181	0.2299	1.1844	0.1778	0.1314
100	CANARA BANK	B04	2013	-0.1570	0.0620	-0.0347	0.0619	0.0484
101	CENTRAL BANK OF INDIA	B05	2013	0.7782	0.0695	0.0135	0.0896	0.0760
102	INDIAN BANK	B06	2013	-0.1509	0.0578	-0.0275	0.0801	0.1026
103	INDIAN OVERSEAS BANK	B07	2013	-0.5118	0.0461	-0.0428	0.0068	0.0239
104	PUNJAB AND SIND BANK	B08	2013	-0.3162	0.0209	-0.0500	0.0042	0.0181
105	PUNJAB NATIONAL BANK	B09	2013	-0.0602	0.0959	0.0244	0.0106	-0.0027
106	STATE BANK OF INDIA	B10	2013	0.0936	0.0723	0.1648	0.0997	0.0862
107	UCO BANK	B11	2013	-0.4908	0.0365	0.0095	0.0051	0.0284
108	UNION BANK OF INDIA	B12	2013	0.1004	0.0743	-0.0328	0.0848	0.0785

<u>Appendix B - Published Papers</u>

Appendix C- Author 's Bio-Data