

Study on Non-Performing Assets of Public Sector Banks

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Abstract- The reforms in Indian banking sector since 1991 is deliberated mostly in terms of the significant measures that were implemented in order to develop a more vibrant, healthy, stable and efficient banking sector in India. The effect of a highly regulated banking environment on asset quality, productivity and performance of banks necessitated the reform process and resulted the incorporation of prudential norms for income recognition, asset classification and provisioning and capital adequacy norms, in line with international best practices. The improvements in asset quality and a reduction in non-performing assets were the primary objective enunciated in the reform measures. In this context, the present research critically evaluates the trend in movement of nonperforming assets of public sector banks in India during the period 2000-01 to 2011-12, thereby facilitates an evaluation of the effectiveness of NPA management in the post-millennium period. The non-performing assets is not a function of loan/advance alone, but is influenced by other bank performance indicators and also by the macroeconomic variables. In addition to explaining the trend in the movement of NPA, this research also explained the moderating and mediating role of various bank performance and macroeconomic indicators on incidence of NPA.

I. INTRODUCTION

The banking sector is a keystone of any financial system. The smooth functioning of the banking sector ensures the healthy condition of an entire economy. In the process of accepting deposits and lending, loans banks create credit. The funds received from the borrowers by way of interest on loan and repayments of principal are recycled for raising resources. However, building up of non-performing assets (NPAs) disrupts this flow of credit. It hampers credit growth and affects the profitability of the banks as well. NPAs are the leading indicators to judge the

performance of the banking sector. As per Reserve Bank of India (RBI) reports on November 2018, the gross amount of poor-quality loans is in excess of Rs 9 lakh crores, which shows the severe impact it has on lending practices of banks and their liquidity positions. This growth is a result of quadrupling during the past five years, which shows the poor practice of banks with regard to lending. The main source of income of banks is through the interest earned on loans and advances and repayment of the principal. If such assets fail to generate income, then they are classified as non-performing assets (NPA). According to the Reserve Bank of India, NPA is defined as a credit facility in respect of which the interest and/or instalment of principal is “past due” for a specified period. Generally, if the loan payments have not been made for a period of 90 days, the asset is classified as non-performing asset.

The proportion of net non-performing resources for net advances (NPAs) is a decent marker for deciding the credit nature of the banks. Generally, a negative connection between the dimension of efficiency and NPAs is normal since lower of this proportion encourage higher efficiency level for the banks in India and despite what might be expected, increment in NPAs dependably makes issue for the successful tasks of the banks over the period and there is no speedy obsession for this. There have been a few and compelling measures created and attempted by the RBI convenient and ceaselessly to control the issues identified with NPAs. For example, there have been presentation of Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002 along with the Asset Reconstruction Company foundation to deal with the issues identified with NPAs rapidly and opportune by banks. The past examinations have joined that banks in various economies have encountered tumble down because of the bigger nearness of NPAs and have consequently clarified the disappointment of money related

foundations over the period. The board estimates for the banks over the timeframe thusly recommends that the dimension of financial efficiency decreases with decrease in the proportion of non-performing resources for net advances. It has been noticed that there exists positive and measurably critical connection among NPAs and cost inefficiency and related parts, i.e., higher the proportion of non-performing advantages for net advances, higher will be the dimension of inefficiency among the banks in Indian managing an account area. Subsequently, banks need to recoup awful resources opportune and keep the nonstop check over the non performing resources and characteristic towards better and sound hazard the executives rehearses which assist manages an account with maintaining their monetary record in successful way and have low nearness of NPAs over the timeframe. The keeps money with poor corporate governance and the executive's quality could lead towards increment in operational expenses and non-performing credits. In this manner banks need to look in additionall the board endeavors to handle the issue of non-performing resources. The discoveries of our investigation are comparative with the investigations of which featured that the dimension of cost inefficiency have been high because of the nearness of more non-performing resources and the proportion for issue advances have been on higher side, in this manner, demonstrating the nearness of banks in various economies working a long way from the best practice outskirts.

II. LITERTURE REVIEW

Das et al., (2016) experimentally examined the execution of Indian commercial managing an account amid the post change period 1992– 2002 utilizing DEA. Three distinct approaches to be specific; intermediation approach, esteem included approach and working approach have been utilized to separate how productivity scores shift with changes in data sources and yields. The analysis connects the variety in determined efficiencies to a lot of factors, i.e., bank estimate, possession, capital sufficiency proportion, non-performing credits and the executives quality. A multivariate analysis dependent on the logit display recommend that medium-sized open sector banks performed well and were bound to work at more elevated amounts of specialized productivity. A cozy

relationship was seen among productivity and soundness as dictated by bank's capital sufficiency proportion. The exact outcomes additionally demonstrated that technically increasingly effective banks were having less non performing advances. Raojibhai (2016) endeavored to conquer any hindrance between ID of productivity demonstrating factors independently for all the three sectors. Thus 23 factors were gathered under three factors specifically, productivity factors identified with per branch, proficiency factors identified with activities and effectiveness factors affecting extreme benefits. Out of the booked commercial banks, five banks from every sector were chosen as delegate bets based on size of stores for the year 2006. The 'per branch' sub-factors impact fundamentally the general productivity of open sector banks. Proficiency factors identified with per branch don't assume critical job in affecting the productivity of outside sector banks.

Eljelly (2013) investigated the determinants of productivity of Islamic banks in Sudan, one of only a handful couple of nations that have add up to Islamic monetary and keeping money frameworks. The paper found that just the interior factors of these banks significantly affect bank's gainfulness as estimated by profit for resources (ROA), return on value (ROE) and net financing edge (MARG). All the more explicitly cost, liquidity and size of the bank were found to have positive and significant consequences for benefit. Be that as it may, outer macroeconomic factors were delegated excess and have no significant impacts on benefit. Yasser et al., (2013) tried the execution of Indonesian banks in the most-steady time frame, 2015– 2017, subsequent to having the most exceedingly terrible emergency in the Indonesian bank's history, the Asian Financial Crisis 1997– 1998. By utilizing ROA, ROE and net premium pay to add up to resource (NIITA) as the intermediaries for bank execution and non performing credit (NPL) as the intermediary for bank productivity, the study examined 25 Indonesian banks for three back to back years and connected multivariate relapse analysis to test the proposed theories. The outcomes uncovered the bank qualities assume essential jobs to decide the bank's execution estimation; anyway these factors have less impact on the bank effectiveness estimation. Guillén et al., (2014) built up a model to gauge the determinants of Latin American bank's productivity

and attempted to comprehend the reasons why banks were hesitant to diminish their loan cost spreads notwithstanding when change in intensity in the money related framework was progressing. By utilizing DEA analysis to all the more likely endeavor the data of a few factors in the meantime for 200 banks situated in Argentina, Bolivia, Brazil, Costa Rica, Ecuador, El Salvador, Mexico, Nicaragua, Paraguay, Peru, Uruguay and Venezuela, they discovered that bank's benefits became reliably over the ordinary levels of benefits balanced by risk. The outcomes demonstrated that Latin America banks have been benefitting from oligopolistic position in burden to their customers specifically and entire economy when all is said in done.

Taking a gander at the general situation of investigation, it has been seen that fundamentally, the wellspring of inefficiency is basically allocative inefficiency as opposed to specialized inefficiency. In this manner, saving money division in India needs to acquire greatest yield from a given arrangement of inputs, and utilize the inputs in ideal extents (given their separate costs and generation innovation) so as to work on the proficient wilderness. The conceivable purpose behind the relative increment in the dimension of allocative efficiency is the high variances in factor costs because of ceaseless swelling, weight of innovative upgradations, keeping the view over working of more branches after mergers and acquisitions, vulnerability about the costs of inputs, wasteful basic leadership (Isik and Hassan, 2002), inert limit and staff redundancies of open part banks, political and social protections from pick diverse blend of inputs (Havrylchuk, 2005), stringent administrative limitations basically in the region of keeping up the capital ampleness proportion according to Basel standards (I, II and III) amid the post-changes years and the expansion in value market to raise reserves have prompted contortions in procedure of apportioning the assets in ideal way in the Indian saving money industry. Hence the examination shows that the decrease pattern of the allocative efficiency for the banks' balance the upward patterns of specialized efficiency, and the equivalent is observed to be the mindful factor for the humble development of cost efficiency in the Indian keeping money division amid post-deregulation period. The outcomes from Tobit demonstrate shows that (I) the benefit,

correspondence, need part progresses, staff profitability, net-premium edge, piece of the overall industry and inefficiency have negative effect on the dimension of cost inefficiency (ii) ad costs, bank enhancement, the executives soundness, measure, non performing resources and inefficiency are decidedly connected with the dimension of in general inefficiency (iii) possession have impact over the dimension of efficiency and remote division banks seems more proficient than open and private segment banks. The observational confirmations uncovers better execution of remote segment banks and this may be a direct result of their techno clever tasks in the created nations and following the comparable innovation in the creating economies like India. Such innovative methodologies have made the field advantage in the creating economies where the local banks are moderately less acquainted with the cutting edge innovation. Likewise, while researching the connection between the dimension of inefficiency and the general population and private proprietorship gatherings, nearness of positive and measurably critical estimates for the coefficients have been found. This infers the dimension of specialized inefficiency of the banks related with open and private area proprietorship expanded amid post-deregulation period. The outcomes recommend that the general population and private part banks in the Indian keeping money industry are working in efficient and business premise. Along these lines it affirms a solid linkage between the dimension of efficiency and proprietorships in the Indian household keeping money industry. Likewise, the examination presumed that more elevated amount of cost efficiency is fundamentally disclosed by more noteworthy introduction to correspondence costs, proportion of net premium edge to add up to resources and bank broadening as far as other salary for banks in Indian managing an account division amid post-deregulation period.

III. HISTORY OF BANKING IN INDIA

Banking in India forms the base for the economic development of the country. Major changes in the banking system and management have been seen over the years with the advancement in technology, considering the needs of people. The History of Banking in India dates back before India got

independence in 1947 and is a key topic in terms of questions asked in various Government exams. In this article, we shall discuss in detail the evolution of the banking sector in India.

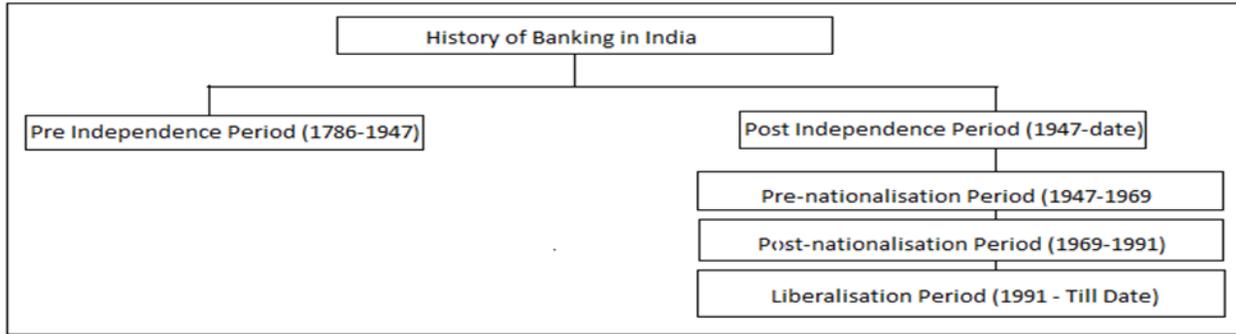
The banking sector development can be divided into three phases:

Phase I: The Early Phase which lasted from 1770 to

1969

Phase II: The Nationalisation Phase which lasted from 1969 to 1991

Phase III: The Liberalisation or the Banking Sector Reforms Phase which began in 1991 and continues to flourish till date



• Pre-Independence Period (1786-1947)

The first bank of India was the “Bank of Hindustan”, established in 1770 and located in the then, Indian capital, Calcutta. However, this bank failed to work and ceased operations in 1832. During the Pre-Independence period over 600 banks had been registered in the country, but only a few managed to survive. Following the path of Bank of Hindustan, various other banks were established in India. They were:

- The General Bank of India (1786-1791)
- Oudh Commercial Bank (1881-1958)
- Bank of Bengal (1809)
- Bank of Bombay (1840)

• Bank of Madras (1843)

During the British rule in India, The East India Company had established three banks: Bank of Bengal, Bank of Bombay and Bank of Madras and called them the Presidential Banks. These three banks were later merged into one single bank in 1921, which was called the “Imperial Bank of India.”

The Imperial Bank of India was later nationalised in 1955 and was named The State Bank of India, which is currently the largest Public sector Bank.

Given below is a list of other banks which were established during the Pre-Independence period:

Pre-Independence Banks in India	
Bank Name	Year of Establishment
Allahabad Bank	1865
Punjab National Bank	1894
Bank of India	1906
Central Bank of India	1911
Canara Bank	1906

If we talk of the reasons as to why many major banks failed to survive during the pre-independence period, the following conclusions can be drawn:

- Indian account holders had become fraud-prone
- Lack of machines and technology
- Human errors & time-consuming
- Fewer facilities
- Lack of proper management skills

Following the Pre-Independence period was the post-independence period, which observed some significant changes in the banking industry scenario and has till date developed a lot.

- Post-Independence Period (1947-1991)
- At the time, when India got independence, all the major banks of the country were led privately which was a cause of concern as the people belonging to rural areas were still dependent on money lenders for financial assistance.

With an aim to solve this problem, the then Government decided to nationalise the Banks. These banks were nationalised under the Banking Regulation Act, 1949. Whereas, the Reserve Bank of India was nationalised in 1949.

Following it was the formation of State Bank of India in 1955 and other 14 banks were nationalised between the time duration of 1969 to 1991. These were the banks whose national deposits were more than 50 crores.

Given below is the list of these 14 Banks nationalised in 1969:

1. Allahabad Bank
2. Bank of India
3. Bank of Baroda
4. Bank of Maharashtra
5. Central Bank of India
6. Canara Bank
7. Dena Bank
8. Indian Overseas Bank
9. Indian Bank
10. Punjab National Bank

11. Syndicate Bank
12. Union Bank of India
13. United Bank
14. UCO Bank

In the year 1980, another 6 banks were nationalised, taking the number to 20 banks. These banks included:

1. Andhra Bank
2. Corporation Bank
3. New Bank of India
4. Oriental Bank of Comm.
5. Punjab & Sind Bank
6. Vijaya Bank

Apart from the above mentioned 20 banks, there were seven subsidiaries of SBI which were nationalised in 1959:

1. State Bank of Patiala
2. State Bank of Hyderabad
3. State Bank of Bikaner & Jaipur
4. State Bank of Mysore
5. State Bank of Travancore
6. State Bank of Saurashtra
7. State Bank of Indore

All these banks were later merged with the State Bank of India in 2017, except for the State Bank of Saurashtra, which was merged in 2008 and State Bank of Indore, which was merged in 2010.

Impact of Nationalisation

There were various reasons why the Government chose to nationalise the banks. Given below is the impact of Nationalising Banks in India:

- This lead to an increase in funds and thereby increasing the economic condition of the country
- Increased Efficiency
- Helped in boosting the rural and agricultural sector of the country
- It opened up a major employment opportunity for the people
- The Government used profit gained by Banks for the betterment of the people
- The competition was decreased, and work efficiency had increased

This post-Independence phase was the one that led to major developments in the banking sector of India and also in the evolution of the banking sector.

Liberalisation Period (1991-Till Date)

Once the banks were established in the country, regular monitoring and regulations need to be followed to continue the profits provided by the banking sector. The last phase or the ongoing phase of the banking sector development plays a significant role.

To provide stability and profitability to the Nationalised Public sector Banks, the Government decided to set up a committee under the leadership of Shri. M Narasimham to manage the various reforms in the Indian banking industry.

The biggest development was the introduction of Private sector banks in India. RBI gave license to 10 Private sector banks to establish themselves in the country. These banks included:

1. Global Trust Bank
2. ICICI Bank
3. HDFC Bank
4. Axis Bank
5. Bank of Punjab
6. IndusInd Bank
7. Centurion Bank
8. IDBI Bank
9. Times Bank
10. Development Credit Bank

The other measures taken include:

- Setting up of branches of the various Foreign Banks in India
- No more nationalisation of Banks could be done
- The committee announced that RBI and Government would treat both public and private sector banks equally
- Any Foreign Bank could start joint ventures with Indian Banks
- Payments banks were introduced with the development in the field of banking and technology
- Small Finance Banks were allowed to set their branches across India

- A major part of Indian banking moved online with internet banking and apps available for fund transfer

Thus, the history of banking in India shows that with time and the needs of people, major developments have been done in the banking sector with an aim to prosper it.

IV. PUBLIC SECTOR BANK

Banks are the most important financial institutions in the world. Thanks to the banking system, all financial transactions possible without much hassle. People can save their money in banks, take loans, and transfer funds easily through bank accounts. However, all banks are not the same. According to their stakeholders, banks can be classified into two types. These are Public sector banks and private sector banks. Even though both types of banks offer similar services to the public, but there are some major differences in-between them. Let's take a closer look and see what is public sector bank and how does it work. Public sector banks are those banks where the government holds more than 50% ownership. With these banks, the government regulates the financial guidelines. Because of government ownership, most depositors believe that their money is more secured in public sector banks. As a result, most public sector banks have a large customer base.

For example, The State bank of India (SBI) is the largest public sector bank in India. In this bank, the Indian government holds more than 63% share. A large part of the remaining share is also traded in the Indian stock market.

Relative to other banks, the employees of public sector banks enjoy more job security. They also enjoy other perks like pension after retirement. For this reason, many of these employees are reluctant to give their best service. As a result, the rate of loan defaulter is much higher in public sector banks. The promotion in the public sector banks is based on seniority, which demotivate many employees.

Most public sector banks offer less customized service to customers. As a result, Customer complaint due to poor service is very common in public sector banks. However, public sector banks offer more interest rate

to the customer. Customers can also get different loans with a small interest rate.

The banking system in India consists of Commercial Banks and Cooperatives Banks of which the Commercial Banks account for more than 90 percent of the banking system's assets. Based on the ownership pattern, the Commercial Banks can be grouped into three type i.e. (i) State owned or Public Sector Banks (PSBs)- that is the State Bank of India and its subsidiaries and the nationalized banks (there

are 27 PSBs functioning in the country as on 31.3.2014), (ii) Private Banks under Indian ownership, and (iii) Foreign Banks operating in India⁷. The PSBs dominated the banking business in the country. In 1990-91, they accounted for as much as 91 percent of the total assets-with Private Indian Banks with 3 percent and Foreign Banks with 6 percent. After entry of a number of new Private Indian Banks in the mid-1990s, the Indian Banking Industry continued to be dominated by the PSBs.

V. COMPOSITION OF NPAs OF PUBLIC SECTOR BANKS

Bank Group/Years	PRIORITY SECTOR		NON-PRIORITY SECTOR		PUBLIC SECTOR		TOTAL
	Amount	Percentage	Amount	Percentage	Amount	Percentage	Amount
Nationalised Banks	Amount	Percentage	Amount	Percentage	Amount	Percentage	
2017	125729	24.8	381193	75.2	14719.9	2.9	506922
2016	96903	23.18	321085	76.82	1763	0.42	417988
2015	70934	34.61	133767	65.26	258.92	0.13	204959
2014	53750	36.45	93567.2	63.46	130.35	0.09	147448
2013	40834	40.16	59900.7	58.91	948.2	0.93	101683
2012	32424	46.96	35555.5	51.49	1068.14	1.55	69047.6
2011	24620	55.61	19409.7	43.84	242.36	0.55	44272.1
2010	19567	53.76	16523.1	45.4	304.61	0.84	36394.7
2009	15754	59.35	10667.9	40.19	121.36	0.46	26543.3
2008	15972	63.96	8563.42	34.29	438.41	1.76	24973.8
2007	15344	58.63	10340.4	39.51	487.32	1.86	26171.7
2006	14922	51.78	13226.9	45.9	668.44	2.32	28817.4
2005	15336	46.75	17062.3	52.01	405.66	1.24	32804
2004	16705	47.74	17895	51.14	390	1.11	34990
2003	16886	47.1	18402	51.33	561	1.56	35849
State Bank of India &							
YEAR	Amount	Percentage	Amount	Percentage	Amount	Percentage	Amount
2017	35212.6	19.8	142598	80.2	746.11	0.42	177811
2016	28906	23.7	93062	76.3	1718	1.41	121968
2015	25676	34.93	47832	65.07	0	0	73508
2014	26149	32.76	53667.6	67.24	0	0	79816.6

2013	26442	42.12	36130.1	57.55	206.41	0.33	62778.5
2012	23356	48.44	23271	48.27	1587.86	3.29	48214.8
2011	15567	51.22	14825.7	48.78	0.23	0	30393
2010	10929	46.45	12590.5	53.51	9.25	0.04	23528.8
2009	8447	45.7	9859.91	53.35	175.71	0.95	18482.6
2008	8902	57.5	6444	41.62	135.91	0.88	15481.9
2007	7175	56.57	5262.67	41.49	245.03	1.93	12682.7
2006	7314	58.27	5051.64	40.25	186.53	1.49	12552.2
2005	6200	41.84	8431.42	56.9	186.27	1.26	14817.7
2004	7136	47.07	7803	51.47	220	1.45	15159
2003	8053	47.49	8379	49.41	526	3.1	16958

(Amount in ` Crore)

COMPOSITION OF NPAs OF PUBLIC SECTOR BANKS

Source : Department of Supervision, RBI.

Note: Data is inclusive of Domestic & Global Operations of Banks

Public Sector Banks	Amount	Percentage	Amount	Percentage	Amount	Percentage	Amount
2020	236212	36.66	408205	63.34	28516.6	4.43	644417
2019	197334	26.68	542207	73.32	13394.7	1.81	739541
2018	187511	20.94	708090	79.06	17388	1.94	895601
2017	160942	23.5	523791	76.5	15466	2.26	684732
2016	125809	23.3	414148	76.7	3482	0.64	539957
2015	96611	34.69	181598	65.21	258.92	0.09	278468
2014	79899	35.16	147235	64.79	130.35	0.06	227264
2013	67276	40.91	96030.8	58.39	1154.6	0.7	164461
2012	55780	47.57	58826.4	50.17	2656	2.27	117262
2011	40186	53.82	34235.5	45.85	242.59	0.32	74664
2010	30496	50.89	29113.7	48.58	313.86	0.52	59923.5
2009	24201	53.75	20527.8	45.59	297.07	0.66	45025.9
2008	24874	61.48	15007.4	37.1	574.32	1.42	40455.7
2007	22519	57.96	15603	40.16	732.35	1.88	38854.4
2006	22236	53.75	18278.6	44.18	854.96	2.07	41369.5
2005	21536	45.22	25493.7	53.53	591.93	1.24	47621.7
2004	23841	47.54	25698	51.24	610	1.22	50149
2003	24939	47.23	26781	50.71	1087	2.06	52807

CONCLUSION

The business of banking essentially involves intermediation-acceptance of deposits and channeling these deposits in to lending activities. Since the deposits received from the depositors have to be repaid to them by the bank, they are known as banks' 'Liabilities' and as the loan given to the borrowers are to be received back from them, they are termed as banks' 'Assets' so assets are banks' loans and advances¹. In the traditional banking business of lending financed by deposits from customers, Commercial Banks are faced with the risk of default by the borrower in the payment of either principal or interest. This risk in banking parlance is termed as 'Credit Risk' and accounts where payment of interest and /or repayment of principal is not forthcoming are treated as Non-Performing Assets², as per the Reserve Bank of India, an asset, including a leased asset, becomes non-Performing when it ceases to generate income for the bank. Existence of Non-Performing Asset is an integral part of banking and every bank has some Non-Performing Assets in its advance portfolio. However, the high level of NPA is a cause of worry to any financial institution.

REFERENCES

[1] Arora, S., & Kaur, S. 2008. Diversification in Banking Sector in India: Determinants of Financial Performance. *The Indian Journal of Commerce*, 1 (3): 13-21

[2] Bakshi, S. 2013. Corporate Governance in Transformation Times. *IBA Bulletin*, 25 (3): 65-70

[3] BHADRAPPA HARALAYYA, P.S. AITHAL, STUDY ON PRODUCTIVE EFFICIENCY OF BANKS IN DEVELOPING COUNTRY, *International Research Journal of Humanities and Interdisciplinary Studies* (www.irjhis.com) ISSN: 2582-8568, Volume: 2, Issue: 5, Year: May 2021, Page No: 184-194. Available at: <http://irjhis.com/paper/IRJHIS2105025.pdf>

[4] Bhadrappa Haralayya; P. S. Aithal. "Study on Model and Camel Analysis of Banking" *Iconic Research and Engineering Journals* Volume 4 Issue 11 May 2021 Page 244-259. Available at

<https://irejournals.com/paper-details/1702750>

[5] B. Haralayya and P. S. Aithal, "A Study on Structure and Growth of Banking Industry in India", *International Journal of Research in Engineering, Science and Management* ISSN (Online): 2581-5792 Volume 4, Issue 5, May 2021. Page no 225–230. Available at: <https://www.journals.resaim.com/ijresm/article/view/778/749>.

[6] Bhadrappa Haralayya, Retail Banking Trends in India, *International Journal of All Research Education and Scientific Methods (IJARESM)* ISSN:2455-6211, Volume: 9, Issue: 5, Year: May 2021, Page No: 3730-3732. Available At http://www.ijaresm.com/uploaded_files/document_file/Bhadrappa_Haralayyaqscw.pdf

[7] BHADRAPPA HARALAYYA, P.S. AITHAL, FACTORS DETERMINING THE EFFICIENCY IN INDIAN BANKING SECTOR: A TOBIT REGRESSION ANALYSIS", *International Journal of Science & Engineering Development Research* (www.ijedr.org) ISSN:2455-2631, Vol.6, Issue 6, page no.1 - 6, June-2021, Available: <http://www.ijedr.org/papers/IJEDR2106001.pdf>

[8] BHADRAPPA HARALAYYA, P.S. AITHAL, STUDY ON PRODUCTIVE EFFICIENCY OF FINANCIAL INSTITUTIONS, *International Journal of Innovative Research in Technology* ISSN: 2349-6002, Volume 8, Issue 1, Page no: 159 – 164, June-2021 Available: http://ijirt.org/master/publishedpaper/IJIRT151514_PAPER.pdf

[9] BHADRAPPA HARALAYYA, STUDY OF BANKING SERVICES PROVIDED BY BANKS IN INDIA, *International Research Journal of Humanities and Interdisciplinary Studies* (www.irjhis.com) ISSN: 2582-8568, Volume: 2, Issue: 6, Year: June 2021, Page No: 06-12, Available at: <http://irjhis.com/paper/IRJHIS2106002.pdf>.

[10] BHADRAPPA HARALAYYA, P.S. AITHAL, ANALYSIS OF BANK PERFORMANCE USING CAMEL APPROACH", *International Journal of Emerging Technologies and Innovative Research* (www.jetir.org | UGC and issn Approved), ISSN:2349-5162, Vol.8, Issue 5,

- page no 305-314, May-2021, Available at: <http://www.jetir.org/papers/JETIR2105840.pdf>
- [11] BHADRAPPA HARALAYYA, P.S. AITHAL, ANALYSIS OF BANK PRODUCTIVITY USING PANEL CAUSALITY TEST, Journal of Huazhong University of Science and Technology ISSN-1671-4512, Volume 50, Issue 6, Page no: 1 – 16, June-2021 Available at: <https://app.box.com/s/o71lh776opeypauvzucp9e sntjwur9zf>
- [12] BHADRAPPA HARALAYYA, P.S. AITHAL, INTER BANK ANALYSIS OF COST EFFICIENCY USING MEAN, International Journal of Innovative Research in Science, Engineering and Technology (IJIRSET) e-ISSN: 2319-8753, Volume 10, Issue 6, Page no: 6391-6397, June-2021 Available at: http://www.ijirset.com/upload/2021/june/97_INTER_NC1.pdf
- [13] BHADRAPPA HARALAYYA, P.S. AITHAL, ANALYSIS OF TOTAL FACTOR PRODUCTIVITY AND PROFITABILITY MATRIX OF BANKS BY HMTFP AND FPTFP, Science, Technology and Development Journal ISSN: 0950-0707, Volume 10, Issue 6, Page no: 190-203, June-2021 Available at: <http://journalstd.com/gallery/23-june2021.pdf>
- [14] Bhadrappa Haralayya, P S Aithal, "ANALYSIS OF BANKS TOTAL FACTOR PRODUCTIVITY BY DISAGGREGATE LEVEL", International Journal of Creative Research Thoughts (IJCRT), ISSN:2320-2882, Volume.9, Issue 6, pp.b488-b502, June 2021, Available at [:http://www.ijcrt.org/papers/IJCRT2106187.pdf](http://www.ijcrt.org/papers/IJCRT2106187.pdf)
- [15] Kumar, S., & Gulati, R. 2011. Income-Generating Efficiency of Public Sector Banks in India: An application of Data Envelopment Analysis. *Arth Vijnana*, 11 (2): 103-126.
- [16] I, R., & Saluja, R. 2012. E-Banking: The Indian Scenario. *Asia Pacific Journal of Marketing & Management Review*, 1: 4-9
- [17] Lal, R.C. 2007. Banking Transformation through IT in India. *Journal of Commerce and Trade*, 2 (2) :46-48
- [18] Latha, K. 2012. Non-Performing Assets in Banks: An Analytical Study. *Business Analyst*, 23 Majumdar, U. S. 2000. *Universal Banking-A Bird's Eye View*. The Management Accountant, (II) :35. Malhotra, M. 2009. Banks and Capital Adequacy Ratio implications for Indian Economy. *The Management Accountant*.
- [19] Mathur, H. P. 2009. Indian Banking Challenges Ahead. *Yojna* , 2 : 45
- [20] Haralayya, Dr. Bhadrappa and Saini, Shrawan Kumar, An Overview on Productive Efficiency of Banks & Financial Institution (2018). *International Journal of Research*, Volume 05 Issue 12, April 2018, Available at SSRN: <https://ssrn.com/abstract=3837503>
- [21] Haralayya, Dr. Bhadrappa, Review on the Productive Efficiency of Banks in Developing Country (2018). *Journal for Studies in Management and Planning*, Volume 04 Issue 05, April 2018, Available at SSRN: <https://ssrn.com/abstract=3837496>
- [22] Basha, Jeelan and Haralayya, Dr. Bhadrappa, Performance Analysis of Financial Ratios - Indian Public Non-Life Insurance Sector (April 30, 2021). Available at SSRN: <https://ssrn.com/abstract=3837465>.
- [23] Haralayya, Dr. Bhadrappa, The Productive Efficiency of Banks in Developing Country with Special Reference to Banks & Financial Institution (April 30, 2019). Available at SSRN: <https://ssrn.com/abstract=3844432> or <http://dx.doi.org/10.2139/ssrn.3844432>
- [24] Haralayya, Dr. Bhadrappa, Study on Performance of Foreign Banks in India (APRIL 2, 2016). Available at SSRN: <https://ssrn.com/abstract=3844403> or <http://dx.doi.org/10.2139/ssrn.3844403>
- [25] Haralayya, Dr. Bhadrappa, E-Finance and the Financial Services Industry (MARCH 28, 2014). Available at SSRN: <https://ssrn.com/abstract=3844405> or <http://dx.doi.org/10.2139/ssrn.3844405>
- [26] Haralayya, Dr. Bhadrappa, E-payment - An Overview (MARCH 28, 2014). Available at SSRN: <https://ssrn.com/abstract=3844409> or <http://dx.doi.org/10.2139/ssrn.3844409>.