

Non-Performing Assets in India: A Comparative Analysis of Public and Private Sector Banks

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Abstract: All types of economic activities revolve around money and credit. Banks are institutions that primarily perform two types of functions, namely, accepting deposits to create a pool of savings from people and granting loans out of the funds received. The Indian banking system, like most banking systems in the world, is characterized by the coexistence of different ownership groups, public and private, and within private, domestic, and foreign. Since the beginning of 2000, the Indian economy has been experiencing a growth momentum, however, after the Global Financial Crisis (GFC) in 2008, this growth rate was accompanied by rising Non-Performing Assets (NPAs). Govt. introduced prudential norms and structural reforms like demonetization, GST from time to time, and recently various monetary policy reforms like moratorium during a pandemic. The present study examined the presence of NPAs in the Public Sector Banks (PSBs) and Private Sector Banks (PVBs) from 2005 to 2021. We further examined the NPA levels in the top five banks in both PSBs and PVBs based on total asset size as of 31st Mar 2021. We used the ANOVA test in the study to perform a comparison between the above-mentioned groups. We found that i) post-GFC 2008, there has been an increasing trend in NPAs of both PSBs & PVBs, and in PSBs it is more in terms of absolute numbers; ii) the ratio of GNPA over gross advances show that it was higher in PSBs as compared to PVBs except between 2008-2011. After this period, the GNPA ratio almost doubled or tripled in some cases as compared to PVBs. iii) A comparative analysis between NPAs of selected PSBs and PVBs, concludes that PSBs are more exposed to NPAs as compared to PVBs. There could be multiple reasons for this such as the twin-balance sheet problem, structural changes that the Govt would have taken, the govt. policies that have a direct impact on the financial sector, especially the nationalized banks, and advances granted by PSBs towards priority sector lending, which is mandated by the govt. for the PSBs to allocate funds for the economic development of the country through various sectors.

Keywords: Non-Performing Assets, Public Sector Banks, Private Sector Banks

1. Introduction

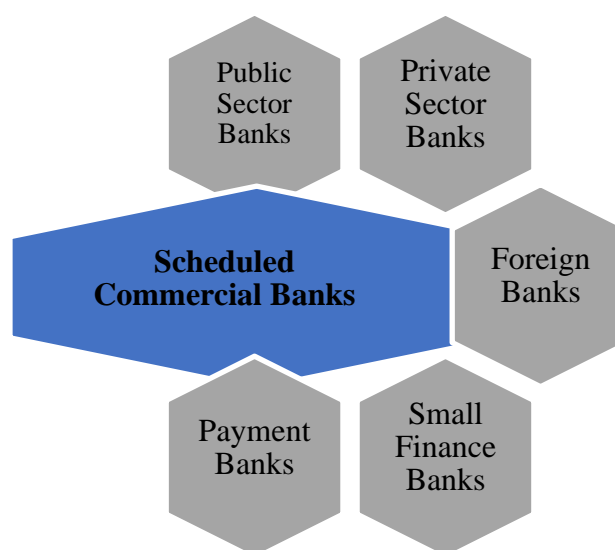
The banking system is vital to the preservation of the financial sector of the economy. The Indian banking system, like most banking systems in the world, is characterized by the coexistence of different ownership groups, public and private, and within private, domestic, and foreign. In India, Scheduled Commercial Banks (SCBs) comprise five types of banks namely, Public Sector Banks (PSBs), Private Sector Banks (PVBs), Foreign Banks (FBs), Small Finance Banks (SFBs), and Payments Banks (PBs). Apart from the first three types of scheduled commercial banks, the last two categories, small finance banks, and payments banks were recently introduced¹. The public-sector banks constitute the dominant role of commercial banks in India with 60.9 percent of the total

¹ The Reserve Bank released guidelines for licensing of Small Finance Banks and Payments Banks during 2014-15.

banks' deposits in 2022-23². Since the beginning of 2000, the Indian economy has experienced a growth momentum, however, this momentum was not smooth as it faced fluctuations which could be seen as 7.9 percent during 2003-08, 3.1 percent during 2008-09, 8.2 percent during 2009-11, 5.7 percent during 2011-14 and lastly 7.9 percent during 2014-17. Moreover, after the Global Financial Crisis (GFC) in 2008, this growth rate was also accompanied by the rising levels of NPAs in the scheduled commercial banks. In this paper, we will examine the trend and pattern of NPAs in PSBs and PVBs of SCBs and then perform a comparison study of NPAs between selected banks for the period 2005 to 2021.

Box.1

Classification of Scheduled Commercial Banks



2. Objective and Need of the Study

Since 2000, the Indian economy has faced various dynamic changes in terms of a high growth rate, the GFC 2008, structural changes like demonetization, and the Goods and Services Tax Act (GST) 2017. The objective is to study the pattern of NPAs bank group-wise and make a comparison bank-wise during the period 2005–2021. The present paper, therefore, tries to analyze the reasons for the variation in the NPAs across selected categories and suggestions as discussed by various researchers and scholars based on their studies.

3. Data and Methodology

The NPA data for bank-wise and bank-group-wise comparison has been obtained from the RBI website published during the period 2005–2021. Further, for the comparison of NPA between PSBs and PVBs, five banks from both categories have been chosen based on their total asset size as of 31st March 2021. The top five banks selected under the category PSBs are State Bank of India, Punjab National Bank, Bank of Baroda, Canara Bank, and Union Bank of India while under the PVBs category, HDFC Bank Ltd, ICICI Bank Ltd, Axis Bank Limited, Kotak Mahindra Bank Ltd and IndusInd Bank Ltd. have been selected.

ANOVA test means 'Analysis of Variance' test which is used to make a comparison between groups at the same time to determine a relationship between them. We will use the ANOVA test to compare GNPA to the Gross advance ratio of PSBs and PVBs bank-wise and bank-group-wise for selected PSBs and PVBs during the same period.

² <https://www.themirrorty.com/data/bank-deposits#:~:text=BANK%20GROUP-WISE%20DEPOSITS%201%2060.9%25%20of%20the%20deposits,4.9%25%20between%202013%20and%202022.%20...%20More%20it%20ems>

4. Literature Review

In India, before the bank nationalization in 1969, the banking system was largely in the hands of private ownership. However, in 1969 bank nationalization was done to achieve the objective of optimizing the social benefit and growing needs of people. As a result of bank nationalization, before banking reforms in 1991, banks catered to the need for planned development where the public sector held a dominant role in economic activity [7].

Until the mid-eighties, the management of NPA was left to the banks. In 1985, A Ghosh Committee on Final Account introduced a system of classification of assets which is called the 'Health Code System (HCS). This system classified the banks' advances into eight categories ranging from 1(satisfactory) to 8 (bad and doubtful debt). This classification of assets was necessary to handle the financial unsound banking sector and poor operational efficiency [8].

Despite this, HCS classification of assets was not in accordance with international standards. There arose the need for banking sector reform which happened in 1991-92, under the recommendation of the Narsimham Committee. According to Narsimham Committee-1 banks should classify their advances viz. (i) Standard Assets; (ii) Sub-standard assets; (iii) Doubtful assets (iv) Loss assets. Subsequent to this, prudential standards for revenue recognition, asset categorization, and provisioning were gradually implemented in 1992 to help the banks' advances portfolio transition to a more uniform and transparent published account (RBI).

A further tightening of prudential standards to improve the prevailing norms and bring them at par with the standards followed internationally was suggested by the Narasimham Committee II in 1998. They advised banks to classify assets as 'doubtful' if it falls in the sub-standard category for 18 months (RBI). According to RBI *"An asset becomes non-performing when it ceases to generate income for the bank. This was based on the concept of 'past due' i.e. when an asset remains outstanding for 30 days beyond the due date. In 2004, 90 days overdue norms have been made applicable to follow the international practices"*.

According to the Central Bank of India (RBI), NPAs are of two types, namely Gross Non-Performing Asset (GNPA) and Net Non-Performing Asset (NNPA) :

- (i) Gross NPA Ratio is the ratio of Gross NPAs over Gross Advances. It depicts the traits of the loans made by any bank.
- (ii) When the provisions are reduced from the GNPA's, they become Net NPAs. The actual pressure of banks is assessed through this ratio.

The generation of poor loans is not favourable for the banking sector as it builds up NPA in the balance sheet which disrupt the flow of credit and effect the credit growth, profitability and earning of the banks. As per RBI 31st March 2018, the gross amount of NPA was more than Rs. 10.35 Lakh Crores, about 85 percent of which are from PSBs [13]). It shows the severe impact on lending practices and liquidity positions of the banks. This growth is the result of quadrupling during the 2010-2017 [1]. As on 31st December 2021, Gross NPA came down to 7.73 Lakh Crore³.

Various research discloses the determinants for rising NPAs in India which can be summarised as; first, extraordinary credit boom during 2003-04, as credit booms are generally succeeded by stress in the banking system [14]; second, external factors such as global recession and slowdown in the domestic economy [8], [13]; third, decrease in global commodity prices coupled with relaxed lending norms, bad lending practices, overlapping laws, lapses due to diligence, mis-governance and policy paralysis [3].

³ <https://www.newindianexpress.com/business/2022/mar/29/gross-npas-down-to-rs-773-lakh-crore-due-to-transparent-recognition-of-stressed-assets-sitharaman-2435581.html#:~:text=NEW%20DELHI%3A%20Gross%20NPAs%20have%20reduced%20to%20Rs,the%20government%20informed%20the%20Rajya%20Sabha%20on%20Tuesday.>

5. Comparative Analysis of NPAs: Bank Group-wise

Empirical studies on SCBs describe the increasing trend of NPAs and suggested to initiate strict measures to be taken by banks to curb down this menace. Despite this, the growth rate of NPAs in PVBs is low as compared to PSBs [1], [2], [4], [5], [9]. PVBs have been able to keep this level low by practicing better NPA management strategies and financial ratios as compared to PSBs [6], [10].

Table 1: Gross NPAs of Scheduled Commercial Banks Since 2005-2021 (Amount in Crore)

Year	Public Sector Banks*	Private Sector Banks
2005	48399.37	8782.17
2006	41358.49	7810.76
2007	38968.38	9255.32
2008	40452.31	12997.42
2009	44957.04	16926.65
2010	59927.26	17639.97
2011	74663.89	18240.58
2012	117838.92	18767.81
2013	165005.70	21070.52
2014	228273.70	24542.42
2015	278467.92	34106.23
2016	539956.35	56185.69
2017	684732.28	93209.22
2018	895601.26	129335.24
2019	739541.00	183603.66
2020	678316.98	209568.15
2021	616615.55	200140.98

Source: RBI

***prior to 2018 Public Sector bank= State banks and Associate + Nationalized Banks**

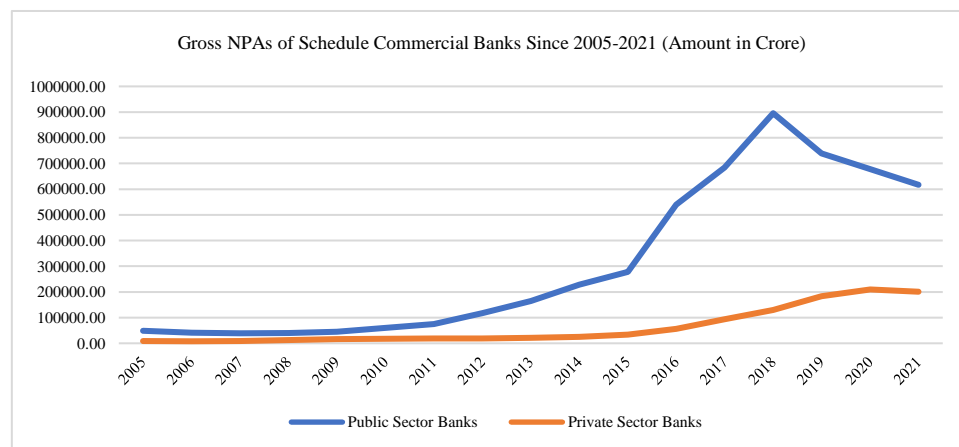


Figure: 1

Source: Authors' calculation based on Table 1

Table 1 and Figure 1 describe the GNPAs in both the sectors. This shows that there was an increasing trend of Gross NPA in both types of banking. In absolute numbers, there was a declining trend of NPAs in public sector banks till 2008, however, an increasing trend can be seen post-2008 many folds. On the other hand, in private sector banks there has been an increasing trend since the beginning. If we see Figure. 1 then we can say that after 2008, Gross NPA in PSBs shot up many folds compared to PVBs. PVBs started following PSBs from 2015 onwards. This shows that the impact of GFC 2008 is more in the PSBs as compared to PVBs. The reason for the declining pattern can be attributed to the “Government’s comprehensive 4R’s strategy consisting of recognition of NPAs transparently, resolution and recovering value from stressed accounts, recapitalizing Public Sector Banks (PSBs), and reforms in PSBs and the financial ecosystem to ensure a responsible and cleansystem [15]”.

Table 2 describes the GNPA as a percentage of gross advances between 2004-05 and 2020-21. We can see from Table 2 that the GNPA ratio was persistently higher in the PSBs compared to PVBs except during 2007-08 and 2010-11. After this period, the GNPA ratio in PSBs was two or three times what it was in PVBs. Reasons behind this could be the Twin-Balance Sheet problem and structural changes that took place in the second half of the second decade. This explains that any structural changes or policies implemented by the Govt. have a direct impact on the PSBs.

Table 2: Gross NPA as Percentage of Gross Advances		
Year	PSB	PVB
2004-05	5.6	2.8
2005-06	3.6	1.7
2006-07	2.7	1.9
2007-08	2.2	2.5
2008-09	2	3
2009-10	2.2	2.9
2010-11	2.2	2.3
2011-12	3	1.9
2012-13	3.6	1.8
2013-14	4.4	1.8
2014-15	5	2.1
2015-16	9.3	2.8
2016-17	11.7	4.1
2017-18	14.6	4.7
2018-19	11.6	5.3
2019-20	10.3	5.5
2020-21	9.1	4.9

Source: RBI

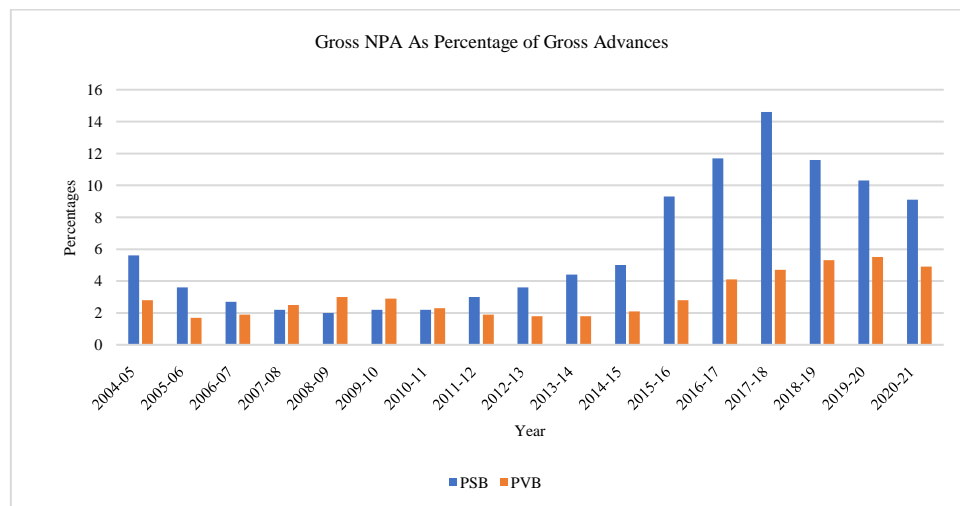


Figure: 2

Source: Authors' calculation based on Table 2

With the help of the ANOVA test, we will compare the GNPA ratio of PSBs and PVBs and test the following hypothesis:

Null Hypothesis: H_0 = There is no significant difference in GNPA ratio of PSBs and PVBs.

Alternative Hypothesis: H_A = There is a significant difference in GNPA ratio of PSBs and PVBs.

**ANOVA: Single Factor
SUMMARY**

<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
PSB	17	103.1	6.064706	16.94868
PVB	17	52	3.058824	1.738824

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	76.80029	1	76.80029	8.219429	0.007272	4.149097
Within Groups	299	32	9.34375			
Total	375.8003	33				

Result:

It is statistically significant since the calculated F value (8.219429) > critical value of F (4.17) from the table at a 5% level of Significance and p value $0.00727 < 0.05$. Therefore, reject the null hypothesis and it is concluded that there is a significant difference in GNPA ratio of PSBs and PVBs.

6. Comparative Analysis of NPAs: Bank-wise

In this section, a comparative analysis of the top five banks in the PSBs and PVBs categories will be performed. Table 3 below shows their total asset size as of 31st March 2021.

Table 3: Top 5 Banks based on their asset size as on 31st March 2021 (Amt. in Crore)			
PSBs	Total Assets	PVB	Total Assets
State Bank of India	45,34,429.63	HDFC Bank Ltd.	17,46,870.52
Punjab National Bank	12,60,632.62	ICICI Bank Limited	12,30,432.68
Bank of Baroda	11,55,364.77	Axis Bank Limited	9,96,118.42
Canara Bank	11,53,675.03	Kotak Mahindra Bank Ltd.	3,83,488.62
Union Bank of India	10,71,705.84	IndusInd Bank Ltd	3,62,972.75

Source: RBI

Table 4: Gross NPAs of selected PSBs as a percentage of Gross Advances from 2005 to 2021						
Year	State Bank of India	Punjab National Bank	Bank of Baroda	Canara Bank	Union Bank of India	Bank of India
2005	5.48	6.19	7.65	3.92	5.13	
2006	3.37	4.21	3.99	2.26	3.93	
2007	2.63	3.51	2.50	1.52	3.00	
2008	2.61	2.78	1.86	1.19	2.23	
2009	2.49	1.62	1.29	1.57	1.99	
2010	2.74	1.72	1.37	1.53	2.24	
2011	3.06	1.81	1.38	1.49	2.40	
2012	4.19	2.97	1.55	1.73	3.06	
2013	4.55	4.36	2.43	2.58	3.03	
2014	5.10	5.41	2.99	2.51	4.17	
2015	4.39	6.75	3.80	3.95	5.10	
2016	6.60	13.54	10.56	9.74	9.04	
2017	9.52	13.20	11.15	10.00	11.77	
2018	11.55	19.97	13.21	12.44	17.10	
2019	7.90	17.12	10.29	9.17	16.41	
2020	6.41	15.57	10.05	8.57	15.58	
2021	5.16	15.49	9.44	9.43	15.19	

Source: RBI

From Table 4, we can see all the PSBs had a GNPA ratio of more than 5 percent in 2005 then all had a decreasing trend till 2010. From 2010 all the PSBs show an increasing pattern till 2018 and the GNPA ratio is approximately

20 percent of gross advances in the case of Punjab National Bank and Union Bank of India. The rest of the three PSBs have a GNPA ratio of more than 10 percent. After 2018, the picture is showing a decreasing pattern in all the PSBs except SBI which had a GNPA ratio of 5.16 percent in 2021 where rest have a GNPA ratio of more than 9 percent which is quite an alarming stage for these banks as it has a direct impact on the functioning and profitability of banking sector.

Table 5: Gross NPAs of selected PVBs as a percentage of Gross Advances from 2005 to 2021					
Year	HDFC Bank Ltd.	ICICI Bank Limited	Axis Bank Limited	Kotak Mahindra Bank Ltd.	IndusInd Bank Ltd
2005	1.72	3.03	1.99	0.69	3.56
2006	1.45	1.52	1.69	0.59	2.89
2007	1.40	2.11	1.14	2.54	3.09
2008	1.43	3.36	0.83	2.91	3.07
2009	2.01	4.42	1.10	4.15	1.62
2010	1.44	5.23	1.26	3.69	1.24
2011	1.06	4.64	1.12	2.06	1.02
2012	1.02	3.73	1.06	1.57	0.99
2013	0.97	3.31	1.22	1.56	1.03
2014	0.99	3.10	1.37	2.00	1.13
2015	0.94	3.90	1.46	1.87	0.82
2016	0.95	6.02	1.80	2.39	0.88
2017	1.06	9.08	5.70	2.63	0.93
2018	1.31	10.39	7.79	2.25	1.18
2019	1.37	7.79	6.02	2.17	2.12
2020	1.27	6.33	5.29	2.29	2.49
2021	1.33	5.57	4.06	3.32	2.73

Source: RBI

From Table 5, we can say that among the PVBs, HDFC Bank Ltd. has maintained its GNPA ratio below 2 percent across all the periods except 2009 when it was 2.01 percent only. Kotak Mahindra Bank Ltd. and IndusInd Bank Ltd. have maintained their GNPA ratio below 4 percent throughout the period except in 2009 that to only in the case of Kotak Mahindra Bank Ltd. when it was 4.15 percent. Axis Bank Ltd. also maintained its GNPA ratio below 2 percent till 2016, however after that, the GNPA ratio was more than 5 percent except in 2021 when it was 4.06 percent. Among the top five PVBs, ICICI Bank Ltd. has a higher GNPA ratio throughout the period. Between 2005 to 2015 its GNPA ratio was on average 4-5 percent, after that it touched 10 percent in 2018. From 2018 onwards GNPA ratio of ICICI Bank Ltd. had shown decreasing trend ranging from 10.39 percent to 5.57 percent, however, the average GNPA ratio during the period was 10 percent approximately.

Table 6: Gross NPAs to Gross advances ratio of selected PSBs and PVBs from 2005 to 2021		
Year	PSB	PVB
2005	5.54	2.66
2006	3.44	1.56
2007	2.61	1.93
2008	2.37	2.61
2009	2.11	3.13
2010	2.28	3.01
2011	2.45	2.47
2012	3.31	2.06
2013	3.92	1.90
2014	4.50	1.87
2015	4.61	2.09
2016	8.47	2.79

2017	10.42	4.51
2018	13.37	5.28
2019	10.10	4.15
2020	8.93	3.56
2021	8.84	3.23

Source: Authors' calculation from RBI data

With the help of the ANOVA test, we will compare the GNPA ratio of selected PSBs and PVBs and test the following hypothesis:

Null Hypothesis: H_0 = There is no significant difference in GNPA ratio of selected PSBs and PVBs.

Alternative Hypothesis: H_A = There is a significant difference in GNPA ratio of selected PSBs and PVBs.

ANOVA: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
PSB	17	97.26058	5.72121069	12.54915
PVB	17	48.7869	2.86981769	1.056757

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	69.10876	1	69.1087574	10.15864	0.003201	4.14909745
Within Groups	217.6945	32	6.80295294			
Total	286.8033	33				

Result:

It is statistically significant since the calculated F value (10.15864) > the critical value of F (4.17) from the table at a 5% level of Significance and p value $0.003201 < 0.05$. Therefore, reject the null hypothesis and it is concluded that there is a significant difference in GNPA ratio of selected PSBs and PVBs.

7. Findings and Conclusion

Post-GFC 2008, there has been an increasing trend in GNPA of both PSBs & PVBs, and in PSBs it is more in terms of absolute figures. The ratio of GNPA over gross advances shows that it was higher in PSBs as compared to PVBs except between 2008-2011. After this period, the GNPA ratio almost doubled or tripled in PSBs in some cases as compared to PVBs. The reason could be the twin balance sheet problem and structural changes that the govt. would have made. To perform a comparison of NPAs between the top five PSBs and PVBs, the banks are selected based on total asset size as of 31st Mar 2021. The top PSBs selected are State Bank of India, Punjab National Bank, Bank of Baroda, Canara Bank, and Union Bank of India and 5 PVBs are HDFC Bank Ltd, ICICI Bank Ltd, Axis Bank Limited, Kotak Mahindra Bank Ltd and IndusInd Bank Ltd. in the descending order of their asset size. All PSBs had more than 5% of the GNPA ratio in 2005 except for Canara Bank. Further, till 2008, the GNPA ratio for all these banks has shown a declining trend. Between the period 2009 and 2011, the ratio has shown a mixed trend for all these banks. After 2011, an increasing trend can be seen till 2018. After 2018, it started moving down again showing a decreasing trend due to the Government's 4R strategy. During this period, except SBI, all other PSBs held a double-digit GNPA ratio or close to that. This is an alarming situation for most of these banks as the increased GNPA ratio has a bearing on the profit-generating ability and overall functioning of the bank.

Among all PVBs, only HDFC Bank Ltd. has maintained its GNPA ratio below 2 percent across all the periods except 2009 when it was 2.01 percent only. Kotak Mahindra Bank Ltd. and IndusInd Bank Ltd. have maintained their GNPA below 4 percent throughout the period except in 2009 only in the case of Kotak Mahindra Bank Ltd. when it was 4.15 percent. In the case of AXIS Bank Ltd., it could maintain its GNPA ratio below 2% till 2016, but after that GNPA ratio has been more than 5% till 2020. We can see in 2021, it has fallen below 5%. Only in

the case of ICICI bank, it has averaged around 4% till 2015. Post-2015, it has shown an increasing trend and also reached double digits in 2018. After 2018, a declining trend in the GNPA ratio of ICICI Bank has been seen.

After performing a comparative analysis using the ANOVA test between NPAs of PSBs and PVBs, we can state that there is a significant difference in the GNPA ratio of PSBs and PVBs that implies PSBs are more exposed to NPAs as compared to PVBs and the variation is also vast. There could be multiple reasons for this. One such reason could be the govt. policies that have a direct impact on the financial sector, especially the nationalized banks. Another reason could be the advances granted by PSBs towards priority sector lending, which is mandated by the govt. for the PSBs to allocate funds for the economic development of the country through various sectors.

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